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Chapter One: Introduction and Overview of the Problem of Interest

Introduction

As professional nurses, RNs are obligated to provide the highest level of care to those entrusted to them whether it is an individual or group assignment. Managers and supervisors are challenged with mentoring, guiding, leading, and assigning other nurses effectively and efficiently in today’s health care environment to provide the optimum level of care for our patients. It is with this in mind that this Evidence-based Practice Change project (EBP) was initiated and implemented in a preanesthesia clinical unit in a major university in the United States. With use of the Ace Star Model of Knowledge Transformation (Appendix H) accompanied by the theory of Patricia Benner (Benner 2010), the project was conducted during May and June of 2010 in partial fulfillment of the requirements for a Doctor of Nursing Practice Degree at Chatham University. With the use of a list of RNs’ years of experience on the unit (Appendix I) and the American Association of Anesthesiologists Classification acuity system (Appendix E), RNs were specifically assigned to patients to match experience with patient complexity. An extensive review of literature was conducted and multiple significant studies were found that validate that the more experience the nurse has the higher the quality of care he or she will provide to the patient.
Background

For decades, there has been ongoing controversy about the recommended professional tract of education and experience for nurses. This professional tract has been studied in relation to quality of nursing care delivered. During that time, there has been a proliferation of changes in the educational preparation for nurses such as: Associate Degree Nursing Programs have been started; many diploma schools have closed; Bachelor of Science Nursing Programs have increased, and nursing graduate education, including specialization and certifications, has been expanded. The profession continues to be fragmented in some ways yet consolidated in others as the following project finds. Simultaneously, in the United States, as well as other nations such as Japan, the nursing shortage is reaching critical dimensions as the patient population ages, complex health problems increase, and the health delivery system changes (CNN, 2010). The experienced nurse is being recognized for his or her wealth of knowledge and ability to make rapid, accurate, and complex decisions. As Evidence-based Practice projects emerge and programs develop, the goal of the professional advanced practice nurse today is to obtain the best evidence to apply to practice with the goal of improving patient outcomes (Melnyk & Fineout-Overholt, 2005). The expert nurse or more experienced nurse who is a leader will play a significant role in this paradigm change.
There are certain key factors that are cause for nursing leaders to be very attentive to proper delegation while making nursing assignments. Ellis and Hartley (1998) remind us that the highest standard of care must be provided to the patient in an efficient and appropriate manner exemplified by care from the most experienced nurse. Studies have demonstrated that there is a direct correlation between nurses’ years of experience and the quality of the nursing care delivered (Blegen, Vaughn, & Goode, 2001). The American Nurses Association Standard of Professional Nursing Practice has established that it is a legal obligation to provide the highest standard of care to the patient (ANA, 2010). Research has suggested that the more experienced the nurse, the higher the level of care he or she will provide (Blegen et al., 2001) and that experienced nurses are more knowledgeable than novice nurses (Whyte, Ward, & Eccles, 2009). Nursing care without expertise presents a potentially harmful situation to the patient (Morrison, Beckmann, Durie, Carless, & Gillies, 2001).

Nursing experience may refer to years in the profession or years on a certain unit with a particular population and impact quality of care, adverse events, staff performance, outcomes and profitability. In a Canadian study, it was found that nurses’ experienced with a particular population was associated with lower patient mortality within 30 days after discharge after having a myocardial infarction, pneumonia, and a cerebral vascular accident (Tourangeau, 2006). Each additional year of nursing experience on the unit was associated with four to six fewer deaths per 1000 patients. In another Australian study, nursing inexperience was linked to 10% of the adverse incidents in an intensive
care unit (Implement Nurse Staffing, 2006). It is stated that preventable adverse events in hospitals are now killing more people than AIDS or breast cancer and costing the United States from $17 to $29 billion dollars annually (deVries et. al, 2008). A study in the Netherlands determined that one in every 10 patients has an adverse event during hospitalization and 7.4% are lethal (deVries, Ramrattan, Smorenburg, Gouma, & Boermeester, 2008). In surveying the nursing care in PETC, there were several influencing aspects of the clinical picture that needed to be considered:

1. There are varying educational levels of nurses.
2. There are varying experience levels of nurses.
3. Patient’s have varying levels of acuity.
4. Nurses do not use a standardized protocol for making assessments.
5. There was no criterion for writing quality reports.

The seven nurses on the unit consisted of two with master’s degrees in nursing, four with bachelor’s degrees in nursing, and one with an associate degree in nursing. Their backgrounds included a wide variety of experiences such as mental health, medical-surgical, ophthalmology, community health, education and administrative roles in nursing. Their length of experience on the unit was from two to fifteen years which indicated that they also were at differing points on Patricia Benner’s scale of Novice to Expert (Benner’s Stages, 2010). Of particular interest was the fact that all nurses were at the Clinician III level of the clinical ladder indicating they were all proficient. The staffing clinical ladder at the institution does not take into account how the nurse’s role
may change when changing to a new unit. For example, if one nurse functioned as a Clinician III in another clinic, they would become novices at a new assignment in a new clinic with a different patient population yet remain a Clinician III on the university career ladder.

Significance

The interest in appropriate staffing was stimulated by a discussion among charge nurses in a Preanesthesia Evaluation and Testing Unit (PETC) at a major university hospital. From this discussion, the project manager began a literature search to review research related to nursing assignments with the goal of insuring that the patient was receiving the appropriate and optimum level of nursing care. This lead to formulation of the question as the Evidence-Based Project (EBP) progressed.

The traditional method of assigning patients in the Preanesthesia Evaluation and Testing Unit (PETC) has been random for the fifteen years of its existence. Five or six years ago, the number of patient visits to the clinic were significantly higher (up to 100 patients daily) and there was greater turnover of staff including nurses. No particular consideration was given to specific nursing assignments. As the patient population is aging and presenting with more comorbidities and nursing budgets are tightening, professional RN managers and staff are finding it necessary to examine quality of care more closely. For these reasons, more attention is being given to efficiency of staff and quality of care in the current health care environment.
The project manager decided on the question of interest for this EBP change project: Are patients being assigned in a preanesthesia clinic to RNs in a manner to achieve optimum level of care as evidenced by a reduction in adverse events on quality reports? It is the professional and legal responsibility of the charge nurse to ensure proper and appropriate nursing assignments are made. Patient safety, quality of care and clinical and fiscal outcomes are dependent on the judgment of the nursing leader. If appropriate assignments are not made, patients suffer from increased mistakes of nurses with inadequate judgment. More adverse events such as higher mortality rates occur and a lower efficiency of assignments may result if nursing assignments aren’t based on nursing education, experience and patient acuity (Kanai-Pak et. al, 2008).

Question Guiding Inquiry (PICO)

PICO can be defined as an acronym which serves as a formatting guide in focusing during clinical inquiry. Formatting provides structuring and assists the clinician in finding the right evidence to answer the clinical question. It is necessary to formulate focused foreground questions to find the right evidence. “Well-built, focused clinical questions drive the subsequent steps of the EBP process “(Melnyk & Fineout-Overholt, 2005, p.29). The concerns of the project manager were succinctly stated in one clinical statement: Are patients being assigned in a preanesthesia clinic to RNs in a manner to achieve optimum level of care as evidenced by a reduction in adverse events on quality reports?

The acronym was assigned to the following components:

P=The patient population were the patients at a walk in clinic.
I=The intervention was changing the method of making nursing assignments.

C=The comparison was the number of adverse events on quality reports.

O=The outcome was the percentage of differences of adverse events from one year ago to present related to the manner of making nursing assignments (random or specific). (Melnyk & Fineout-Overholt, 2005).

In pursuing an Evidence-based Practice endeavor, there are five essential steps:

1. Formulate the burning question.
2. Collect the most relevant and best evidence to answer.
3. Critically appraise the evidence.
4. Integrate the evidence with the nurse’s expertise and the patient preference.
5. Implement and evaluate the change. (Melnyk & Fineout-Overholt, 2005).

By using the acronym PICO as recommended by Melnyk & Fineout-Overholt (2005), the project manager was able to organize the project, synthesize the literature findings, integrate into the process of making nursing assignments, implement and evaluate in the PETC unit.

Summary

The problem addressed in this change project was measurement of quality of nursing care in two different years based on the method of making nursing assignments. The method was to change the practice of making random to specific assignments based on the experience of the nurse and the patient acuity. Research revealed that more experienced nurses provided a higher level of care (Blegen et al. 2001). To measure a change, quality reports of adverse events from 2009 and 2010 were compared.
Chapter Two: Review of the Literature

Introduction

In recent years, there has been a proliferation of research studies on the effect of increased nursing experience on the quality of patient care outcomes. The following is a discussion and summary of a literature review related to creating appropriate assignments for nurses to ensure an optimum level of care for patients. The studies were done in the United States, Japan, Australia and the Netherlands and include quantitative and qualitative studies as well as meta-analyses spanning the years of 1996 to 2010.

Methodology

With the focus on researching current literature concerning nursing experience related to patient outcomes, the project manager began the search using EBSCO, CINAHL, Pub Med, the Cochrane Review and Health Science: Nursing/Academic Edition and the Wilson Web. The following key words and combinations were used: Nurses’ experience, nursing experience and adverse events, patient quality care and nursing experience, expert nurses and adverse events. Articles published from 1996 to 2010 were utilized to ensure the information was as current as possible. Bibliographies of articles were reviewed for additional studies. Of the articles, nurse ratio to patients, patient falls, mortality rates, medication errors, nurse and patient satisfaction, decubitus ulcer incidence, infection rates, patient safety data, surgical cancellations, and patient mortality rates were reviewed as related to nurse staffing. Many studies were found
related to nursing assignments and quality of care with the use of a variety of methods. Studies were reviewed and listed on a chart to facilitate the ease of reviewing, describing the article, journal, and goal, the year of publication and type of research, the population characteristics, the outcomes, and strengths and weaknesses of each article. Studies were then ranked in order of specificity of concern and relationship to the problem.

For this project, a group of studies were found and used to include four significant quantitative, two meta-analyses, and four qualitative studies from the following journals. Journals included were The Journal of Nursing Administration, Journal of Clinical Nursing, The Journal of Acute and Critical Care, The International Journal of Nursing Terminologies and Classifications, Western Journal of Nursing Research, and Australian Critical Care Journal. This review was combined with a significant study from the Netherlands in the Quality and Safe Health Care publication. Findings were classified as experience of nurses, inexperience of nurses, adverse events, decision making, and the novice and expert nurse.

Findings

Experience of Nurses

Experienced nurses consistently delivered a higher quality of nursing care as demonstrated in numerous studies. Aiken participated in a study of 5956 staff nurses, 302 units and 19 acute hospitals in Japan. The focus was the nurses’ years of experience, nurses’ burnout, and job dissatisfaction along with nursing quality deficits. The results suggested that individual nurse burnout and dissatisfaction is associated with poorer
quality of care in workplaces that have larger percentages of inexperienced nurses (Kanai-Pak, Aiken, Sloane, & Poghosyan, 2008). In 2001, nursing staff inexperience was addressed by Australian researchers. The Australian Incident Monitoring study in intensive care units was applied to 1,472 incidents. The outcomes demonstrated more adverse events with inexperienced nurses (Morrison et al. 2001). Blegan et al. (2001) also studied nursing care given by more experienced nurses and recommended more studies although, in general, it is believed a higher quality of care with fewer adverse events accompanied experienced nurses.

Ferrario (2003) examined the expertise of experienced nurses also in clinical simulations. Data were collected from a computerized random sample of 620 of the 21,577 member International Emergency Nurse Association from July through September, 2001. The overall response rate was 35%. Patrician Benner’s (2010) definitions of novice and expert nurses were utilized with five or more years of emergency experience defined as the experienced group and less than five years as the novice or less experienced group. The investigator focused on the use of heuristics in both sample groups and found the more-experienced group to be the most proficient (Ferrario, 2003).

Similar results were reported in a 2002 study focusing on characteristics of nurses, their environment and the fostering of clinical expertise. The study was conducted at two military hospitals which totaled 388 patient beds and involved eight patient units. The Nursing Work Index Revised was used to measure autonomy, control over practice and collaboration with other health care professionals. A tool called the Manifestation of
Early Recognition was used to measure clinical nursing expertise. The goal of the study was to measure the nurses’ ability to identify subtle changes or cries in a patient which might signify deterioration in the patient’s condition. Rapid recognition and intervention of changes in a patient can prevent further deterioration of the patient status. The sample included nurses from the age of 22 to 64 with experience ranging from less than one year to 40 years. The study confirmed that nurses with greater autonomy, better relationships and more control over their practice are happier in their environment and more likely to perform at a higher level (Foley, Kee, Minick, Harvey, & Jennings, 2002). A qualitative study demonstrated that nurses’ ability to recognize subtle cues and to initiate appropriate intervention is enhanced by their level of experience and expertise (Batcheller et al., 2004).

Blegan et al. (2001) studied the effect of nursing experience and education on quality of nursing care. Two studies were conducted over a one-year period with 42 inpatient units in the first and 39 patient care units in the second. Variations in staffing, in experience and education were examined as well as adverse events outcome data. Statistical analyses of events were measured with means, standard deviations, ranges, coefficients of variation and bivariate correlations as well as multivariate analysis of medication errors and patient falls. Prevailing evidence revealed that the two studies demonstrated that more experienced nurses provided a higher level of care. This validated a crucial need for more experienced nurses in hospitals (Blegan et al., 2001).
Nursing experience can refer to experience working as a nurse or experience working with a specific population. A Canadian study showed that nursing experience working with a specific population was directly related to lower patient mortality after leaving the hospital following a heart attack, stroke, and pneumonia (Tourangeau, 2006). Each additional year of nursing experience on the unit was linked with four to six fewer deaths per 1000 patients. It was also reported that in an Australian study, nursing inexperience was related to 10% of adverse events in the intensive care units (Implement Nurse Staffing Plans, 2006).

In a qualitative descriptive study, the cognitive strategies utilized by experienced nurses in assessments were examined. A small group research design was employed using the Think Aloud (TA) method with analysis. Fifteen experienced nurses were asked to use this method in making patient assessments on five adult medical-surgical units of a 250 bed teaching community hospital. It was decided that an experienced nurse would be defined as an RN with a minimum of two years but less than ten years of full-time work experience on the unit. The researchers used Benner’s framework and decided that there would be a minimum two years criterion for nurses between novice and expert (Benner, 2010). After analysis of the data collected during patient assessments, the results suggested that experienced nurses use a conceptual language to reason about assessment findings and are able to use heuristics to reason more rapidly, effectively, and efficiently (Simmons, Lanuza, Fonteyn, Hicks, & Holm, 2003).
Inexperience of Nurses

In searching the literature for inexperience in nurses, some recent studies were found that addressed the problem. Kanai-Pak et al. (2008) completed a significant Japanese study which focused on work environments and nurse inexperience. A cross sectional survey of 5956 staff nurses on 302 units in 19 acute care hospitals in Japan were used. The subject is said to be of great interest in Japan as they are experiencing a widespread shortage of nurses. Both the Maslach Burnout Inventory and the Nursing Work Index Revised were used with the sample of nurses. The results indicated 56% of nurses scored high on burnout; 60% were unhappy with their jobs; 59% ranked care quality as poor. These results were twice as high in hospitals with 50% “in experienced nurses than with 20% inexperienced nurses and 40% higher in hospitals where nurses were unhappy with relationships with physicians (Kanai-Pak et al. (2008). More experienced nurses need to be encouraged to remain in nursing and management needs to focus on retention of expert nurses (Benner, 2010).

Morrison et al. (2001) researched the performance of experienced and inexperienced nurses in the intensive care unit in a descriptive, qualitative study. They identified 735 reports covering 1,472 adverse events which directly related to nursing inexperience. There were a total of 16,000 adverse events reported for the time period. Multiple influential factors were mentioned in this article which expanded the effect of events. Adverse events significantly increased in this intensive care unit with the use of less experienced nurses (Morrison et al. (2001).
Adverse Events

Nursing databases documented many studies in which adverse events were measured as an indicator of quality of nursing care. To understand the gravity of adverse events, the Joint Commission of Health Care Organizations has a definition (JCAHO, 2010). Adverse events or outcomes are defined as untoward, undesirable and usually unpredictable events such as the death of a patient, an employee, or a visitor in a health care setting. They may involve falls or improper medication administration and need not have a permanent affect on the patient. A form of adverse events which is quite serious is the sentinel event. The sentinel event is defined as an unexpected event involving serious physical or psychological injury or death. If a situation presents a risk of serious injury, it also may be termed as a sentinel event (JCAHO, 2010).

Needleman, Mattke, Stewart and Zelevinsky (2002) studied the association between nurse staffing levels and adverse events in a setting of medical-surgical nurses. By analyzing more than 6,000,000 patient discharge records from 799 hospitals in 11 sites, researchers collected data on RNs, LPNs, and aides in hours per day, infection rates, and length of hospital stays. RNs presence and care had the biggest impact on patient outcomes again indicating that the higher the education the better the outcome. The more time RNs spent with a patient, the shorter the hospitalization. With a staff composed of fewer RNs, there was a higher rate of urinary tract infections and postoperative surgical infection rates. It was estimated that the patients who had RNs
with higher levels of experience had lengths of stay 5% shorter and rates of complications 2-9% lower than hospitals with low RN staffing rates (Needleman et al, 2002).

Needleman et al. (2002), in a systematic review, reviewed 8 studies including a total of 74,485 patient records and examined and reported on the total adverse events. Approximately one million adverse events involving patient harm or death are reported yearly (Fero, Witsberger, Wesmiller, Zullo, & Hoffman, (2008) at a cost of $17 to $29 billion annually (deVries, Ramrttan, Smorenburg, Gouma, & Boermeester, 2008).

In an Australian study, more than 7500 reports totaling 16,000 adverse events were documented in a national database and all were related to nursing inexperience. The list of events included procedures, medications, equipment and environmental issues (Morrison et al, 2001). By applying the Australian Incident Monitoring Study in Intensive Care Units, the writers recognized that “nursing care without expertise” presented a potentially harmful situation for the patient. They also recognized that inadequate staffing with high unit acuity and inadequate supervision with training were contributory factors (Morrison et al. (2001).

In another study from 2004-2006, a sample of 2144 newly hired nurses in a university hospital were asked to complete the Performance Based Development Systems Assessment. It consisted of 10 videotaped vignettes which demonstrated a change of patient status. The study emphasized patient safety and reported that 98,000 people in the
United States each year die and one million suffer injuries due to preventable mistakes made in the healthcare system (Fero et al, 2008). As a result of inefficiency including inappropriate use of health care resources and poor communication, 30-40% of every United States dollar spent on health care is lost. A large role of assurance of patient safety relies on nursing competence. “A majority of sentinel events occur in acute care settings where new graduate nurses traditionally begin their professional careers. Seventy per cent of sentinel events result in a patient death while 10% result in a disability “(Fero et al., 2008, p.140). This study stressed the importance of critical thinking abilities and attempted to measure the effectiveness of new and experienced nurses. Overall, it was found that Associate and Bachelor degree nurses were more likely to meet expectations as experience increased. New graduates were less likely to meet expectations compared with nurses with greater than ten years of experience (Fero et al. 2008). These findings support Patricia Benner’s conceptualization in her novice to expert framework (Benner, 2010).

Batcheller et al. (2004) studied patient safety related to the expert nurse as defined by Patricia Benner (Benner, 2010). He utilized seven acute care hospitals in Texas and implemented a Primary Care Team Care Model. Through the use of RN surveys, incident recording, and personnel documents, he found there was a 64% in staff turnover and a 77% reduction in medication errors when an expert nurse was in charge of the team. Although the study failed to reveal the total number of RNs included, the conclusion was an expert nurse is valued, seen as a clinical leader, and provides
surveillance, oversight, mentoring, and collaboration to produce a high quality of nursing care.

**Decision Making**

Patricia Benner (2010) wrote about the differences in decision making of nurses in the stages she described from novice to expert. Reischman and Yarandi (2002) compared diagnostic expertise between expert and novice critical care nurses in a Florida study in 2001. They defined diagnostic expertise as the ability to make rapid and accurate patient assessments based on relevant objective and subjective cues. A sample of 23 expert nurses and 23 novice nurses were given written patient simulations followed by asking the nurses to provide diagnostic explanations for the symptomatology. Chi-square analyses revealed diagnostic accuracy was higher with experts than with novices (Reischman & Yarandi, 2002). Of the accurate diagnoses, experts made accurate diagnostic predictions 72% of the time while novices made them 28% of the time (Batcheller, Burkman, Armstrong, Chappell, & Carelock, 2004). Cognitively, the more experienced nurse was found to be much more accurate in assessment of diagnostic cues (Tabak and Bat-Tal, 1996).

Australian nursing researchers focused on the intuitive abilities of expert nurses in a study published in 2008. The hermeneutic phenomenological study was completed by using Manen’s approach and a Gadamerian analysis (Lyneham, Parkinson, & Denholm, 2008). Fourteen expert nurses in Australia were interviewed between January 2000 and December 2003. The purpose was to explore the experience of intuition in emergency
room nurses to Patricia Benner’s fifth stage of practice development of the expert nurse (Benner, 2010). The 15 participants were interviewed using a set of open ended questions that began with, “Tell me about a time when intuition played some part in your work as an emergency nurse, even if you did not act on it at the time” (Lyneham et al., 2008, p.384). Analysis of the findings demonstrated that ‘intuition is a developmental aspect of clinical practice” (Lyneham et al., 2008, p. 385). Knowledge and experience become entwined in a nurse as she or he progresses. A key part of this process is cognitive intuition that involves the ability to process information on conscious and unconscious levels rapidly and automatically. Transitional intuition consists of connecting cognitive and “embodied” intuition. The latter concerns the trust of the expert nurse in herself and has been described by an expert nurse as “working at a different level of consciousness: A transition between my mind and my body” (Lyneham et al, 2008, p. 384). Findings of this study were recognition of various levels of intuition in expert nurses, validation of intuitive practice and that education and reflection along with critical thinking needs to be fostered in novice nurses (Benner, 2010). A study by Simmons et al. (2003) focused on the clinical reasoning skills of expert nurses. It was a descriptive study to examine the cognitive processes of experienced nurses and took place on five units in a 250 bed teaching hospital. The “Think Aloud” method used in the study and the outcomes identified the complex reasoning processes used by experienced nurses and suggested they use a conceptual language to reason about findings of assessment. They use heuristics to reason more quickly and effectively (Simmons et. al, 2003).
Liberman (2000) described intuition as an immediate perception of risks that guide the RNs’ decisions and actions which is based on cues learned from past experience; the perceiver processes the cues rapidly and does not consciously identify them. It involves a type of rapid information processing in which a current situation is compared with a past experience (Ruth-Sahd & Hendy, 2004). This is the same intuitive decision making in expert nurses as described by Patricia Benner (Benner, 2010).

Taylor et al. (2002) examined the decision making of expert and novice nurses in a qualitative meta-analysis. Undergraduate BSN students were randomly selected to be the novice population and RNs with more than five years of experience represented the expert group. Each participant was observed caring for the patient while showering, taking blood pressures, testing urine and taking a blood glucose measurement. There were a total of 18 novices and 15 expert nurse participants who also took the semi-structured interview which related to data collection prior to patient care. It was found that the expert nurse was more likely to utilize several sources of information prior to patient care. There were also differences in the interpretation and use of the information collected by novice and by experts. It was found that the expert nurses are better able to consolidate and prioritize the data in a more efficient manner (Taylor et al. 2002).

Novice and Expert

Intertwined in much of the nursing research, Patricia Benner’s stages were discussed frequently because it was the nursing career ladder at the setting of the project and her
name appeared so often in the related research. The stages of experience in RNs were studied at Florida State University by James Whyte, Paul Ward and David Eccles. Their study was based on an “experimental research design focused on the expert performance approach” (Whyte et al. (2009), p. 6). The sample of 24 nurses was recruited from seven medium to large size regional health care facilities; twelve were in the novice group and twelve were in the expert group. A simulated task environment was developed and five patient scenarios were developed for subject response. Subjects completed a questionnaire focused on their training and experience. Analysis of the data was accomplished by use of SPSS (Statistical Program for the Social Sciences). This data revealed a significant difference between the groups of novice and experienced nurses. Consistent with previous studies, the data demonstrated that experienced nurses are more knowledgeable than novice nurses (Whyte et al. (2009).

The first of the qualitative studies to be reviewed was that of Foley et al. (2002) who also referred to Patricia Benner as the designer of the expert nurse. The subtle changes in patients were discussed in this research which took place in two military hospitals. The total number of patient beds was 388 and the total number of RNs involved was 185. Ages of the RNs ranged from 23 to 64 years and experience from one to 40 years. Four instruments were utilized: Clinical Expertise instrument, Nursing Work index, manifestations of Early Recognition tool and an RN survey questionnaire with patient scenarios. Seen as weaknesses, nearly 50% of the RNs did not respond and the
Manifestations of Early Recognition was a new tool untested at the time. The conclusion was that experienced nurses have a greater ability to recognize subtle changes with patients and initiate appropriate action to prevent adverse events.

Also related to Patricia Benner’s classifications (Benner, 2010), Lyneham et al. (2008) reviewed and reported on intuition in expert emergency room nurses. This was descriptive, qualitative research or a “hermeneutic phenomenological study using Van Maners approach and a Godamerian analysis” (Lyneham et al. (2008). From January 2000 to December 2003, fourteen RNs with 4.5 to 30 years of experience were interviewed and asked to respond to patient scenarios. It was concluded that proficient expert nurses are ‘analytical and fluid and their knowledge, experience, and intuition are entwined in their professional being (Lyneham et al., 2008, p. 383). The findings validate the use of intuition in decision making of expert nurses.

The Whyte et al. (2009) study focused on novice and expert nurses in a critical care setting and was significant in that it demonstrated that experienced nurses are more knowledgeable in responding to simulated scenarios than novice nurses. There was a small sample involved totaling 24 nurses from seven regional healthcare facilities. Scenarios were presented to each group and SPSS (Statistical Package for Social Sciences) software was used for analysis. “Consistent with previous studies examining the knowledge of nurses, the present data demonstrates that experienced nurses are far more knowledgeable than novice nurses” (Whyte et al. (2009), p. 384).
Limitations

At this stage in the project, the only obvious limitation was time. To achieve a greater number of patients for the project, the coordinator extended the implementation from 4 to 6 weeks. This allowed a greater number of patients to be included.

Conclusions of the Evidence

The evidence found throughout this literature review validated the value of nurses with increased experience. After reviewing the current evidence, it has been demonstrated that patient outcomes and quality of care improve with increased experience of the nurse on the specific unit. When experienced nurses are assigned to complex patients respectively, the number of adverse events such as patient falls and medication errors decrease. Likewise, when novice or inexperienced nurses are assigned to complex patients, there are a greater number of adverse events (Blegen et al., 2001).

Summary

Having reviewed these studies, a multitude of factors are involved in determining the quality of nursing care. All factors are of high importance in our current health care environment which includes older, more complex patients. More than ever, nursing competence must be considered when making assignments with particular attention to matching the nurse’s experience and expertise with the diagnosis and comorbidities of the patient to ensure the optimum level of care. It is essential to ensure the
highest quality of care for our patients and this can be best accomplished by identification of the various levels of nurses’ experience and patient acuity and matching se.
Chapter Three: Framework for the Practice Change

Introduction

There are alternatives when choosing the organizational framework for an EBP change project. Melnyk and Fineout-Overholt, (2005) outline and discuss a number of frameworks including the University of Rochester Cycle of Learning Model, the Stetler Model, Funk’s Model of Research Dissemination, The Iowa Model and the Rosswurm and Larrabee Model. The Ace Star Model was selected for this practice change. The Ace star model seemed to be the most suitable and desirable because it can be implemented with ease, is easy to explain and understand, and provides the necessary framework (Melnyk and Fineout-Overholt (2005).

Organizational Framework

Ace Star Model of Knowledge Transformation

For this change project, the Ace Star Model of Knowledge Transformation was utilized. Developed by the Academic Center for Evidence-Based Nursing of the University of Texas Health Science Center at San Antonio, Texas, it provides a model for understanding the cycles, nature and characteristics of the knowledge transformation. For this project, this model provided a framework and a clear guide as the EBP project progressed. Configured as a star, each of the five points represents a major change which one moves through from discovery to evaluation (Ace Star Model, 2010).
**Stage One: Discovery**

Point one on the star is Discovery or the point at which new knowledge is generated by reviewing original research and through scientific inquiry. Primary research studies may range from descriptive to correlational to causal and may include randomized control trials to qualitative studies. This is identified at the time the question was formulated and the literature review initiated (Melnyk & Fineout-Overholt, 2005). During this stage, a wide variety of studies were collected which included several meta-analyses, qualitative and quantitative research articles.

**Stage Two: Evidence Summary**

Point two on the star is summarizing the research findings. This stage is considered unique to EBP (Melnyk & Fineout-Overholt, 2005). The task of this phase is to collect and synthesize the research studies into a meaningful statement. There are multiple sources of evidence review summaries which include integrative reviews of studies, primary research, random trials, and systematic reviews (Melnyk & Fineout-Overholt, 2005). A key purpose of this phase was to reduce large quantities of information into an organized and manageable form. It helped the project manager to establish generalizability, assess consistency and inconsistency with study findings and integrating existing information which increased efficiency (Ace Star, Model, 2010). The most representative of Stage Two in this change project was the consolidation of all research findings.
Stage Three: Translation

Translation is a period in which the evidence of summaries is compiled into a relevant package that suits time, cost, and standard of care for the specific change project. Research findings are combined with clinical expertise and patient cultural preference to produce clinical recommendations with the goal being best practice based on best research. From this base, nursing standards or protocols may be developed to cause a change in nursing practice (Melnyk & Fineout-Overholt, 2005). Translation consisted of moving from consolidation of findings of the review of literature to producing an integrated package suitable for the PETC unit in this change project.

Stage Four: Integration

This phase may also be called Implementation and involves the actual changing of nursing practice both individually and organizationally (Melnyk & Fineout-Overholt, 2005). The change of practice is activated based on the consolidation of the research findings, the nursing expertise and the patient culture. It was at this point that the six week period in PETC began with the charge nurses making specific assignments based on the experience of the nurse on the unit and the complexity of the patient.

Stage Five: Evaluation

This final point of the star involves reviewing, discovering, weighing, and measuring the outcomes of the change project to reach a decision of the effectiveness. This crucial step validates if a change has occurred and that knowledge has been converted to practice
(Melynk & Fineout-Overholt 2005). Quality reports of adverse events from the six week period in 2010 when specific nursing assignments were made were compared with quality reports from a six week period in 2009 when random nursing assignments were made. The comparison results were recorded in percentages and the types of adverse events were noted (Ace Star Model, 2010).

Patricia Benner’s Theory of Novice to Expert

In 1984, Patricia Benner, a nationally recognized leader in nursing research, applied the Dreyfus and Dreyfus model of skill acquisition to the practice of nursing. Herbert and Stuart Dreyfus suggested that progress from novice to expert nurses was a process which develops from a situational fact bases to practicing automatically and intuitively (Lyneham et al., 2008). The Dreyfus model (upon which Benner based her theory) posits that the acquisition and development of a skill requires a student to pass through five levels of proficiency: Novice, advanced beginner, competent, proficient, and expert. These levels are further classified into three general aspects of skilled performance. The first is a reliance on past concrete experience; the second is more complete vision of the task, and the third one moves from detachment to involved performer who is involved in the situation (Benner, 2010). Benner’s conceptualization was often cited in research articles in the review of literature as well as being the framework for the nursing career ladder at the university hospital which was the site of this project (PNSO, 2010). For clarification, it seemed wise to include a brief explanation of her theory and stages.
Benner outlined five stages in nursing evolution.

**Stage One: Novice**

Beginners have no experience in the arena in which they are to perform. These nurses are usually newly hired on a unit and follow the basic rules which stand alone and are not related to specific cases. There is no consideration of current patient need as the practitioner focuses on his or her task. There is no flexibility and adaptability to the current situation (Benner, 2010).

**Stage Two: Advanced Beginner**

At this stage, global characteristics are recognizable by the nurse which can be identified as having previously experienced (Lyneham et al., 2008. The performance of the nurse is considered “marginally acceptable” (Benner’s Stages, 2010, p.1). Fundamental behaviors and problem solving actions begin to form (Benner, 1984).

**Stage Three: Competency**

Benner wrote that a competent nurse has the experience and ability to cope with a wide variety of situations, but lacks speed and flexibility. Typically, it takes two to three years at the same job to reach this level. The nurse is able to see his or her behavior with long range goals in conscious awareness. Because of this, efficiency and organization are achieved. The competent nurse lacks the speed and flexibility of the proficient nurse but
possesses a feeling of mastery and performs very well in a variety of situations (Benner, 2010).

**Stage Four: Proficient**

A proficient nurse is analytical and fluid and is able to interpret ‘when the expected normal picture does not materialize’ (Lyneham et al., 2008, p. 381). This practitioner sees the long-term goals and global implications in a situation and knows how to plan quickly when a modified response is needed. He or she is able to recognize the “unintelligible nuances of the situation’ which can mean one thing at one time and another thing at another time (Benner, 2010).

**Stage Five: Expert**

The expert performer no longer relies on rules to govern his or her pattern of behavior in making decisions. He or she is quickly able to assess the situation and respond appropriately because of the enormous wealth of experience and developed intuitive skills. Performance is fluid, flexible and highly proficient. This nurse is able to use analytical tools as well (Benner, 2010).

Conclusions and Summary

The Ace Star Model was selected as the design for this EBP change project and proved to be easily understood and usable. The framework was effective and allowed an easy transition from one point to another on the star. The explanation of Benner seemed
essential as her conceptualization was so intertwined with the appropriate assignment of nurses to patients. Her conceptual theory was found often in the research and directly related to the PETC clinic.
Chapter Four: Project Design

Introduction

The purpose of the EBP change project was to examine the present practice of random RN assignments and compare with specific RN assignments based on nursing experience on the unit and patient acuity. The goal was to ensure that each patient was receiving the optimum level of care. Seven RNs were involved and approximately 1600 patients over a six week period in 2010 and a six week period in 2009.

This EBP project was conducted at a major university hospital in a walk in clinic for preanesthesia patients. Approximately 1600 patients were evaluated, assessed, and taught pre-surgical information by four to seven nurses in a six week period which involves close to 14,500 patients yearly. RN’s number of years of experience on the unit was matched with patient acuity based on a classification system. The number of adverse events on quality reports for this period was compared with a six week period a year prior when nursing assignments were random.

Project Design

The burning question for this change project was developed in the fall of 2009 as the method of assigning RNs to patients was discussed in a preanesthesia clinic at a major university hospital. Preceptors were selected; IRB exemption was obtained; the PICO
statements were formulated and the research process begun in May 2010 (Melnyk & Fineout-Overholt, 2005). As the reviewing of research articles began, so did the plan for implementation of the project. Formerly, there was a routine practice of 100% random assignments of patients. All RNs on staff are classified as Clinician IIIs on the university career ladder which utilizes Benner’s stages as a framework (Benner, 2010). The seven RNs have experience on the unit ranging from two years to 15 years which were a mix of novice, advanced beginners, proficient, and expert nurses (Benner, 2010). In this walk-in clinic (no appointments), approximately 1200 patients are evaluated monthly prior to surgery using protocols written by the Department of Anesthesiology. The only commonality of the patient population is that all are there for assessment for general anesthesia prior to a surgical procedure; these procedures can range from a minor procedure to a complex neurological or cardiovascular surgery. Patients are evenly distributed between males and females and usually consist of adults with a heavy concentration of adults over the age of 50. Children are also seen in the clinic ranging from several days through 18 years of age. There is a mix of cultures and races, with the majority being Caucasian.

A typical day in the clinic consists of four to seven RNs conducting evaluations, assessments, and teaching to an unpredictable number of patients of any age for any surgical procedure. Being open approximately 20 days per month and a population of 1200 patients per month, there was an average of 60 patients seen daily. For this project,
a list containing each nurse’s number of years on the unit (Appendix I) was utilized as
well as the American Association of Anesthesiology Classification System (Appendix E)
for acuity. The charge nurse and assistant charge nurse had been trained by the
Anesthesiology Department to interpret and apply guidelines of the American Heart
Association Cardiovascular Guidelines (Appendix K). These tools were utilized as
specific assignments were made during the six weeks of this change project in the PETC
unit. The goal was to match the RNs experience on the unit with the complexity of the
patient and determine if improved care was delivered based on a decrease in adverse
events over a six week period comparing data from two different years.

The American Association of Anesthesiologist’s Classification system consists of six
categories that represent a continuum from a healthy patient to a comatose patient.
Category one is a healthy patient. Category two is a patient with mild systemic disease.
Category three is a patient with severe systemic disease. Category four is a patient with a
severe systemic disease that could potentially threaten life. Category five is a moribund
patient who is not expected to live without the surgery. Category six is the patient who is
comatose and brain dead. Nurses on the unit with one to three years of experience on the
unit were assigned Categories one and two. The more experienced nurses on the unit
with five to twelve years experience on the unit were assigned Categories three and four.
Comatose patients are rarely if ever seen on this unit (American Association of
Anesthesiologists, 2010). An example of matching RN experience with acuity could be
exemplified as assigning the expert nurse the Class IV patient with multiple sclerosis while assigning a novice nurse the healthy child coming in for a minor dental procedure.

Conclusions and Summary

The purpose of this change project as to improve the level of nursing care in a preanesthesia clinic by changing the method of making RN assignments. Research findings indicated a pattern of a higher quality of care being given by the nurse with more experience (Blegen et al., 2001). The project design was application of the American Anesthesiologist Classification of Acuity and the years of experience of the nurses in making specific RN assignments that were deemed the most appropriate by the charge nurse. This was piloted for a six week period and compared with a six week period one year earlier. Results were measured by counting adverse events from each time frame and reporting them in percentages. This report would be presented to the unit practice committee.
Chapter V: Implementation Procedures and Process

Introduction

The problem statement addressed was: Are patients being assigned in a preanesthesia clinic to RNs in a manner to achieve optimum level of care as evidenced by a reduction in adverse events documented on quality reports? To measure the effectiveness of specific RN assignments rather than random in a clinic, a change project was implemented during which RNs were assigned patients by matching their experience on the unit with the patient acuity. This project took place over approximately six weeks and was accomplished by using a summary of RN experience on the unit (Appendix H) and a classification tool produced by the American Association of Anesthesiologists (Appendix J). Quality reports from 2009 and 2010 for the same time period were analyzed and compared with percentages reviewed to establish if they demonstrated an improved quality of care.

Process and Procedures

Rudimentary thoughts for the “burning question” occurred in the clinic early in 2009 while charge nurses were discussing methods of assigning nurses to patients. The staff consisted of seven nurses with two being considered novice (Benner, 2010). The questions of measurement of patient quality of care emerged and the tools were identified. After hours of speaking with advisors, preceptors, and RNs, the project coordinator contacted the IRB department of Chatham University and obtained approval
(Appendix A), informed the RN staff (Appendix B), and secured approval from the unit acting supervisor (Appendix C). These were accomplished in early May, 2010, to allow implementation to begin May 10, 2010. Beginning on that date, the project coordinator used the American Association of Anesthesiologists Classification System (Appendix E) and the list of RN Clinicians years of experience (Appendix I) to make assignments. The RNs were assigned to patients based on RN experience on the unit and the patient complexity.

Charts in this clinic were hand written with some computerized resources available. When patients arrived, the clerical staff first collected demographic data, confirmed their name and spelling of the name, placed an identification bracelet on them, and instructed them to complete a short questionnaire while waiting which included their medical history, allergies, medications, activity level and contact information. Charts were placed in a rack in order of arrival in a manner to maintain confidentiality and to be picked up by the next available nurse. As charge nurse, the coordinator quickly reviewed charts to make initial evaluations of patient surgery, presence of history and physical, presence of consent, age, complexity, and the need for laboratory tests, chest x-rays, and EKGs based on established guidelines of the Anesthesiology Department, the algorithm of the American Heart Association Guidelines for Cardiovascular surgery (Appendix K) as well as the professional nursing judgment of the coordinator. The coordinator signed the front sheet of the medical record to indicate she had accomplished these reviews. Next, the patient was specifically handed to the most suitable nurse based on the
established criteria (Appendix I and Appendix E) of this change project. On being given a specific patient, the RN assigned also reviewed the medical record, allergies, surgery, medications as a second review. He or she was also expected to evaluate and suggest additional testing within the Department of Anesthesiology guidelines as needed. The assigned nurse also reviewed the EKG results while the patient was in the clinic to determine if the result was appropriate for the patient, if it was a normal reading, if it presented changes in cardiac function, or if an older EKG was needed for comparison. The nurse also decided an estimate of where the patient falls on the American Heart Association Algorithm (Appendix K). Based on the location on the algorithm, the assigned nurse decided if physician intervention was needed prior to surgery to ensure the safety of the patient through the anesthesia experience. If a consultation with another department such as cardiology, pulmonology, or medicine, the consult was initiated by the assigned nurse after consulting with an anesthesiologist. The assigned nurse completed the proper form and made the appointment by telephone. She then faxed the request to the clinic after being certain the attending service was in agreement and the patient had been informed. This information was documented in writing on the patient medical record with date, time, and signature. The assigned RN was expected to follow this patient through the preanesthesia process, collect test results, and document or communicate vital information to the surgical and anesthesiology attending physicians as appropriate.
The patient medical record reviewed by the charge nurse required as much as 20 minutes for some patients particularly if physician clarification or confirmation was required by phone or the paging system. An estimated average of five minutes was allowed per patient. During the project time period of May 10 to July 2, 2010, a total of 37 eight hour shifts were utilized for this project which totaled 296 clinical hours. The Ace Star Model (Stage 4: Implementation) was used as the conceptual framework during this knowledge transformation (Appendix H). This phase which is point 4 on the model involved activating the change into practice.

**Patient Population**

The patient population was that of the PETC clinic at a university hospital. At this clinic, all patients arrive randomly without appointments having been referred by their respective surgeons. All ages and cultures are seen for surgeries ranging from a simple superficial excision to a major, high risk procedure. Both sexes are equally distributed and about 10% are pediatric patients. There are probably a higher percentage of patients sixty years of age and over. Because the hospital is partially state supported, many patients are indigent, have no insurance or financial resources and have a history of minimal previous health care. The hospital also receives high risk surgical patients from all areas of the state, the United States and from Russia, South America, China, England, and other parts of Europe.
Seven registered nurses are employed in the PETC clinic. Six are female, one is male, and all are Caucasian. Two have masters degrees in nursing; four have bachelor degrees in nursing and one has an associate’s degree in nursing. There are two RNs who have been on the unit from ten to fifteen years, two for over 5 years, and the remainder for less than three years (Appendix H). Applying Patricia Benner’s theory of stages, two of the nurses would be considered novices and most of the others proficient or experts (Benner, 2010).

**Measurement Tool**

Quality reports (Appendix J) were used to measure adverse events between May 10 and July 2, 2010. Adverse events were defined as “any negative change in a patient’s clinical situation arising” or any situation of potential harm to the patient after arriving at the clinic (Maistrello, 2004, p.108). An example of an adverse event would be patient falls, cardiac arrests, drastic increase or decrease in blood sugar, failure to obtain appropriate preoperative blood tests (type and screen with blood units ordered), active chest pain, symptomatic untreated infection, and any urgent situation requiring immediate intervention. The number of events and their nature were noted and compared to the same time period one year ago when assignments were random. Percentages were calculated and compared and the type of adverse event was recorded. Quality reports were monitored and placed in the appropriate data base weekly by an RN who is designated with that unit assignment. The reports from all departments are submitted to a computerized data base for the hospital from which is drawn statistical data. This data
would appropriately be reviewed by accreditation bodies such as Joint Commission of Health Care Organizations. To review the quality reports for PETC, the project coordinator created a chart listing all reports from May 10 to July 2, 2009 and 2010. The events were categorized into clerical, clinical and other; they were counted and percentages were formulated for comparison.

_Educational Presentations_

The project coordinator created, planned, and presented educational presentations to the RN staff during the project. Because the coordinator is chair of the unit Practice Committee (part of the shared governance model utilized by the organized nursing body of the hospital) (PNSO, 2010), the meeting provided the forum and opportunity monthly to present Evidence Based Practice information. Practice meetings were routinely held monthly on the unit from 5:30 to 6:30 pm on Thursdays. All RNs attended as well as the supervisor and manager of the unit. During these meetings, any clinical concern or change related to the unit was announced, shared, discussed, and, when appropriate, voted upon. This group encompasses the work of the education and quality committees who were represented as well. Minutes were recorded, distributed, and stored in the project coordinators office.

The first in-service was a brief handout and discussion for the RNs (Appendix F) held during the 3rd week of May 2010. A brief power point hand out was also distributed to the nurses and several weeks later a brief e-mail inservice was sent describing how to access current nursing research articles from their desk top computers (Appendix G).
During June, 2010, the coordinator presented a Power Point Poster presentation to the nursing staff about the change project. The poster was previously presented at the DNP residency of the coordinator in Pittsburg, Pa., in April, 2010, in particle fulfillment of a Capstone Project requirement (Appendix G). The goal in these educational sessions was to be succinct, clear, and allow time for discussion within a five to 10 minute time frame. On one occasion, three nurses asked questions. Two of those RNs were expert nurses and one was a novice nurse on the unit. There questions reflected an interest and curiosity about the project as well as support for the coordinator.

Conclusions and Summary

The implementation of the pilot project was the beginning of a potential change in nursing practice in the PETC unit. Employees were willing and accepting of the change and expressed minimal verbal interest in being a participant of the change project. One novice nurse and one expert nurse exhibited some passive aggression toward assignments exhibited by often choosing their own rather than being assigned.
Chapter VI: Evaluation and Outcomes of Practice Change Initiative

Introduction

The purpose of this chapter is to review the outcomes of a change project where quality reports of adverse events in a preanesthesia clinic were measured for a time period in which specific nursing assignments were created as opposed to the random assignments of one year ago. It took place over a period of 296 clinical hours between 10, and July 2, 2010. Nurses were assigned patients based on their years of experience on the unit and patient acuity based on a classification system (Appendix E). During the same dates in two different years, the number of surgery cancellations was unchanged. Cancellations for surgery totaled two each year and were seen by the same two nurses in PETC (one an expert and the other a novice). The quality reports were inconsistent, often reported non-clinical information, and were written mostly by the laboratory staff.

Measurement Tool

Quality reports (Appendix J) for the two time periods involved in the project were examined. Completion of these reports was a performance expectation of staff when adverse or unusual events occur which are harmful or potentially harmful to patients. They were computer based and required approximately fifteen minutes to complete. These reports were used as the measurement tool for this change project to determine if quality of care improved by a change in the method of making nursing assignments.
In 2009, 22 adverse events were recorded for the clinic for the time period. Ten of the errors or nearly 50% were clerical such as an incorrect name spelling and completed by laboratory staff. Three reports were completed by RNs and were cancellations for surgery because of need for further cardiac work up (2) and one for a glucose reading of 601 the morning of surgery. Other reports were unit issues such as spilled urine and an unlocked door.

Quality reports from May 10 to July 2, 2010, were also reviewed during which specific nursing assignments were made according to the change project criteria. A total of 20 quality reports were recorded. Fourteen were clerical such as name spelling; two were patients cancelled for surgery because of a need for a cardiac work up prior to surgery involving the same two nurses from the 2009 review. The reports also recorded an EKG not being completed, the absence of a type and screen, failure of a patient to complete a bowel prep and one family uninformed about visitation. Briefly referring to quality reports of 2007, nearly 95% of a total of 21 were completed by laboratory staff and nine reports were patients exiting the unit prior to completion of all testing.

**Evaluation**

Comparing the results of 2009 and 2010, there is an increase of 20% of laboratory staff completing quality reports and a corresponding decrease of nurses completing reports. There was no difference in patient cancellations for surgery where further consultation was needed. No other clinical issues related to nursing were recorded.
**Inference**

A large percentage of quality reports are related to non-clinical issues and are reported by laboratory personnel. Because of the absence of reporting by nurses, it is not possible to determine if the quality of nursing care was improved with specific assignments. Laboratory staff is strongly encouraged to complete quality reports and are consistent in doing so. Rarely do RNs complete reports.

**Discussion**

From the data, RNs rarely complete quality reports. This could be because of time constraints or because of a lack of understanding of what incidents need to be recorded and the reasons for it. Although it wasn’t possible to compare quality of care, it was clear that RNs needed to be encouraged to complete forms. As for results from the educational presentations, there was a fundamental understanding of Evidence Based practice secondary to the sessions based on personal, verbal reports from RNs.

**Conclusions and Summary**

The number of quality reports in 2009 and 2010 were 22 and 20 respectively. Two cancellations of surgery were reported because of a need for further cardiac evaluation in both 2009 and 2010 involving the same two nurses (one a novice and one an expert. A third cancellation took place in 2009 because of an abnormally high glucose level. There was no change in recorded adverse events recorded on quality reports related to clinical issues.
Chapter VII: Implementations

Introduction

For the same time periods in 2009 and 2010 quality reports for adverse events were examined in a preanesthesia walk in clinic at a university hospital. Random nursing assignments were made in 2009 and specific nursing assignments in 2010. The specific assignments involved matching RN experience on the unit (Appendix I) with patient acuity using a classification tool (Appendix E). The implications, limitations, and recommendations of the outcomes follow.

Discussion

Aside from there being two cancellations for surgery during both time frames (2009 and 2010) because of a need for further consultation, the outcomes of the project revealed that there is inadequate reporting of adverse events in this clinic by RNs. The only consistency were two cancellations for surgery each year secondary to need for further cardiac testing. (The third in 2009 was related to a high glucose level the morning of surgery). In 2009, 50% of reports were clerical and reported by laboratory staff and in 2010, 70% were clerical and reported by the same laboratory staff. RNs rarely complete reports. Data from 2007 for the same time period showed 95% of the quality reports completed by the laboratory personnel. Very few clinical occurrences were reported in this group of quality reports which in total represents a period of nearly 3 months.
Research questions and causation often bring up multiple factors as seems to be the case in this project. The outcomes of this change project brought to light unexpected results which outline needs of the RN staff. It is important to take these findings and use them for nursing interventions and improvements that will raise the quality of care (Hoeman, 1995).

Implications

The implications or resultant affect of the findings of this change project were broad and involved national statistics and patterns. Under reporting of adverse events or incomplete documentation produces false and inadequate outcome data. False data fails to illuminate areas of needed improvement in patient care and causes inability to identify needed practice changes. When improvements aren’t made as needed, patient quality of care suffers and declines. There is also an increased risk of additional adverse events if corrections cannot be made. Failure in reporting produced increased risks for the patient related to safety and positive outcomes and also presents increased financial and potential legal liability to the health care system. Without proper documentation, nursing outcomes cannot be measured accurately. Devries estimated that $17 to $29 billions are spent on preventable adverse events yearly in the United States which is directly related to the 9.2% of those effect. Health and Human Services Department estimates that 3% to 20% of hospitalized patients experience adverse events (HHS, 2010). If the Health and Human Services estimate is considered, the financial waste yearly could be $34 to $58 billion of unnecessary, possibly preventable, expense.
Limitations of the Project

Numerous limitations were identified during the planning, implementation, and evaluation of this change project. Overall, there was minimal interest from RNs as evidenced by the lack of questions by most of the group plus several incidents of passive-aggressive behavior in a novice and an expert nurse who chose to select their own assignments. The non reporting of the RNs on clinical adverse events was a huge limitation as was the reporting of laboratory personnel mainly. There are no established, formal criteria on the unit for writing quality reports and that is a limitation which impacted this project. Reports of adverse events were found for the last three years, but none prior to that which indicates a break in record keeping or lack of continuity.

Another limitation is that RN staff were not informed of incidents which deprive them of potential areas of learning and growth. Two key reasons for a lack of reporting in RNs is lack of time and lack of knowledge of appropriate incidents to report. In speaking with the RNs individually, there was an unclear expectation and nebulous definition of what incidences need to be recorded. There is also a punitive connotation related to completing reports. It is important that RNs understand that a medical error can be a bad outcome despite the RN staff having “provided care in accordance with the standard of care” (Monson, 2006, p.16).
Recommendations for Practice, Policy, and Education

At the conclusion of analysis of the data from this change project in the PETC clinic, there was no measurable difference in the quality of nursing care in 2009 and 2010 based on quality reports. However, because of a desire to ensure optimum care for the patients, the coordinator intends to educate the staff to increase reporting and better measure outcomes based on nurse experience and patient acuity in the future. Recommendations for education and policy to change practice are listed below.

I. Educate RN staff in PETC with handouts and discussions based on:

A. Definition of quality reports

B. Importance of quality reports

C. Reason for reports

D. Examples

   a. Violence on the unit

   b. Cancellation of surgery

   c. Administration of medication

   d. Critical assessment of patient requiring transport to ER

   e. Critical assessment of patient requiring physician intervention
f. Cardiac or respiratory arrest

II. Formulate written criteria for quality report

Practice Implications: Essentials of Doctoral Education for Advanced Nursing Practice

**Essential I: Scientific Underpinnings for Practice**

For this change project, a solid scientific foundation in nursing was essential. As the project coordinator reviewed charts for specific assignments, it was necessary to have the knowledge of blood chemistries and type and screen protocols to make initial decisions about the patients' needs related to the individual's surgery, acute or chronic illnesses, and the immediate assessment. This involves biology physiology, and psychology plus the ability to assess the patient rapidly and wholeistically (Chism, 2010).

**Essential II: Organizational and Systems Leadership for Quality Improvement and Systems Thinking**

An integral part of this change project was giving direct care to patients, recognizing the qualifications and needs of the RNs, and applying systems thinking to the groups as the project was planned and implemented. In considering the outcomes, it was necessary to project the implications to institutional and national levels considering aspects of health care such as financial considerations, overall quality improvement, and patient safety as well as education needs of the RNs (Chism, 2010).
Essential III: Clinical Scholarship and Analytical methods for EBP

DNP graduates are expected to be experts in systems thinking, dissemination, and integration of new knowledge based on established research findings. It is stated in research findings that nurses with more experience provide a higher quality of care (Blegen et al, 2001). For this project, it was necessary to merge “nursing science, practice, human needs, and human caring” for the RNs as well as the patients (Chism, 2010, p.16). The coordinator successfully evaluated existing literature and practice outcomes and was able to design methodologies for change. Practice guidelines were implemented on best-practice findings and informatics and research methodology were utilized. The project required collaboration with a number of preceptors, advisors and RNs (Chism, 2010).

Essential IV: Information systems/Technology and Patient Care Technology

For the Improvement and Transformation of Health Care

DNP graduates provide use of information technology to improve health care and leadership to change practice. For this project, various types of information technology were utilized to research articles on various databases and deliver educational sessions to RNs (Chism, 2010).
Essential V: Health Care Policy for Advocacy in Health Care

As a Doctor of Nursing Practice, the coordinator is trained to recognize when change is needed in policy. She or he is an advocate for improved quality care on local and national levels and serves as a leader in that arena (Chism, 2010).

Essential VI: Interprofessional Collaboration for Improving Patient and Population Health outcomes

Included in this project was an awareness of risk reduction and safety for patients. By synthesizing the recordings of adverse events, planning a practice change, and implementing it in a preanesthesia clinic, the coordinator utilized collaborative partners to conduct this change project (Chism, 2010).

Essential VII: Clinical Prevention and Population Health for Improving the Nation’s Health

The outcomes of this change project were related to proper documentation of health care occurrences and directly relates to national safety, security, and fiscal well being. Risk reduction for hospitalized patients is mandatory. The DNP is trained and dedicated to establish programs for health improvement with collaboration of others on a local and a national scale for the global population (Chism, 2010).
VIII: Advanced Nursing Practice

While implementing this project, it was necessary to incorporate cultural differences as well as to identify and utilize therapeutic interventions based on nursing and other disciplines. The goal of improving the quality of care by implementing a change in the method of making nursing assignments required advanced critical thinking skills, rapid assessment, and evaluation of creations and implementation followed by evaluation of a practice change.

Conclusions and Summary

From May 10 to July 2, 2010, RN assignments in the PETC clinic were made by matching RN experience (Appendix I) with patient acuity (Appendix E) with application of two tools. Quality reports were reviewed for adverse events for this time period in 2009 and 2010; they were examined, counted, noted, and compared for differences, types of events, and numbers. The only consistent clinical criteria on each were cancellations for surgery because of a need for further cardiac evaluation. The majority of documentation was by laboratory staff as a result of clerical errors. The fact that RNs are failing to report adverse events is a matter of concern and could be a result of numerous factors such as a lack of understanding of the purpose, lack of knowledge of the appropriate event, and awareness of time constraints during patient care.

Limitations were present and included the most impressive: Inadequate reporting. There was also a level of resistance among RN staff which was encountered
during the assignment phase when two RNs often chose to create their own assignments.

Based on the findings of the project, there are recommendations for policy, practice and education and they are found in the future projects category.
Chapter VIII: Summary and Conclusion

Introduction

Over an approximate six week period in 2010, nurses were assigned on a unit based on their experience to patients based on a classification of acuity. Quality reports were examined for both time period for numbers and types of adverse events. No significant differences were found in quality of nursing care, but a deficiency in RNs completion of quality reports was demonstrated.

Brief Summary of Each Chapter

The method of making RN assignments remains a chief role of a professional nursing leader. Lead by ethics and legal guidelines such as the Nurse Practice Acts of each state, it is a critical component of achieving optimum quality of care for the patient. The burning question is this project was: Are patients being assigned in a preanesthesia clinic to RNs in a manner to achieve optimum level of care as evidenced by a reduction in adverse events on quality reports? By applying the PICO acronym as formulated by Melnyk and Fineout-Overholt (2005), the coordinator followed the steps of the Ace Star Model (Appendix H) for a six week period of time during which specific nursing assignments were made according to RN years of experience on the unit (Appendix I) and patient acuity (Appendix D).
Nursing literature was researched and reviewed and a number of qualitative, quatitative studies and meta-analyses were located. These were evaluated and rated as to the information contained in regard to subject, date, journal, and specific areas covered. The coordinator categorized the areas of interest to be experience of nurses, inexperience of nurses, adverse events, decision making, and novice and expert nurses. The theory of Patricia Benner (Benner, 2010) played an integral part in this project as that was the clinical ladder used in the university setting of the project and was found in many of the researched articles.

During the implementation of this project, seven RNs were specifically assigned to preanesthesia patients in the clinic by matching the RN experience with the patient acuity using two tools (Appendix I and Appendix E). Educational material was presented to the RNs (Appendix F and Appendix G); their permission was obtained to utilize the unit setting (Appendix B); IRB approval was secured from Chatham University (Appendix A).

At the conclusion of the six weeks, the coordinator reviewed, synthesized and evaluated the quality reports of adverse events for that time period in 2010 and the same time period in 2009. The overwhelming majority of events recorded were of a clerical nature and completed by laboratory personnel. Few reports were generated by RNs and referred to clinical occurrences. The only consistent clinically related outcomes or events
recorded were two surgical cancellations because of a need for further cardiac evaluation in both 2009 and 2010. The same two RNs were involved (one an expert nurse and other a novice nurse). There was a marked difference in staff completion of forms: 70% were completed by laboratory staff in 2010 and 50% in 2009. RNs did not complete reports about clinical issues. This factor presents national implications in that the occurrence of adverse events in hospitals may be under reported. If true, this would have significant implications on the accuracy of outcome data as well as financial repercussions.

Numerous limitations were encountered during the implementation phase of the project. Two of the RNs were resistant and chose to select their own patients (one proficient and one novice nurse). In speaking with RNs, the coordinator found a nebulous and conflicting understanding of examples of appropriate reports of adverse events as well as concern over time required to do so during patient care.

*Opportunities for Future Projects*

The findings of this project make clear that follow up projects would be desirable and recommended such as:

- Formulate criteria for Quality Report Completion
- Continued education of staff
- Repeat of project
Conclusions and Summary

Through this project, no change in quality of care was demonstrated based on the quality reports. An inconsistent pattern in recording adverse events was discovered and RNs are not completing the reports. Professional nursing staff need to be made aware of the importance of completing forms and given specific examples through inservices. Following that, this change project needs to be repeated.
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Appendix

Appendix A

*Chatham University IRB Approval*
Appendix B

*Letter to Staff*
Appendix C

Letter from Acting Supervisor
Appendix D

Permission to reprint from American Association of Anesthesiologists
Appendix E

*American Association of Anesthesiologists Classification Acuity System*
Appendix F

*Handout to RN Staff*
Appendix G

*Power Point Poster Presentation*
Appendix H

_Ace Star Model of Knowledge Transformation_
Appendix I

List of Nurses’ experience
Appendix J

*Quality Report Form*
Appendix K

*American Heart Association Algorithm for Non-Cardiovascular Surgery*