Increase Confidence in New Graduate Nurses using High Fidelity Simulation

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Abstract

Background: Confidence is critical for nurses to provide quality patient care. New graduate nurses (NGNs) often lack the knowledge and confidence to recognize the cues of a deteriorating patient. Critical situations may be better managed if nurses are confident and competent in identifying and intervening with a deteriorating patient. The lack of confidence has been identified as a barrier to detecting subtle changes in vital signs, leading to a deteriorating patient condition. Lack of confidence may delay intervention in providing care to prevent sentinel events. Research demonstrates that simulation increases competence and confidence in nurses and nursing students at all levels. Providing NGNs with simulation experiences to recognize a deteriorating patient condition, could improve patient outcomes and save lives. Methodology/Strategy: The overall objective was to use simulation exercises in the orientation of NGNs to increase their confidence to identify deteriorating patients and to intervene in a timely manner. The simulation occurred at the project site for NGNs. First, NGNs completed the NLN Student Satisfaction and Self-Confidence in Learning Questionnaire (SSSL). This project implemented a high-risk low-frequency simulation during the nurse orientation. Immediately after the simulation, NGNs repeated the SSSL questionnaire. Results: A Repeated-Measures t-test was performed to test the assumption that there was a significant difference between the pre-intervention and post-intervention scores. There was a statistically significant increase in the scores from pre to post-intervention $t(14) = -9.88$, $p < 0.001$. Descriptive statistics of frequencies using an antidotal tool measured six rapid response team calls (RRT) by NGNs pre-intervention, three RRT calls were made by NGNs, a 50% decrease in RRT calls. Limitations: The project design used a pre/post-test self-reported questionnaire to gather quantitative data for the DNP project. The primary constraint of self-reported questionnaires is the possibility of providing

invalid answers. Recruitment was completed employing a convenience sample targeting NGNs in the orientation process. Several limitations of a convenience sample may include the lack of representation and or generalizability to other health care facilities—the limitation of a small number of participants, N=15. A larger sample to include other nursing units may have achieved more significant results enabling greater generalizability to other healthcare populations. The project contained limited demographic data, which may have influenced using additional statistical tests for analysis. Other limitations occurred due to scheduling challenges. Conclusion and Implications: A key nursing practice implication is that simulation education provides an effective means for improving clinical competency, confidence, patient safety, and optimize patient outcomes. Simulation experiences may play a fundamental role in shaping the orientation process for nursing education and increase confidence for NGNs. Confidence can impact how nurses think, believe, and respond. The simulation experience may increase the learner's competence; thus, confidence can occur by increasing critical thinking skills and clinical judgment.

Increase Confidence in Graduate Nurses using High Fidelity Simulation

Nursing leadership in acute patient care settings has responsibility for healthcare organizations to be accountable for safe, effective patient care (Daly & Mort, 2014). For the purpose of this project, a new graduate nurse (NGN)s may be defined as a nurse with a year or less experience. There is a pleather of evidence supporting NGNs lack of confidence and experience, which may prevent NGNs from collaborating with interprofessional teams, resulting in injury or death. The ability to communicate with healthcare teams is a critical behavior for NGNs to improve quality patient care; therefore, lack of confidence and experience of NGNs to collaborate with interprofessional teams can compromise the delivery of safe patient care (Grant, 2016). Confidence may be described as how we feel about our ability to perform skills, roles, functions, and tasks (Yunsoo et al., 2018). The NGN lacks confidence and experience, which may affect patient mortality. Palatnik, (2016) reports medical errors caused over 400 preventable deaths. NGNs lack assessment skills to recognize early warning signs which contribute to patient deaths (Massey, Chaboyer, & Anderson, 2016). According to the Institute of Medicine (IOM) report To Err is Human (2000), patient safety may be described as the improvement, avoidance, and prevention of harmful outcomes or injuries from the practices of health care workers (Institute of Medicine, 2001). NGNs need confidence in making rapid decisions about patient care.

The National Council of State Boards of Nursing (NCSBN) (2013) reported that 50% of NGNs have difficulty identifying life-threatening complications that require intervention. Nursing experience and confidence are essential to intervene in a deteriorating patient's condition. Timely recognition and response to a patient's deteriorating condition can be complicated; however, patient safety relies on nurses' actions and assessments to keep patients

from harm (Massey, Chaboyer, & Anderson, 2016). Competence is associated with clinical decision making and exercising critical thinking skills to recognize signs of abnormal findings (Leonard & Kyriocos, 2015).

Simulation education may help NGNs gain experience to demonstrate confidence in clinical practice. Simulation training, even though costly, may be beneficial to healthcare administrators and a means to increase workforce competence and reduce staff turnover; therefore, organizations implementing simulation will gain a positive return on investment by reducing patient complications. Thus, simulation training encourages confidence and competent nursing staff working in acute care settings, providing safe, effective patient care (Maloney & Haines, 2016).

Background

Experiential learning is a process through which students and nurses develop knowledge, skills, and confidence from hands-on simulation exercises (Lucas, 2014). While NGNs have received theory and clinical training from a nursing program, hospital orientation programs need to include simulation for NGNs to improve NGNs knowledge, skills, competence, and confidence to provide quality patient care to reduce errors and improve patient outcomes (Mariani, Cantrell, Meakim, & Jenkinson, 2015). Experience increases confidence and contributes to nurses' knowledge, skill, and competence to provide care in the clinical setting (Fry, MacGregor, Hyland, Payne, & Chenoweth, 2015). Positive experiential learning with simulation cultivates confidence, promotes knowledge and skill development, by active engagement (Kaddoura, 2010; Sand, Elison-Bowers, Wing, & Kendrick, 2014).

Nursing research recommends supporting nursing students and NGNs before caring for patients with the use of simulation; thereby, enhancing the learning of nursing skills, clinical

reasoning, and increasing confidence (Aebersold & Tschannen, 2013). Simulation education offers an opportunity to perform clinical skills and transfer the simulation experience to clinical practice (Wunder et al., 2014). Competence influences confidence in nurses at all levels of experience (Gordon & Buckley, 2009). Simulation training has been shown to have a positive effect on learning, increased confidence with clinical skills, performance, clinical reasoning, and competency (Collins & Chen, 2015). Mariani et al. (2015) found that deteriorating patient conditions are excellent opportunities for nurses to observe during simulations, and continuing education strategies are needed to support new nurses during their first year of practice (Sexton, Stobbe, & Lessick, 2012).

Simulation is a valuable teaching method and is also used in other industries such as the military, avionics, business, law, and medicine to improve processes and outcomes (Wunder et al., 2014). Simulation supports improved critical thinking skills, competency, communication, and confidence in nurses at all levels of experience. There are significant advantages to using simulation; the literature demonstrates that simulation is effective and contributes to competent nursing care, which permits positive patient outcomes (Aebersold, 2018). Participation in simulation replicates low-frequency high-risk situations and can increase a nurses' confidence level to perform a skill while caring for a deteriorating patient (Jeffries, 2007). Due to growth and development in technology over the past decade, clinical nurse educators use simulation as a teaching strategy to prepare nurses to demonstrate clinical knowledge, competence, and judgment without harm to real patients (Munroe et al., 2016).

Problem Statement

The NCSBN reported that 50% of NGNs have difficulty recognizing life-threatening complications that require intervention (NCSBN, 2013). Specifically, for this project site, the

rapid response team (RRT) calls house-wide from medical-surgical units in 2017 were >370 and resulted in a 16% mortality rate. When reviewing data collected by the Clinical Nurse Specialist (CNS), during the same period in a Neuro-Medical unit, 75% (12 out of 16 calls) calls were made to the RRT by NGNs resulting in a 10% patient mortality (C. Fouche, personal communication, July 2019). The CNS shared her findings of the increased number of RRT calls with the project site nursing manager. On the Neuro-Medical unit, 12 out of 22 nurses are NGNs providing care to patients; therefore, the project site nursing manager verified initial nurse licensure dates of NGNs and determined that the NGNs lacked the confidence, experience, and competence needed to intervene promptly for a deteriorating patient (B. Swayze, personal communication, July 2019). The above sample was compared with RRT calls from similar units, where nurses with over a year of experience practice. The documented evidence shows that RRT calls made from these units were 20 % less (Personal communication T. Grino, July 2019).

Patients may have a sentinel event if nursing staff fail to recognize specific symptoms in a deteriorating patient's condition (Keiman, 2018). The Joint Commission (2015) reported 522 sentinel events occurred in 2014 and that eight percent of those sentinel events had root causes that included inadequate assessments, poor planning, communication failures, and human factors. The need to increase confidence in NGNs has been identified in the literature to reduce sentinel events (Driscoll, 2018). To reduce sentinel events, simulation training, in conjunction with clinical experience, may improve the NGNs confidence and clinical skills, which would enhance immediate recognition of the deteriorating patients' symptoms (Mariani et al., 2015).

Purpose Statement

The purpose of this Doctor of Nursing Practice (DNP) project is to develop, implement, and evaluate a simulation education program for NGNs on a Neuro/Medical floor. The aim is to

improve confidence and experiences of NGNs related to caring for the deteriorating patient at the project site; thus, reduce RRT calls initiated by the NGNs in a large acute care facility in Central Indiana. The overall objective will be to measure confidence using a valid tool to facilitate timely symptom identification and appropriate intervention; thereby, improving quality patient care.

Project Question

The PICOT format, an acronym, describes the five elements of a good clinical question and supports this DNP project. (P) population refers to the sample of participants, (I) denotes the intervention implemented with participants, (C) represents a comparison group or object, (O) indicates the intervention outcome (Bemker & Schreiner, 2016).

The clinical question that will be answered by this DNP project: Will NGNs employed at a large acute care facility who are exposed to low-frequency high-risk simulation experiences, increase their confidence compared to a retrospective chart review in a four to a five-week time frame in March 2020?

Project Objectives

The following objectives will be met within the appropriate timeframe of this DNP Project.

1) Design a simulation program for NGNs working at the project site to address the care of the deteriorating patient.

2) Educate nursing staff regarding the simulation program to make them aware of the benefits of simulation.

3) Increase confidence levels in NGNs at the project site using high fidelity simulation, employing The National League for Nursing (NLN) Student Satisfaction and Self-

Confidence in Learning tool. Post simulation, 80% of Nurses will indicate strongly agree or agree on each of the 13 items on the Likert scale

4) Reduce rapid response calls initiated by NGNs at the project site by 20% after completion of simulation experiences.

Literature Review

A literature review was conducted to examine and evaluate existing studies on confidence using simulation in acute clinical settings. Many studies discussed the significance of simulation in nursing education. The initial query returned studies on nursing programs using simulation to replace clinical hours due to a lack of clinical sites. A common theme emerged from the research involving the development of critical thinking and judgment in nursing students using simulation scenarios in academic curricula. However, the emphasis on nursing students' simulation experiences is not the focus of this DNP project. Through continued query attempts, a review of the literature produced positive results and included studies on the new graduate nurse, confidence, competence, intervention to a deteriorating patient condition using simulation. Multiple databases were assessed to reveal relevant studies on the topic of increasing confidence in NGNs with the implementation of simulation in hospital orientation.

Key Terms

The literature search was limited to studies published in the English language.

Inclusion criteria comprised of full-text publications from the past five years 2014-2019. Exclusion criteria were placed on publications in foreign languages and work with nurse practitioners. Keywords were queried through various online databases and included ProQuest Health CINAHL, MEDLINE, The Cochrane Library, PsycInfo, Google Scholar, Springer, and

ScienceDirect (Elsevier). These databases were used to provide a rich source of data to evaluate an increase in NGNs confidence, competence, and nursing skills after a simulation experience.

The initial search terms included nurse confidence, competence, simulation, and orientation, which retrieved 2,735 articles. A Boolean search is a search strategy allowing researchers to combine keywords such as AND, Not, OR to produce more detailed results. In this literature review, a Boolean search was utilized to narrow the results with the word novice nurse, and a new graduate nurse, which resulted in 203 articles. The words' experience and onboarding returned 91 articles. An additional word of deteriorating patient found 56 articles. Approximately 19 of those articles were discarded, as they were abstracts from medical conferences. Two articles were discarded as they were not relevant to the DNP topic. Of the 17 articles, seven articles discussed team building, communication in operating rooms, and obstetric settings (Erlinger, Bartlett, & Perez, 2019). The remaining 15 articles were more relevant to clinical simulation, increasing confidence, competence during hospital orientation of NGNs.

Review Coverage and Justification

Appraisal of all the literature, including articles not considered for this DNP project, had common themes of education for NGNs using simulation. A few articles encompassed computer-generated environments for better communication skills. The main emphasis of the 15 relevant articles was increasing nurse knowledge, skills, confidence, and competency using simulation to decrease sentinel events. Most of the articles reviewed occurred in acute care settings, including medical-surgical units, emergency departments, and intensive care units. Descriptive studies requiring additional review were quantitative and qualitative methods employing surveys.

Further investigation into the onboarding of NGNs revealed studies discussing the failure to rescue situations and building communication skills using high fidelity simulation. To obtain the most relevant literature examining NGNs confidence, competence, and experience with the use of simulation, several studies discussed NGNs are not recognizing hemodynamically unstable patients. All articles addressed positive outcomes from using simulation both in nursing students and NGNs patients. All articles addressed positive outcomes from using simulation both in nursing students and NGNs.

Review Synthesis

Historical Content

When reviewing the literature surrounding simulation, it is essential to consider the history of simulation in clinical nursing education. Simulation has a history dating as far back to Florence Nightingale (Sanko, 2017). In the early 1900s, Mrs. Chase was introduced, the first life-size mannequin with moving parts. In 1930 Indiana University introduced a full simulation laboratory. During the 1990s, simulation was recognized as an effective teaching strategy. The advancement of simulation was fast-tracked due to the IOM report to Err is Human, which reported that over 90,000 deaths annually were recognized as preventable medical errors (Sanko, 2017). Today, simulation education includes simple task trainers, role play, standardized patients, and both low and high-fidelity simulators (Sanko, 2017).

In the 1970s, efforts of leaders to collaborate and share knowledge led to the first nurse focus simulation meeting, which established the professional organization of the International Nursing Association for Clinical Simulation and Learning (INACSL) (Sanko, 2017). In 2011, was the first publication of the International Nursing Association for INACSL. In this

publication, the INACSL outlined eight standards that reflect best practices for simulation education. (Lavoie, Pepin, & Cossette, 2015; Sittner et al., 2015). Of the 15 articles reviewed, three articles discussed the debriefing process as an essential factor influencing learning when providing care for deteriorating patients (Gonzalez & Allred, 2017; Rojas, Parker, Schams, & McNeill, 2017).

NGNs are expected to respond to a deteriorating patient condition and perform competently with the skills and knowledge of experienced nurses (Purling & King, 2012). The literature demonstrates that nurses who lack knowledge, experience, and confidence to recognize subtle changes in a patient's condition, contribute to sentinel events (Dabkowsk, 2016). NGNs were found to wait to call for assistance instead of seeking action; thus, delaying intervention (Cooper et al., 2016; Dabkowsk, 2016; Gillespie, 2010; Purling & King, 2012). Nurses who are more confident and competent can intervene early and prevent sentinel events (Dabkowsk, 2016; Wunder et al., 2014).

Providing new nurses with simulation experiences to recognize and manage a deteriorating patient condition, could facilitate early intervention, improve patient outcomes, and save lives (Purling & King, 2012). The literature shows that nursing experience builds confidence and competence; hence, simulation education should be ongoing and included in the hospital orientation process (Driscoll, 2018; Tawalbeh, & Tubaishat, 2013).

What is Currently Understood

The critical element that distinguishes a competent and confident nurse is the insight to readily perceive and recognize small, physiological changes in a deteriorating patient's condition (Driscoll, 2018). Thus, clinically simulated educational experiences have the potential to

increase a nurse's confidence level as well as competency (Cooper et al., 2016). In response to the need for increased awareness that NGN lack clinical experience and confidence, simulation laboratories are well recognized in the current literature as a means to bridge the gap between clinical practice and years of experience (Cooper et al., 2016; Dowson et al., 2013; Hsu, Chang, & Hsieh, 2015; Stone, Patterson, Reid, Geis, & Auerbach, 2016; Wunder et al., 2014).

Simulation is not considered an elective in clinical nursing education, but a strategy to monitor the progression and development of nurse competency (Jones et al., 2017). Cost-effectiveness is vital to healthcare organizations; therefore, simulation educators may identify NGNs learning needs early to escape costly extended orientation programs resulting in cost-effective care (Maloney & Haines, 2016).

Current Management Issues Still Under Investigation

Research shows that approximately 17.3 % of NGNs leave their nursing position in the first year of practice, and 33.5% leave within two years of starting their first nursing job (Breau & Rhéaume, 2014). Hospital management has concerns regarding voluntary high turnover rates of NGNs, which may reflect hospital work environments (Breau & Rhéaume, 2014).

Administrators are examining ways to keep NGNs and experienced nurses. Many nurse residency and transition programs have been initiated to help with nurse retention, satisfaction, quality of care, and positive patient outcomes. However, high turnover rates can lead to decreased staffing and cause a greater risk for medical errors (Silvestre, Ulrich, Spector, & Blegen, 2017). Due to expensive training, many nurse residency programs have been shortened or eliminated. A study by Silvestre, Ulrich, Johnson, Spector, and Blegen (2017) demonstrated that the cost of filling an open nurse position is estimated at $82.000.00. The cost of nurse

attrition encompasses many factors, including advertising, recruitment, orientation, and productivity of a newly hired nurse.

Employers have concerns with NGNs educational readiness for practice. Research has found that the education of NGNs does not always prepare them for hospital specialty areas. Nursing students may not have an opportunity to experience caring for several patients with a different diagnoses; therefore, skills to manage multiple patients may not be acquired when hired into the workforce (Kavanagh & Szweda, 2017).

The need to facilitate clinical simulation is essential to healthcare organizations and nursing units to prevent sentinel events (Jones et al., 2017). Since nursing management, educators, and administrators are faced with the attrition of competent nursing staff; clinical nurse educators provide simulation experiences for NGNs for unit and hospital orientation to promote nurse retention and workforce stability (Bennett, Grimsley, Grimsley, & Rodd, 2017; Nardi, & Gyurko, 2013).

Issues That Have Not Been Addressed

In 2010 the IOM recommended hospitals to implement Nurse Residency Programs (NRP) (Pokorny, 2018). Today, only about half hospital organizations across the United States have established NRPs (Pokorny, 2018). Organizations have the autonomy to implement IOM recommendations, which leads to inconsistencies across programs, including length, curriculum topics, program expectations, and institutional support (Pokorny, 2018). National standards do not exist transitioning NGNs from nursing education to practice. The only state in the union is Kentucky, which has implemented regulations to cultivate NGNs as they enter clinical practice (Pokorny, 2018).

Controversies

Controversy exists when hiring NGNs as to whether NGNs are ready for clinical practice. Health care consumers have expectations of how healthcare workers should deliver healthcare. Since NGNs are part of the healthcare team, management may express frustration that NGNs lack nursing skills and confidence to transition into practice (Bennett, Grimsley, Grimsley, & Rodd, 2017). Hospital organizations and nursing programs have shown a difference of opinion with regards to NGNs preparedness. A large body of academic leaders, 80 %, believe graduates from nursing programs are well prepared for professional nursing (Gonzalez & Allred, 2017).

However, only 10% of hospital leaders believe that NGNs are prepared to deliver safe and effective patient care (Kavanagh & Szweda, 2017). The lack of appropriate nursing education may hinder NGNs from obtaining a nursing position in a hospital setting. To bridge the gap from nursing education to practice, organizations may recruit NGNs from select nursing programs signifying NGNs skill sets are exceptional to meet employer requirements for nursing practice (Bennett, Grimsley, Grimsley, & Rodd, 2017).

Review of Study Methods

While assessing the literature, study methodologies were evaluated for applicability to this DNP project, to increase confidence in NGNs using high fidelity simulation. Many methodologies included electronic and paper/ pencil surveys distributed to participants to assess simulation effectiveness. Web-based surveys were employed for two of the articles (Galuska, 2016; Kavanagh & Szweda, 2017). With the completion and evaluation of surveys, participants demonstrated simulation exercises provides group learning opportunities and encouraged accelerated learning to intervene with a deteriorating patient (Davis, Kimble, & Gunby, 2014).

Many of the 15 articles utilized a Likert scale. Each response on the survey was associated with a designated number; comment boxes were incorporated into the questionnaire enabling learners to give feedback regarding simulation learning (Davis, Kimble, & Gunby, 2014; Munroe, Buckley, Curtis, & Morris, 2016; Mgbekem et al., 2015).

Studies applied live and virtual simulation experiences with classroom lectures (Cooper et al., 2016; Erlinger, Bartlett, & Perez, 2019). Two of the articles utilized interviews to measure perceptions of participants (Munroe et al., 2016; Rossler et al., 2018). One article's approach was the use of audio-recorded focus groups to assess NGN deficiencies, with the potential of lowering the cost of orientation, improve patient outcomes, and address the readiness of NGN for professional practice to meet employer needs (Gonzalez & Allred, 2017).

Several studies developed qualitative and quantitative descriptive designs to gather data of NGNs (Bennett, Grimsley, Grimsley, & Rodd, 2017; Rossler et al., 2018). Davis, Kimble, and Gunby (2014) used a mixed-method design to demonstrate participants' points of view regarding the challenges of complex patients and the critical thinking skills of students. A multi-method study utilizing qualitative and quantitative techniques, recruited student registered nurse anesthetists to measure and compare the expense of web-based and face to face simulation strategies on patient safety and deterioration (Cooper et al. 2016). Kim, Hur, and Kim (2018) examined clinical competency and judgment for peer handoff using a quasi-experimental design, simulation the dependent variable, following treatment in one group, and compared results to the control group that did not receive stimulation. Most studies used convenient samples to recruit participants. Random control trials were not found in this literature review.

Significance of Evidence to Profession

The scholarly research was diverse depending on the target audience, whether intensive care, surgical, obstetrics, medical-surgical, or emergency nurses (Erlinger, Bartlett, & Perez, 2019; Gaguski et al., 2017; Kavanagh & Szweda, 2017; Mariani et al., 2015). Clinical problems associated with NGNs lack confidence and competency validate the need to implement simulation experiences to meet nursing practice needs, and expectations (Driscoll, 2018). All studies related to NGNs lack of confidence aimed to establish skills, knowledge, competency, confidence, cost-effectiveness, and improve patient outcomes.

Evidence-based studies reviewed in this literature review endorses an understanding of a variety of methodologies in which simulation education, perhaps could be the gold standard for nurse retention, and safe, effective care (Bennett, Grimsley, Grimsley, & Rodd, 2017). Healthcare organizations are experiencing high attrition rates; simulation education may offer the solution to decrease attrition rates to deliver quality patient care (Silvestre, Ulrich, Spector, & Blegen, 2017). Due to the lack of confidence in NGNs, translation of the literature is essential to clinical practice. Adopting simulation experiences to a hospital orientation program may foster the confidence, competence, and experience for NGNs to recognize a deteriorating patient and intervene promptly (Davis, Kimble, & Gunby, 2014; Mariani et al., 2015).

Theoretical Framework

Nursing is a scientific profession; therefore, practice relies on experience and proficiency (Mgbekem et al., 2015). The foundation of Benner's *Novice to Expert Theory* supports experiential learning; whereby, knowledge is created through modifications of experience; hence, knowledge results from an experience (Benner, 1984). Benner explains that experience

and knowledge gained in clinical practice helps nurses provide safe, quality care (Benner, 1984). An illustration of this theoretical framework is in the appendices (See Appendix A).

Historical Development

The Dreyfus brothers developed the skill acquisition model while studying chess players and believed that learning was based on a situation (Benner, 2011). The Dreyfus brothers found that when instruction is provided to participants, they acquire knowledge as they pass through several stages to attain skills (Benner, 1984). Benner discovered that nursing showed similarities to the *Dreyfus Model of Skill Acquisition,* in that practice, depends on experience and knowledge transpires over time (dos Santos, Neves, & Carnevale, 2016). Benner's qualitative research regarding clinical practice describes that nurses' attained knowledge through clinical experiences (dos Santos, Neves, & Carnevale, 2016).

Benner's *Novice to Expert Theory* is founded on inductive or observed outcomes as well as deductive reasoning, which was developed from her seminal work of interviews and observations (Benner, 1984). Benner (1984) developed a continuum expounding the levels of clinical expertise, identifying the competency level of the bedside nurse by performance rubrics of a novice, advanced beginner, competent, proficient, or expert (Benner, 1984). Novice and experienced nurses were observed and/or interviewed to determine and understand characteristic differences in clinical situations (Benner, 1984). Benner postulates that her documentation collection of expert nurses' perceptions, recognition abilities, meanings, characteristics, and outcomes would support nurses to improve their skills and further advance practice (Benner, 1984).

Benner's theory guides the development of skilled nursing practice through education and exposure to experience in clinical environments (Altmann, 2007). Nursing competence and expertise are acquired through formal training, which assists nurses to gain knowledge and skills to provide outstanding patient care. Formal training in nursing consists of both didactic theoretical learning and clinical immersion for experiential learning. Benner's levels of clinical competence may be identified as continuous experiential learning concluding at an expert level of competency (Altmann, 2007)**.**

Applicability of Theory to Current Practice

The performance of clinical tasks executed well can be reflected in safe and competent patient care (Delaney, Friedman, Dolansky, & Fitzpatrick, 2015). Benner's theory applies to many nursing specialties. Today, nursing practices, such as informatics and clinical practice, have attained the benefits of Benner's *Novice to Expert Theory* (Davis & Maisano, 2016).

Informatics contends that Benner's *Novice to Expert Theory* generated nurse proficiency in electronic documentation. In an acute care facility, Benner's theory was utilized to transition from a classroom pedagogy into a computer created scenario to replicate a workflow-based model; thereby, developing individualized electronic health record (EHR) education to promote confident and proficient nursing documentation (Nicklaus et al., 2015).

The nurse practitioner (NP) role demands competency and skill development. A study by Wallace and Boller (2014) implemented Benner's *Novice to Expert Theory* and found that a step by step assessment of performance using levels of competency reflects the passage from novice to expert for NP competency and successful transition to practice.

Major Tenets of the Theory

Benner's *Novice to Expert Theory* clearly identifies five levels of nursing competence, which can be connected to a nurses' confidence level (Benner, 1984). In Benner's theory, participants go through five skill levels: novice, advanced beginner, competent, proficient, and expert (Benner, 1984). Each level has well-defined attributes of a nurse's practice ability (Benner, 1984).

The propositions or assumptions of Benner includes a change from reliance on rules to the use of previous experiences, the progression from distinguishing a situation or circumstance as parts of a whole, to a more rounded perspective and a change from a disconnected observer, to an active participant (Altman,2007). These assumptions exhibit the premise that each level builds on the preceding one as ideas are developed and expanded by experience. Therefore, this assumption is relevant to this DNP project because the simulation scenarios are built upon the previous simulation.

Patricia Benner's *Novice to Expert Theory* will be examined to incorporate the five nursing skill levels to promote confidence and competency through simulation for nurses to provide excellent patient care.

Novice

Benner explains that a novice nurse is expected to perform without any experience in clinical situations and lack confidence for safe practice (Benner, 1982). Novice nurses may be considered nursing students or graduate nurses who lack experience, usually six months or less experience (Benner, 1982; Mable, 2009). Therefore, rules learned in nursing school guide a novice nurse's practice (Benner, 1984). Components of a novice nurse may comprise of orientation, soft skills, and team building (Hemingway, Osgood, & Mannion, 2018).

Advanced Beginner

Advanced beginners usually have a year or less experience in the clinical setting (Benner, 1984). Benner (1984) denotes that both novice and advanced beginners can take in little of the situation because it is new. The advanced beginner is unable to process or perceive awareness of the situation; therefore, they are unable to absorb little of adverse patient situations because those experiences are unfamiliar (Benner, 1984). Advanced beginners are more occupied remembering the rules; thus, they can apply limited experience to the situation (Benner, 1984) Advanced beginner's focus on a task and follow a to-do list (Benner, 1984). Both undergraduate and graduate nursing students are novices, although graduate students are more closely aligned with advanced beginner, which is the level of NGNs (Benner, 1984).

Competent

Nurses who have been in the same or similar job for two or three years demonstrate competence (Brenner, 1984). These nurses demonstrate efficiency, coordination, and confidence in their actions (Mable, 2009). Competence is based on problem solving and contemplation of the problem (Lièen, & Plazar, 2019). The competent nurse plans skills, which supports the organization of the clinical situation to provide quality care (Lièen, & Plazar, 2019). Efficiency and application of knowledge can be used in a new situation (Benner, 1984). Nurses at this level have a feeling of mastery as they hone in on a declining patient condition accurately, but need more time to be efficient (Larew et al., 2006).

Proficient

The proficient nurse has three to five years-experience (Mable, 2009). Nurses at this level, prioritize patient needs and have a sharp perception of the clinical situation, as well as predicting patient needs based on recent events and past experiences (Benner, 1984). Nurses, at

this point, can visualize the whole situation of the patient from baseline cues (Larew et al., 2006; Benner, 1984). Proficient nurses recognize when a normal situation does not materialize (Benner, 1984).

Expert

The expert nurse has five or more years of experience in the same nursing role (Benner, 1984; Mable, 2009). The expert nurse can be intuitive and understand the situation to identify a deteriorating patient condition accurately. Expert nurses are certain of their decisions to intervene in a deteriorating patient condition (Benner, 1984; Cork, 2014). One hallmark feature of a nurse at this level is the ability to communicate and collaborate with multidisciplinary team members, demonstrating confidence (Benner, 1984; Larew et al., 2006). Expert nurses teach and mentor new nurses (Benner, 1984).

The differentiation of staff nurse skill level may be linked to experience and is critical for patient safety, quality care, and patient outcomes (Benner, 1982). Patricia Benner's theory has been implemented in many specialties of nursing to help guide nurses to perform proficiently. Benner's *Novice to Expert* T*heory* is an excellent framework to guide a simulation project allowing nurses continual growth in nursing practice; thus, aspire to safe quality patient care and positive patient outcomes (Benner, 1982).

Application of Theory to DNP Project

Benner's *Novice to Expert Theory* applies to simulation learning in that it asserts experience develops competence (Benner,1984). Simulation is applicable in the hospital orientation process to foster confidence (Hemingway, Osgood, & Mannion, 2018). Nursing competencies and expertise develop over time and achieved through a variety of experiences (Larew et al., 2006; Marble, 2009).

Benner (1984) asserts that not only novice nurses but nurses new to a specialty are limited to the novice level experience. Simulation is a method to facilitate the experiential learning process to increase confidence and competence and to reach the proficient or expert levels (Benner, 1984). Using simulation exercises to increase confidence can be viewed as movement through the five stages of acquiring experiential knowledge (Wunder et al., 2014). Simulation offers nurses an opportunity to perform clinical skills and transfer the simulation experience to clinical practice (Wunder et al., 2014).

Confidence is a quality for nurses to develop to deliver appropriate care in a timely fashion (Abe et al., 2013). Confidence is related to the concepts of self-efficacy, clinical performance, competency, intuition, and simulation (Cork, 2014; Gobet, & Chassy, 2007; Pretz & Folse, 2011). Confidence can ultimately lead to increased patient safety, a better quality of care, and improved outcomes (Zendejas, Brydges, Wang, & Cook, 2013). A depiction of Benner's *Novice to Expert Theory* can be readily applied to the simulation experience (Marble, 2009). Evaluative structures are levels of competency attained through years of clinical experience (Benner, 1984). The pyramid of clinical experience builds on each layer and defines the five levels of skill achievement to support Benner as a theoretical framework to guide simulation-based learning, to attain experience. Developing confidence through the clinical or simulation experience is a prerequisite for expertise (Benner, 1984).

Simulation is a teaching strategy established in nursing education as a method for enhancing nursing skills. The orientation process at the project site employs high fidelity simulation as a learning strategy to prepare NGNs for the transition into effective practice. Using high fidelity simulation during the orientation process for NGNs on the Neuro/Medical unit may help facilitate NGNs knowledge and competence as well as increase confidence. This DNP

project integrates the concept of increased confidence in NGNs into Benner's *Novice to Expert Theory.*

Benner's theory may provide the theoretical framework to foster the progression of simulation experiences most beneficial in the development of crucial nursing skills (Benner, 1984). The plan for this DNP project includes simulation exercises for NGNs assigned to the Neuro/Medical unit. Benner's *Novice to Expert Theory* may expose the NGNs to practical learning situations using simulation to gain experience (Benner, 1984).

The greater the number of simulation activities in which novice nurses participate, the more significant the progress toward increased confidence related to practice and competency in the clinical setting (Mariana et al., 2015). A scenario of an expected and possible sequence of events for a simulated clinical experience will be implemented for this DNP project. The clinical scenario provides the situation for the simulation and can vary in length and complexity. The clinical scenario design includes preparation, review of the objectives, and patient information describing the situation to be managed daily.

Simulation Case Scenario

The following simulation will be utilized to illustrate the nurses' knowledge acquisition as they grow in nursing practice by using the Novice to Expert framework. The exercise begins with Martha Quincy is a 56-year-old female who is currently pain-free but has experienced back and left shoulder pain in the last 12 hours. She presented to her doctor's office this morning because she was complaining of fatigue. She reports to her physician she had left shoulder and pain between her shoulder blades that started around 0200. She thinks it lasted about 20 minutes; since it went away, she did not bother her husband as he was sleeping. However, this morning, she could hardly complete her ADLS; she was so tired and thought it might be a good idea to get

her fatigue evaluated. After the doctor assessed her, he immediately obtained a 12-lead electrocardiogram (EKG) and admitted her to the cardiac unit with orders for a possible cardiac catheterization. She smokes a pack a day since she has been a teenager but has an insignificant past medical history (PMH); however, her parents both died in their late 50's from heart attacks.

Novice

In applying Benner's (1984) theory, a novice may be defined as a beginner in the cardiac medical environment without the experience of the situation in which they are expected to perform; thus, they are limited and inflexible; which leaves the nurse lacking knowledge and skills needed for cardiac nursing care of a deteriorating patient. Novice nurses are expected to interact with the simulated patient, offering comfort, obtain and document vital signs, recognize a change in vital signs, and get help. Novice nurses may need additional guidance to provide care for deteriorating patients; therefore, verbal prompts or cues may be offered in order to practice in a safe environment (Larew et al., 2006). Participation in simulation during orientation can significantly build confidence and critical thinking skills due to the experience of simulation (Kaddoura, 2010).

Advanced Beginner

Benner (2000) states that advanced beginners have insufficient experience to recall or associate any experience with a new situation. Advanced beginners can recognize the characteristics of a deteriorating patient due to a simulated or similar experience. The advanced beginner goes beyond the rules of the novice and applies limited experience to the simulated situation. When vital signs change, by a decreasing oxygen saturation level and an increased heart rate, the advanced beginner will need to make an interpretation and intervene with a plan, by calling for the charge nurse, and apply oxygen to the patient. Experience gained from a simulated deteriorating patient condition may be linked to the competencies with the advanced beginner, but the advanced beginner will still need to work through the process of

the simulated situation (Benner, 1984). Nurses at this level may require second prompts in a simulated experience before recognizing a declining patient condition (Larew et al., 2006).

Competent

The competent nurse analyzes the problem and deliberately plans to achieve efficiency. In a simulation setting, scenarios are timed, and nurses at the competent level can demonstrate recognition of a declining patient condition, and intervene in a timely fashion (Larew et al., 2006). The competent nurse will apply oxygen, call for help, reassess the vital signs, and review orders. These nurses demonstrate coordination and confidence in their actions. Competence is based on conscious problem solving and contemplation of the problem (Brenner, 1984).

Proficient

The proficient nurse understands the whole patient condition. In a simulated situation, the proficient nurse understands the situation. The proficient nurse visualizes patient cues of changing vital signs. The proficient nurse can modify plans fluently in response to a deteriorating patient by applying oxygen, reassess the patient, call the doctor, review diagnostic tests to determine abnormalities on the EKG, check laboratory results, doctor orders, and intervene with medication. Simulation experience may provide additional experience and competence for the proficient nurse to increase confidence and advance to an expert level.

Expert

Benner's *Novice to Expert Theory* may be applied to simulation exercises to develop nursing skills for safe practice (Benner, 1984). Benner contends that nurses acquire expertise through experience. The expert nurse is intuitive, and zero's in on the cardiac problem to provide

appropriate care for the deteriorating patient. The expert nurse mentors and teaches other nurses in the simulation and clinical practice.

An excellent professional goal for NGNs is to achieve the proficient or expert stage, as described by Benner (1984). The proficient nurse perceives situations as a whole (the broad spectrum) rather than in terms of parts or specific and isolated symptoms; thus, the proficient nurse recognizes when the typical clinical situation changes (Benner 1984).

Project Design

The purpose of this quality improvement project is to integrate a simulation exercise into the orientation process for NGNs at the project site; thus, increasing confidence levels for NGNs to recognize a deteriorating patient condition. The American Academy of Colleges of Nursing (AACN) and the NLN recommend simulation to better prepare nurses for professional practice (Durham, 2015; Forneris, 2017). The literature supports the use of a pre/post-test design to assess the impact of a simulated intervention on the confidence levels of NGNs (Hecimovich, & Volet, 2014). The NLN developed the Student Satisfaction and Self Confidence in Learning (SSSCL) questionnaire in 2003 for a multi-state study (NLN, 2017). The SSSCL will be employed for the simulation intervention to measure marked responses of NGNs participating in the simulation experience. The target population of the simulation project is NGNs with a year or less experience. The independent variable for the project is the simulation experience, moderated by the clinical educator and project lead. The dependent variable is the NGNs level of confidence reported from the ordinal responses on the SSSCL questionnaire. Descriptive analysis will examine the normality of the distribution from NGNs responses on the questionnaire. A non-parametric Wilcoxon test will be used if scores are not normally distributed from the

questionnaire scores. If the analysis is normal, a repeated-measures t-test will be applied (Pallant, 2013).

The objectives for this DNP project will be met by 1) the simulation program will be supported by nursing leadership and integrated into the orientation process for NGNs working on the Neuro/Medical unit. The project will be accomplished by simulation exercises helping NGNs working on the Neuro/Medical unit to increase confidence; thus, providing them with knowledge and skills to intervene with a deteriorating patient condition. 2) A PowerPoint (PPT) presentation will introduce the simulation program and the benefits of simulation to NGNs before the simulation exercise. Participants engaging in simulation exercises will be provided with experiential learning and education, which may benefit patient care by reducing sentinel events. 3) The expectation is 80% NGNs will indicate strongly agree or agree for each of the eight items (subscale of SSSCL) questionnaire. The marked responses will indicate an increase in confidence. 4) A tracking tool will be used for easy identification of prospective chart reviews. Chart reviews may reveal a 20% reduction of RRT calls initiated by NGNs working on the Neuro/Medical unit; and, perhaps, show a decrease in sentinel events due to a simulation experience.

Population of Interest

The population of interest will comprise of NGNs attending orientation or who have been hired within the last year working on the Neuro/Medical unit at the practice site. Inclusion eligibility criteria for participants will be an active, unencumbered Indiana nursing license issued by the Indiana State Board of Nursing, hold a baccalaureate or associate degree in nursing, and have one year or less of experience. All participants must be able to read, write, and speak the English language. Each participant will maintain a current basic life support card (BLS).

Exclusionary criteria of the targeted population will encompass participants who do not speak the English language, do not hold a current BLS card, who have greater than one year of experience, and/or nurses working in other areas of the hospital.

Setting

The setting for the DNP project is a large urban 802-bed hospital, utilizing the simulation center shared by multiple hospital and university campuses. The simulation center is a 30,000 square foot building. It contains a simulated surgery suite; an emergency room; a transport room with an ambulance; five virtual hospital rooms including an obstetric room with a newborn area; an intensive care suite; a two-bed vascular flex area; a 1000 square feet of classroom space; a nurse's station; and a twelve-station computer lab. A variety of high-fidelity manikins are available, including Wireless SimMan 3G, SimMan, Mega code Kid, SimBaby, SimJunior, Mama Natalie, Noelle Birthing, VitalSim Adult, VitalSim Child, and Harvey the Cardiopulmonary Patient Simulator, and an assortment of task trainers.

Each simulation room has a control center managed by simulation technicians with nursing educators at each station. Each control center has visual and audio access to the corresponding simulation room. The simulation technicians participate as the patient voice of the simulated patient; thereby, providing immediate responses to posed questions by the nurse. Bluetooth microphones are used to communicate with the nurse portraying the family member in each scenario. Each simulation room has a corresponding debriefing room equipped with video. Permission from the CNO to implement the simulation project was verbally granted. A letter of support is displayed as an appendix (See appendix B).

Stakeholders

Project site stakeholders have shown commitment and support to this DNP project to improve quality patient care. Analysis of stakeholders is essential to determine the interest and influence within the organization (Concannon et al., 2014). The following stakeholders are critical to the DNP project and may have a positive or negative effect on completing the project. The Chief Nursing Officer (CNO) has responsibility for growth, development, and improvement of the entire organization. A content expert and clinical educator will help with the development of training materials and contribute substantial knowledge to the project. The unit manager has extensive nursing management and leadership experience to operate a nursing unit smoothly. Charge nurses and preceptors will help acclimate new nurses to the everyday responsibilities of bedside nursing.

Clear communication and rapport between the project lead and stakeholders are vital. A communication plan is essential to establish good rapport and dialogue with all stakeholders. The project lead will attend all weekly unit meetings and monthly evidence-based practice meetings. Weekly meetings will be held with the project mentor, clinical educator, and content experts. Communication regarding project updates will be communicated via email or face-to-face meetings.

Recently, during an evidence-based practice meeting, discussion with stakeholders, the CNO, content expert, clinical educators, unit manager, preceptors, and charge nurses, the simulation project was reviewed. The project lead discussed the benefits of a simulated experience promoting more significant learning opportunities; thereby, supporting NGNs first year of practice to build competence and confidence (Sexton, Stobbe, & Lessick, 2012). After the meeting, stakeholders agreed that simulation might be a tool for learning and evaluation to meet unit expectations.

Communication regarding schedules and project updates will be communicated via email and face to face meetings. Since the project site has Magnet recognition and is a teaching facility, stakeholders are receptive to change and open communication, which is vital to the success of this DNP project.

Recruitment Methods

The project lead is responsible for ensuring the security, confidentiality, and privacy of when and how data is collected and stored (Pallant, 2013). Appropriate Collaborative Institutional Training Initiative (CITI) has been completed to ensure safeguarding NGNs privacy and confidentiality.

Code numbers are a practical approach to protect the confidentiality of participant data (Pallant, 2013). The project lead, before distributing paper packets to NGNs, will assign random code numbers to each paper packet, including pre/post questionnaires. Accordingly, code numbers of each pre/post completed questionnaire will be paired together, recorded into a master roster and not shared with other individuals, except for analysis. Confidentiality will be sustained by securing all participant data in a locked cabinet.

The DNP project will be a convenience sample targeting NGNs in the orientation process or hired within the past year, working on the Neuro/Medial unit. In a closed classroom, the project lead will be responsible for the distribution and collection of informed consent from all participants. NGNs will be informed that participating in this simulation and completion of the questionnaire is voluntary. Voluntary participation will be clearly stated and defined in a recruitment letter and on the informed consent. Recruitment materials may include flyers, which will be placed in the nurses' break room. Weekly emails will be sent to each participant for one month before the project is implemented; thus, reminding NGNs of the upcoming simulation

project. NGNs will be required to sign a simulation consent to maintain the confidentiality and integrity of the simulation scenarios; thereby, maintaining NACSL standards of best practice (Sittner et al., 2015). The NGNs participating will not receive additional compensation for this project.

Tools/Instrumentation

An instrument is a means used by researchers for data collection (Timmins, 2015). Research groups acknowledge the importance of instrumentation validity and reliability to measure variables of interest in the data collection process (Li, 2016). Awareness of validity and reliability may help ensure the quality of the measurement and data collected for a DNP project. The literature demonstrates robust evidence of validity and reliability to support assessments of simulation teaching strategies after simulation exercises using the SSSCL (Jeffries, 2005; Tosterud, Petzall, Hedelin, & Hall-Lord, 2014). The SSSCL tool has shown consistent validity and reliability and is currently used for research (Erlinger, Bartlett, & Perez, 2019; NLN, 2017; Tosterud, Petzall, Hedelin, & Hall-Lord, 2014).

For this DNP project, four main instruments will be utilized. 1) the simulation program, 2) PPT presentation, 3) the NLN SSSCL, and 4) The Safety Issue Precursor Chart Review Tool. Additional required agreements will include the confidentiality/video recording waiver, to ensure confidentiality of the simulation scenarios and consent to be recorded on film.

Simulation Program.

This simulation program is designed for delivery to NGN's during their first year of employment. To allow for this, the goal is for the program to run in January, May, and August, of each year. All NGN's will be required to participate at least once during their first year of

employment. The pilot project for these simulation scenarios will be carried out during this DNP Project. Implementation of the simulation program will complement existing training offered to critical nurses at the project site. The simulation program is a tool to increase the competence and confidence of NGNs in the orientation process by providing NGNs knowledge and skills to intervene with a deteriorating patient, and possibly reduce sentinel events by 20%. A simulation program allows mistakes to be made in a safe environment, while NGNs gain valuable experience, transferring experience to clinical practice, and advance quality patient care (Wunder et al., 2014).

The simulation program will be presented to NGNs over four weeks in the spring of 2020. Scenario implementation will reflect objectives, script, scenario, and each scenario will run for approximately 15 to 20 minutes. The selection of simulations is of utmost importance for positive nurse and patient outcomes (Waxman, 2010). When selecting simulations, clinical educators should be aware of activities and encounters that correspond to the objectives of evidence-based simulation (Waxman, 2010).

The simulation program will offer education and experiential learning for NGNs on the Neuro/Medical unit. Scenarios have been chosen through collaboration with the clinical educator and project lead. During a clinical practice meeting, the CNO, educational director, clinical educator, and unit manager approved four NLN simulated scenarios to help deliver knowledge, skill, competence, and confidence for safe nursing practice to meet expectations of the nursing unit.

NGNs will engage in a variety of critical care nursing scenarios that emphasize assessment and fundamental intervention. NGNs will be introduced to four NLN scenarios, including 1) a simulated patient experiencing a myocardial infarction (MI). The activity includes

experiences in cardiovascular assessment, hemodynamic monitoring, EKG interpretation, and arrhythmia interventions, 2) a simulated patient with coronary artery disease (CAD), involves application and experience with respiratory assessments, oxygen therapy, and intubation/mechanical ventilation, 3) a simulated patient with cerebral vascular accident (CVA) will provide experiences in neurological assessment, necessary intervention for changes in the level of consciousness (LOC), intracranial pressure (ICP) monitoring, and interpretation, 4) a simulated deteriorating patient needs resuscitation in cardiac arrest. NGNs will experience the assessment of changes in LOC, advanced cardiac life support (ACLS) protocols, skills, and algorithms.

Debriefing will be conducted in a debriefing room with access to video monitoring and playback; thus, reflecting upon clinical performance for feedback, and formative evaluation (Dreifuerst, 2015). Debriefing timeframe will be two times the scenario time (Waxman, 2010). Debriefing following simulation activities allows for assessment of quality patient care, promotes critical thinking, and fosters deep learning (Dreifuerst, 2015). The existing simulation policy was revised to include specific scenarios for the simulation program (See Appendix C).

PowerPoint.

A PowerPoint (PPT) presentation is a tool and method to deliver material in an organized fashion and provide a roadmap to relevant information needed in a simulation program (Franklin, Sideras, Gubrud-Howe, & Lee, 2014). A PPT presentation, if used thoughtfully, may enhance teaching material and offer a mode of communication to develop knowledge and skills for NGNs participating in the simulation project (Franklin, Sideras, Gubrud-Howe, & Lee, 2014). An educational PPT before the initial simulation exercise will facilitate and explain the simulation program to NGNs while demonstrating the benefits of simulation. During a clinical practice

meeting, the PPT was presented, discussed, and approved to use before the simulation exercise. Stakeholders included the CNO, educational director, clinical educator, CNS, and unit manager at the project site (See Appendix D).

The Student Satisfaction and Self Confidence in Learning.

Historical development and creation of SSSCL included two additional instruments. The Simulation Design Scale, and the Educational Practices Questionnaire, all instruments were crafted as part of the 2003 NLN/Laerdal simulation research study. In 2003, a grant from the Laerdal Medical Corporation supported a three-year multi-state study conducted by the NLN to investigate how to plan, design, and implement simulation as a teaching pedagogy and evaluate learning outcomes (Jeffries, & Rizzolo, 2006). Accordingly, the NLN developed the SSSCL for the 2003 NLN/Laerdal simulation research study (Jeffries, & Rizzolo, 2006).

A recent study by Kesiser and Turkelson (2019) evaluated nurse practitioner students' clinical performance and reasoning skills in simulation, using the SSSCL and found the tool reliable to measure enhanced learning and confidence. In a randomized control trial, Ostovar et al. (2018) employed the SSSCL to examine an intravenous therapy simulation debriefing session and demonstrated improvement to psychomotor skill development, self-confidence, and satisfaction among nursing students. An instrument considered for the DNP project was the Lasater Clinical Judgment Rubric (LCJR) used by Victor (2017). The Lasater Clinical Judgment Rubric (LCJR) was used to measure nursing clinical judgment in simulation settings; however, this tool did not offer a confidence component.

The SSSCL is a 13-item instrument designed to measure student satisfaction (five items). The simulation activity and self-confidence in learning employ (eight items). The SSSCL uses a five-point Likert scale. The ordinal responses on the questionnaire are - 1-strongly disagree, 2-

disagree, 3-undecided, 4-agree, and 5-strongly agree. Nine clinical experts established content validity for the SSSCL; thus, the tool yields a Cronbach's alpha coefficient at 0.94 (Jeffries, & Rizzolo, 2006). The project will focus on the eight confidence items with the expectation of NGNs responses will agree or strongly agree (See Appendix E).

The SSSCL may be used in simulation exercises to measure how confident students feel about the skills and knowledge they practiced while caring for a simulated patient (Jeffries et al., 2011; Jeffries, & Rizzolo, 2006). The Self-Confidence in Learning subscale demonstrates a Cronbach's alpha coefficient of 0.87 (Jeffries, & Rizzolo, 2006; Tosterud, Petzall, Hedelin, & Hall-Lord, 2014). In November 2019, permission was granted via a telephone conversation from an NLN facilitator to use the SSSCL for this DNP project; however, the NLN does not require permission to use instruments for none-commercial use supporting dissertations and DNP projects (NLN, 2017).

Confidentiality Waiver.

Standards of simulation best practice are guided by simulation guidelines (Sanko, 2017). Standard II recognizes the importance of confidentiality waivers and emphasizes the significance of professional integrity concerning the sharing of scenario details and individual performances during or after a simulation experience (Sanko, 2017). A confidentiality statement regarding video recording and confidentiality of the scenario, whether actively participating or observing, will be required to maintain the professional integrity of the scenarios in the simulation program (Sittner et al., 2015) (See Appendix F).

Chart Review Tool.

The CNS at the project site developed The Safety Issue Precursor Chart Review Tool for failure to recognize/ intervene to collect data at the bedside when sentinel events take place. The

tool will be used during and post-implementation of the simulation project; thereby, tracking sentinel events. The four-item anecdotal instrument will be implemented on the Neuro-Medical unit in the spring of 2020. The tool evaluates how quickly nurses recognize and intervene with a declining patient condition. (See Appendix G). When events occur, the CNS believes it may be helpful to collect data, record events, and educate nurses on the importance of intervening early with a deteriorating patient condition. Data collected with the tool will be entered into an electronic database by the CNS and project lead for easy retrieval. Once data is recorded electronically, the paper document will be discarded in a secure Iron Mountain receptacle. When reviewing retrospective data collected from The Safety Issue Precursor Chart Review Tool, findings may show a significant decrease in the frequency of sentinel events, due to the simulation program.

Data Collection Procedures

The Safety Issue Precursor Chart Review Tool for failure to recognize/ intervene instrument is a four-item anecdotal instrument developed by the CNS and adopted at the unit level for this DNP project. The tool will be used one month before, during the four-week simulation intervention, and continue to be used four weeks after the intervention; thereby, tracking outcomes of sentinel events on the Neuro/Medical unit. The tracking tool will be utilized by unit staff to collect data at the bedside when events occur; thus, data will be entered and stored appropriately in a secure electronic database to ensure privacy, confidentiality, security, and accessibility for future retrieval. The paper tracking tool will be placed in a secure Iron Mountain container to protect against the Health Insurance Portability and Accountability Act (HIPPA) violations protecting patient confidentiality and privacy (McDonald, & Handley, 2015).

Data collection will occur with one group of NGNs before and immediately following four simulation scenarios. When participants arrive at the simulation center, attendance will be obtained electronically for timekeeping purposes; the project lead will deliver a PPT presentation to introduce the simulation program. Following the PPT presentation, the project lead will distribute a packet to each participant containing an informed consent, pre/post- test SSSCL, and a video recording/ confidentiality statement. Signing the informed consent and video/ confidentiality statement will be required to participate in the simulation. The video/confidentiality statement will be filed in the NGNs hospital orientation folder. For participants to have a good understanding of the project details, the project lead will read the informed consent to participants. The SSSCL questionnaire will be administered to all participants before and immediately following the simulation. Code numbers will be assigned and used to match the pre/post questionnaires; thus, code numbers on questionnaires may safeguard confidentiality. Participants will be informed of the precautions taken to protect the confidentiality of data and informed of the parties who may have access to the data.

The project lead will collect the completed packets after the simulation day is completed to ensure confidentiality, privacy, and storage of the data is protected. The collected packets will be secured in a locked cabinet in the office of the project lead for three to five years as per ethical guidelines (Yamanaka et al., 2016). Disposal of all data, including informed consent and surveys, will be destroyed after the appropriate time frame (Yamanaka et al., 2016).

Intervention/ Project Timeline

The timeline of this DNP project is an essential component of the project to avoid unnecessary delays and trajectory of deliverables and project success (Goedknegt, 2015). The

project will occur over four weeks in the spring of 2020. The four-week timeframe comprises project pre-implementation, implementation, data collection, analysis, and interpretation of the project results. The quality improvement project will be implemented at the beginning of DNP III. Stakeholders have granted project approval at the project site. Table 1 shows the progression of the project.

Synopsis

Organizational change is ongoing and requires a strategic plan to ensure sustainability in the delivery of safe patient care (Kotter, 2008). The projected timeline will direct the completion process of the DNP project. Discussions with the clinical educator, regarding the conduction of the simulations, encompassed the ordering and arrangement of the simulations. Discussions will include, 1) scenario selection of chosen simulations, 2) how NGNs would be oriented to the equipment before the simulation; and, 3) the debriefing process, as the NHGN's will complete the post/test assessment before debriefing. The project lead will collaborate with the clinical educator, providing an overview of the simulation program, reviewing and organizing the simulation PPT presentation, scenarios, and paperwork crucial to the implementation of the program. The clinical educator will confirm the final participant number.

Pre-Implementation

Pre-implementation is a crucial process to define the parameters of the simulation program and identify stakeholders to support the project. The project lead has identified the tasks to be completed before implementation. Pre-implementation is an excellent time to deal with any posed threats to the success of the project. (See Table 1).

Implementation.

The application and implementation of simulation emulate real-life situations, which may connect NGNs to provide confident and competent care (Walker & Stevenson, 2016). During week two, the simulation program will commence. A thirty-minute PPT presentation reviewing the simulation program; may include discussion of the benefits of simulation, including the transfer of knowledge, skills, critical thinking skills, competence, and confidence, thereby transferring simulated experience into clinical practice. Each simulation will be presented in the following format: 1) The project lead will read the scenario objectives of the specific simulation, 2) participants will be chosen to role-play the nurses, patient, family member, and auxiliary roles specific to the scenario, 3) the scenario will run for 15-20 minutes with assistance from the simulation technician, and 4) a debriefing session immediately following the scenario will take place for approximately 30-40 minutes to reflect on what went well and what could have been done better.

Data Packet Distribution.

The project lead will randomly distribute and collect coded data packets from participants. Before the simulation, participants will be asked to sign an informed consent, confidentiality waiver, and populate the SSSCL questionnaire labeled pre-assessment. Signing the informed consent and confidentiality waiver will be valid for the four scenarios. Following the completion of the required documents and the pre SSSCL questionnaire, participants will engage in the simulation scenario. After the simulation, participants will be instructed to populate the SSSCL questionnaire labeled post-assessment and return completed forms to the data packet. On concluding the simulation day, participants will place completed packets in a collection box to be retrieved by the project lead. Participants will repeat this process after completing each simulation scenario. Creating a codebook is an important step to ensure that

ethical concerns are not overlooked (Pallant, 2013). The project lead created a codebook (See Appendix H) to code and enter participant data; collected data will be analyzed using electronic software.

Collected data will be coded by a numerical system to ensure the confidentiality of all participants. A review of data will only be seen by the project lead, project mentor, and content expert. Once the project has been completed, all data will be disposed of securely.

Table 1

Project Timeline

Pre-Implementation	**Person Responsible**	**Goal Date**
Identify Project site Stakeholders Seek project site Approval of tools. **1)** Simulation Program. **2)** The Safety Issue Precursor Chart Review Tool for failure to recognize/ intervene Tool **3)** Simulation PPT **4)** The Student Satisfaction and Self Confidence in Learning Questionnaire **5)** Informed consent. **6)** Confidentiality/video waiver **7)** Select simulation rooms **8)** Start entering data from sentinel events using The Safety Issue Precursor Chart Review Tool for failure to recognize/ intervene when events occur.	Project Lead	January 2nd, 2020 February 5th, 2020
Implementation	**Person Responsible**	**Week 1 Goal Date**
Chart Audits: Retrieve data from Cerna, entered from The Safety Issue	Project Lead	March 4th, 2020

Precursor Chart Review Tool for failure to recognize/ intervene Tool Review all documents for simulation program including PPT Presentation, Simulation Program The Student Satisfaction and Self Confidence in Learning Questionnaire, Pre/Post-intervention Informed consent. Confidentiality/video recording waiver with clinical educator		March 9th, 2020
Implementation	**Person Responsible**	**Week 2** **Goal Date**
Four simulation scenarios Simulated Patients experiencing a MI, CAD, CVA, and a Cardiac Arrest.	Project Lead	March 10th-11th 2020
Post Implementation	**Person Responsible**	**Week 3/4** **Goal Date**
Analyze the data using a paired t-test and Wilcoxon Signed-Rank test. Collect pre/post-implementation data from The Safety Issue Precursor Chart Review Tool for failure to recognize/ intervene Tool Analyze data using simple descriptive statistics Provide data results to stakeholders	Project Lead/Statistician	March 18th, 2020 March 25th, 2020 April 2020

Ethics/Human Subjects Protection

The Agency for Healthcare Research and Quality (2013) contend that quality improvement projects are methods used in healthcare organizations to improve quality of care. Given the Belmont Report, the three principles outline the appropriate ethical treatment of human subjects when performing research (Zagorac, 2016). To establish a degree of ethical concern and the need for guidance by the Internal Review Board (IRB), the QI project will be reviewed for the scope of ethical significance. The simulation program is a QI initiative; therefore, the project lead will not be collecting personal information about participants during data collection, or when performing data analysis. Data will be reviewed by the project lead, project mentor, content expert, and statistician. Upon completion of the project, data will securely be disposed of in an Iron Mountain receptacle. The simulation program has no direct interaction with patients; hence, it will not require IRB approval. A quality improvement or research worksheet was completed and indicated that IRB submission was not necessary.

The benefits of the simulation project include active learning, improved critical thinking skills, cognitive thinking, competence, and confidence. Quality patient care is associated with nursing simulation experiences by transferring simulation experience to clinical practice. (Ballangrud, Hall-Lord, Persenius, & Hedelin, 2014). Participants in the project will receive their standard hourly pay rate while attending the simulation program at the project site.

There are no anticipated risks of taking part in the simulation project; however, some participants may feel uncomfortable during the simulation (Hollenbach, 2016). Thus, the simulation environment can produce stress and anxiety that nurses may experience in the hospital setting in the role of a registered nurse. Participants may stop participating in the simulation if they choose.

Plan for Analysis/Evaluation

An analysis is essential for evaluation (Pallant, 2013). Descriptive statistics describe data as a preliminary unit of measure to summarize quantitative/qualitative data (Pallant, 2013). Evaluation of this quality improvement project includes a formative, summative, and outcomes approach. Formative evaluation is an ongoing process until the implementation of the project. The QI project will be measured by the effectiveness of the simulation program to increase confidence in NGNs to intervene with a deteriorating patient condition. One-month pre-implementation, chart audits of the number of RRT calls, will determine analysis and evaluation of calls made compared to one-month post-implementation of the simulation program, measured by The Safety Issue Precursor Chart Review Tool for failure to recognize/ intervene. Using simple descriptive statistics, evaluation of the results may show a 20% decrease in RRT calls made by NGNs; thus, demonstrating simulation education is a decisive factor to decrease sentinel events.

During weeks three and four, analysis and evaluation of marked responses from the SSSLC will take place. The collected quantitative data will be analyzed by employing an IBM SSPS program. The pre/post-t-test results may establish the outcome of the overall objective to increase the confidence of NGNs participating in the simulation program. Meeting the objective to increase confidence in NGNs may indicate the simulation program provided the proposed education and training to help NGNs transfer simulated experiences to the clinical setting.

The Wilcoxon Signed-Rank Test may determine if the group of NGNs collectively, exhibit statistically significant results from pre-to post-test using the SSSCL (Pallant, 2013). The assumptions for this simulation project are to increase confidence in NGNs to decrease sentinel events for better patient outcomes. Statistical analysis may demonstrate increased confidence for NGNs to provide safe nursing care.

Significance/Implications for Nursing

Positive experiential learning with simulation cultivates nursing competence and confidence; thereby, promoting knowledge and skill development, by active engagement (Sand, Elison-Bowers, Wing, & Kendrick, 2014). Nurses who are more competent and confident can intervene early and prevent sentinel events (Dabkowsk, 2016; Walker & Stevenson, 2016; Wunder et al., 2014). The most significant result of the simulation program will be to increase the confidence of NGNs, thereby transferring learning experiences to clinical practice.

The literature demonstrates the importance of nursing competencies to prevent sentinel events; however, the cost of nurse retention may be a motive for any organization to consider implementing a simulation program; thus, a simulation may support staff stability (Bennett, Grimsley, Grimsley, & Rodd, 2017). Data may reveal the outcomes of the simulation program to align with the literature. The expenditure linked to the simulation program may be well worth the investment by the project site for better patient outcomes (Jones et al., 2017).

Providing nursing practice with a clinical simulation program allows nursing education to deliver a pedagogy of interactive learning in a safe environment, facilitating the evaluation of learning outcomes (Jeffries, & Rizzolo, 2006). Confidence can be observed in many settings and is related to professional and personal achievement (Hecimovich, Styles, & Volet, 2014). Therefore, NGNs may apply personal clinical judgment, and perhaps reduce sentinel events in the clinical setting.

Analysis of Results

This QI project's goal was to develop and implement a simulation program to

educate and improve NGNs confidence to intervene with a deteriorating patient condition and evaluate NGNs confidence using high fidelity simulation. All 15 participants returned the populated pre and post NLN SSSCL questionnaire and answered, agree, or strongly agree on the post SSSCL questionnaire (see Appendix E). The confidence level of the 15 participants was measured by comparing marked responses to the eight questions on the NLN SSSCL subscale questionnaire before and after the implementation of the simulations. The independent variable in the investigation was the simulation experience. The dependent variable was the NGNs level of confidence. The NLN SSSCL questionnaire has been tested for reliability and validity with a Cronbach's alpha score of .87 (NLN, 2017).

The Safety Issue Precursor Chart Review Tool for failure to recognize/ intervene was employed at the project site pre and post-implementation of the simulation project. Data collected from the four-item antidotal tool tracked the frequency of calls made to the RRT from NGNs when sentinel events occurred. A decrease of RRT calls made by NGNs at the project site met the objective to reduce rapid response calls initiated by NGNs by 20% . Data collected from this tool demonstrated this objective was exceeded by 50% after completion of simulation experiences.

Statistical Methods

The assumption of normality indicates that data fits a bell curve, and descriptive statistics should be performed before conducting other statistical tests (Pallant, 2013). A histogram or graph is a helpful visual technique for showing the skewness and kurtosis of a data set. Skewness can be demonstrated as remaining symmetrical on a graph. Kurtosis can be viewed as data sets that may have heavy or light tails in a normal distribution (Pallant, 2013).

The survey scores were calculated using the NLN SSSCL questionnaire associated scoring rubric for both the pre-intervention and post-intervention observations (Appendix E). The pre and post-intervention score distributions were then checked for the statistical assumption of normality using skewness and kurtosis statistics see (Table 2). Descriptive statistics were created by adding the survey items together for pre and post scores. Both pre and post scores met the assumption of normality as per the skewness and kurtosis statistics. A Repeated-Measures t-test was performed to test the assumption that there was a significant difference between the pre-intervention and post-intervention scores (Pallant, 2013). There was a statistically significant increase in the scores from pre to post-intervention $t(14) = -9.88$, $p < 0.001$ see (Table 3). A simulation program can be suggested to significantly increase the NGNs confidence level to intervene with a deteriorating patient condition. Therefore, the results from the analysis indicate a significant increase in NGNs confidence and a significant positive outcome for the simulation program.

Table 2

Descriptive Statistics

	N	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Pretotal	15	28.53	3.378	-.252	.580	-1.502	1.121
Posttotal	15	37.80	2.597	-1.018	.580	.019	1.121

Valid N (listwise)	15							

Survey items added together for pre and post scores.

Table 3

Paired Samples Test

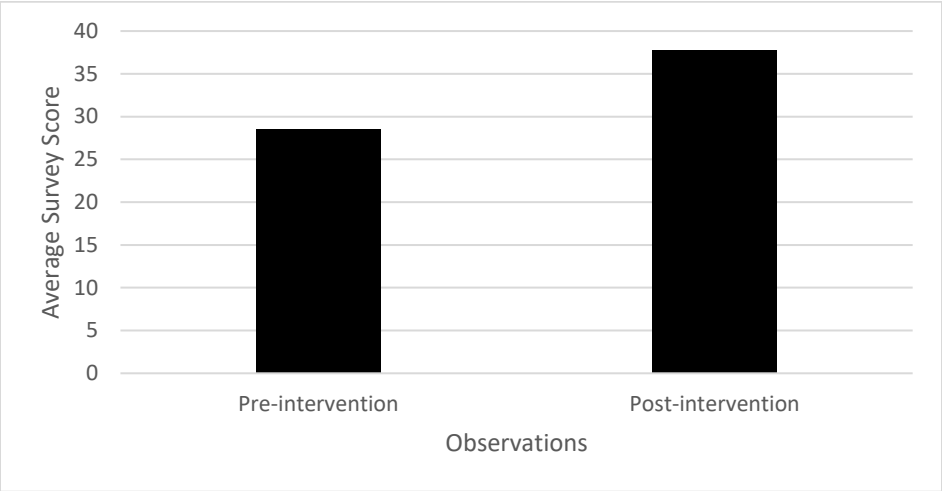
		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Pretotal - Posttotal	-9.267	3.634	.938	-11.279	-7.254	-9.875	14	.000

A statistically significant increase in the scores from pre to post, $t(14) = -9.88$, $p < 0.001$.

These analyses or outcomes answer the PICOT question upon which this DNP project is based. Will NGNs who are exposed to low-frequency high-risk simulation experiences, increase their confidence to intervene with a deteriorating patient condition? Greater than 80% of the participants marked agreed or strongly agreed on the post-intervention survey questions; thus, meeting an objective of this project see (Figure 1).

Figure 1

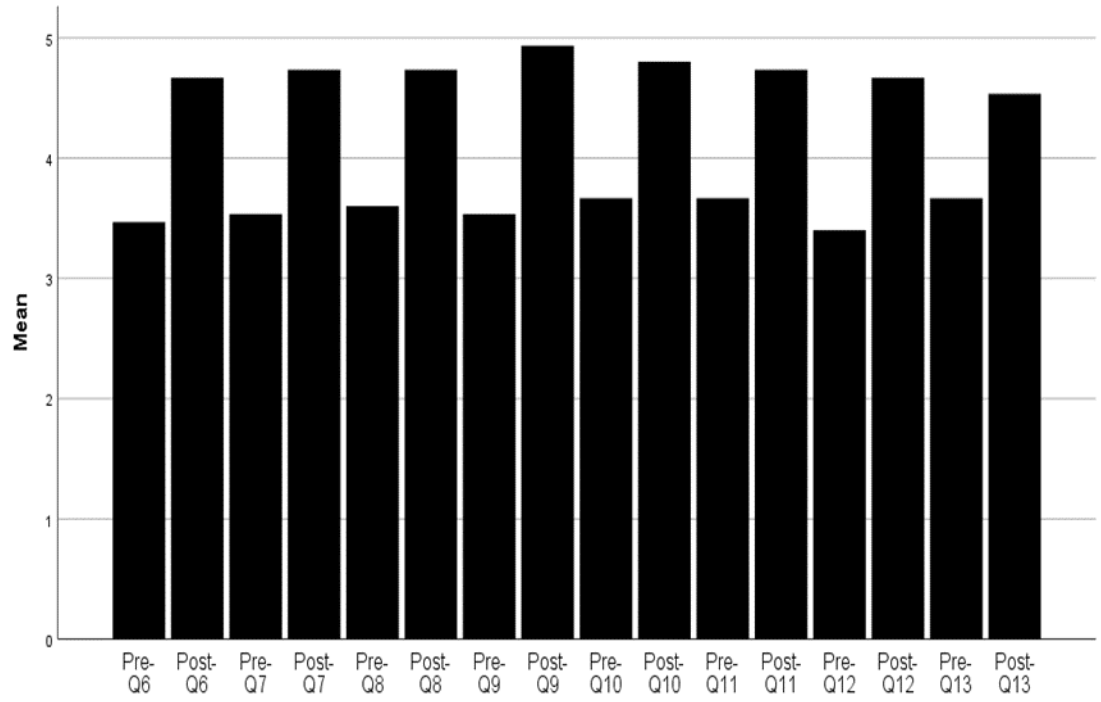
Observations of Survey Scores Pre/Post Intervention



Means and standard deviations for both observations were reported and interpreted. Figure 2 shows the means graphically. Statistical significance of increased confidence was assumed at an alpha value of 0.05. An alpha level of .05 indicated statistical significance in examining the specific research question, and all analyses were conducted using SPSS Version 26 (Armonk, NY: IBM Corp.).

Figure 2.

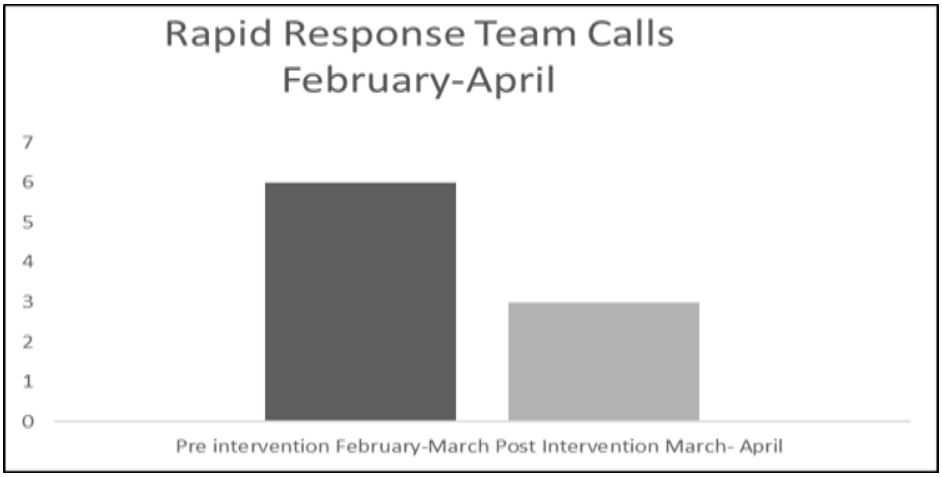
Means of Pre and Post Intervention Scores



Descriptive statistics were applied using an Exel program to examine the frequency of RRT calls during the pre-implementation period of the simulation project from February 11th, 2020, to March 11th, 2020. Data retrieved from the CERNA electronic platform from the Safety Issue Precursor Chart Review Tool demonstrated six RRT calls were made from the Neuro/Medical Unit by NGNs pre-implementation of the project. The post-intervention period for collecting data using the Safety Issue Precursor Chart Review Tool was March 11th, 2020, to April 11th, 2020. The number of RRT calls made during this period was three. Descriptive statistics demonstrate a 50% decrease in RRT calls made by NGNs on the Neuro/Medical Unit, from pre to post-intervention see (Figure 3). A project objective to reduce RRT calls by 20% was surpassed with this finding due to the implementation of the simulation program.

Figure 3

Pre/Post Intervention of RRT Calls



Current literature correlates to results found in this investigation, as demonstrated in the literature review. In a wide array of nursing settings, studies increase nurses' confidence by utilizing simulation programs implementing pre and post self-reported questionnaires (Erlinger, Bartlett, & Perez, 2019; Hecimovich, & Volet, 2014; Keiser, & Turkelson, 2019).

Discussion

The nursing milieu is changing; therefore, nursing education for orienting NGNs must change, to include more experiential learning; thus, meeting nursing practice needs and expectations (Cheney, 2011). The suggestion of this analysis implies that the simulation program significantly increased the NGNs confidence level to intervene with a deteriorating patient condition. A repeated-measures *t*-test yielded a statistically significant increase in survey scores from pre-intervention (M = 28.53, SD = 3.38) to post-intervention (M = 37.80, SD = 2.60), $t(14) = -9{,}88$, $p < 0.001$.The pre and post-intervention of frequency scores captured from the Safety Issue Precursor Chart Review Tool indicate there were six calls made by NGNs pre-implementation. Three RRT calls were made post-implementation, establishing a significant

decrease of RRT calls made by NGNs on the Neuro/Medical Unit; thereby, surpassing the project objective to decrease RRT calls by 20%.

Several studies revealed that simulation is a powerful teaching pedagogy; thereby, assisting clinical educators with the onboarding of NGNs transitioning to clinical practice (Hecimovich, Styles, & Volet, 2014; Stone, Jansson, Syrjälä, Ohtonen, & Meriläinen, et al., 2016; Patterson, Reid, Geis, et al., 2016). Experiential learning is fundamental to prepare NGNs to deliver appropriate care in a timely fashion (Abe et al., 2013). The evidence shows that a clinical simulation program did increase the confidence level of NGNs post-implementation; thus, reducing RRT calls made by NGNs by 50%.

While many studies employ self-reports to collect evidence for simulation projects, today, investigators are using random controlled trials, to endorse a higher level of evidence; thus, validating simulation as the mainstay in nursing education (Hsu, Chang, & Hsieh, 2015; Jansson, Syrjälä, Ohtonen, & Meriläinen, et al., 2016; Breen, Sinead, McCarthy, Gallagher, et al., 2019).

Significance

Competency influences confidence and simulation and can play an integral role in shaping the orientation process for nursing education (Kiernan, 2018). Confidence is an essential attribute for nurses to develop and deliver appropriate care, in a timely fashion (Abe et al., 2013) Confidence is related to the concepts of self-efficacy, clinical performance, competency, intuition, and simulation (Perry, 2011). Confidence can impact how nurses think, believe, and respond (Purling & King, 2012). NGNs participation in simulation during orientation can build substantial confidence and critical thinking skills (Kaddoura, 2010). Confidence can ultimately

lead to increased patient safety, better quality care, and improved patient outcomes (Barnsteiner et al., 2007; Olenick et al., 2010; Suter, Arndt, Arthur, Parboosingh, & Deutschlander, 2009).

Experiential learning is fundamental to prepare NGNs for professional practice (Kiernan, 2018). While classic nursing education has occurred in silos, simulation offers a pedagogy for delivering experiential learning for high-risk, low-frequency experiences for NGNs to transition to clinical practice (Breen, Sinead, McCarthy, Gallagher, et al., 2019). The success of this DNP project has prevalent implications for large-scale incorporation of a simulation program within a comprehensive Midwestern health care facility. Operationalization of simulation using Benner's *Novice to Expert Theory* may provide strategies for effective development, design, and implementation for future simulation experiences and will change the way nurses reach the proficient or expert level of nursing practice, and ultimately lead to improved patient outcomes (Benner,1984).

Limitations

Findings from this project may include limitations from the project design, data recruitment, collection methods, and data analysis. The project design used a pre/post-test self-reported questionnaire to gather quantitative data for the DNP project. The primary constraint of self-reported questionnaires is the possibility of providing invalid answers (Pinyopornpanish et al., 2020). Recruitment was completed employing a convenience sample targeting NGNs in the orientation process. Several limitations of a convenience sample may include the lack of representation and or generalizability to other health care facilities or related clinical settings (Jager, Putnick, & Bornstein, 2017). The limitation of a small number of participants, a larger sample to include other nursing units, may have achieved more significant results enabling

greater generalizability to other healthcare populations (Jager, Putnick, & Bornstein, 2017). The project contained limited demographic data, which may have influenced using additional statistical tests for analysis (Nelson, Wooditch, & Dario, 2015). Other limitations occurred due to scheduling challenges. The simulation center scheduler had overbooked the simulation rooms for the first week in March; therefore, the project was scheduled a week later. Besides, the timeline of the project was only five weeks within the boundaries of the academic course.

Dissemination Plan

Nurse educators have always been at the forefront of advocacy to educate nurses and patients (Lengetti, Kronk, Ulmer, Wilf, et al. 2018). To be effective in educating nurses, educators need to assess their attitudes toward simulation education. When nurses have buy-in to simulation education, we can then effectively advocate and provide evidence-based practice for clinical competency and patient safety (Lengetti, Kronk, Ulmer, Wilf, et al. 2018). The purpose of the DNP project is to increase the confidence of NGNs to intervene for deteriorating patient conditions and prevent sentinel events. Dissemination of this DNP project can occur through poster displays, podium presentations, and manuscripts that are vetted through a peer-reviewed process.

The dissemination plan includes a podium presentation at the project site in July 2020. The submission of an abstract for a poster presentation will be made per application guidelines to the Nurse Tim Conference for this upcoming August 2020, in Orlando, Florida. A request through Ivy Tech Community College will be made offering a podium and poster presentation at the statewide nurse faculty development day at Ivy Tech Community College, in October 2020. Lastly, the completed simulation project will be submitted to the Doctoral Project Repository at

https://www.doctorsofnursingpractice. org/doctoral-project-repository/ The table below outlines the timeline of the dissemination plan.

Date	Topic	Presentation form	Venue
June 2020	Increase Confidence in New Graduate Nurses using High Fidelity Simulation	A submission of the project will be made to the Doctoral Project Repository at: https://www.doctorsofnursingpractice.org/doctoral-project-repository/	Doctoral Project Repository
July 2020	Increase Confidence in New Graduate Nurses using High Fidelity Simulation	Podium presentation	Project Site
August 2020	Increase Confidence in New Graduate Nurses using High Fidelity Simulation	Poster presentation	Nurse Tim Conference Orlando Florida
October 2020	Increase Confidence in New Graduate Nurses using High Fidelity Simulation	Poster & Podium presentation	Ivy Tech Community College

One of the driving forces for sustaining change for this DNP project is to help NGNs increase confidence to intervene early with a deteriorating patient condition, utilizing simulation. Organizational change is ongoing as evidence-based practice changes. An organizational change requires a strategic plan and an evidence-based foundation to ensure sustainability (Kotter, 2008). The DNP project used evidence from the literature to translate evidence-based practice at the project site. Leadership is committed to reducing barriers for NGNs to intervene early with deteriorating patient conditions; thereby,reducing sentinel events, employing the pedagogy of simulation. The commitment to make this sustained change is evident with the continued use, support, and incurring the cost to utilize and practice at a state-of the art simulation center.

A specific plan to sustain change is essential and includes buy-in of evidence-based practice from project site nurse leaders, clinical educators, and management on the Neuro/Medical unit; thereby, sustaining a nursing practice change using evidence-based practice associated with simulation. A simulation committee was formed to implement policy changes specifically for simulation education on the Neuro/Medial unit. Finally the project lead, acting as a change agent represents a positive influence for change and supported the project goal to increase confidence of NGNs. Fundamental best practices of simulation reinforced the end goal of patient safety to decrease sentinel events. Based on the results of this QI project, sustaining a simulation program will increase the competence and confidence for NGNs.

Conclusion and Implications

Research supports simulation as a pedagogy to strengthen NGNs competence and confidence to transition into clinical practice before caring for patients (Collins & Chen, 2015). A key implication for nursing practice is that simulation education provides an effective means

for improving clinical competency, confidence, patient safety, and optimize patient outcomes (Aebersold, 2018). Simulation experiences may play a fundamental role in shaping the orientation process for nursing education and increase confidence for NGNs. Confidence can impact how nurses think, believe, and respond (Purling & King, 2012). The simulation experience may increase the learner's competence; thus, confidence can occur by increasing critical thinking skills and clinical judgment (Aebersold, 2018).

This DNP project represents the first step in increasing simulation experiences for NGNs on a unit level at the project site. The positive results demonstrate the benefits of supporting simulation as a means to increase confidence for NGNs transitioning into clinical practice. Simulation offers NGNs an opportunity to work and learn in low frequency, high-risk situations that are safe, seamless, and protect real patients from harm. The ultimate goal is to prepare NGNs to provide quality patient care; thereby, improving patient outcomes in the clinical setting, which was demonstrated in this DNP project.

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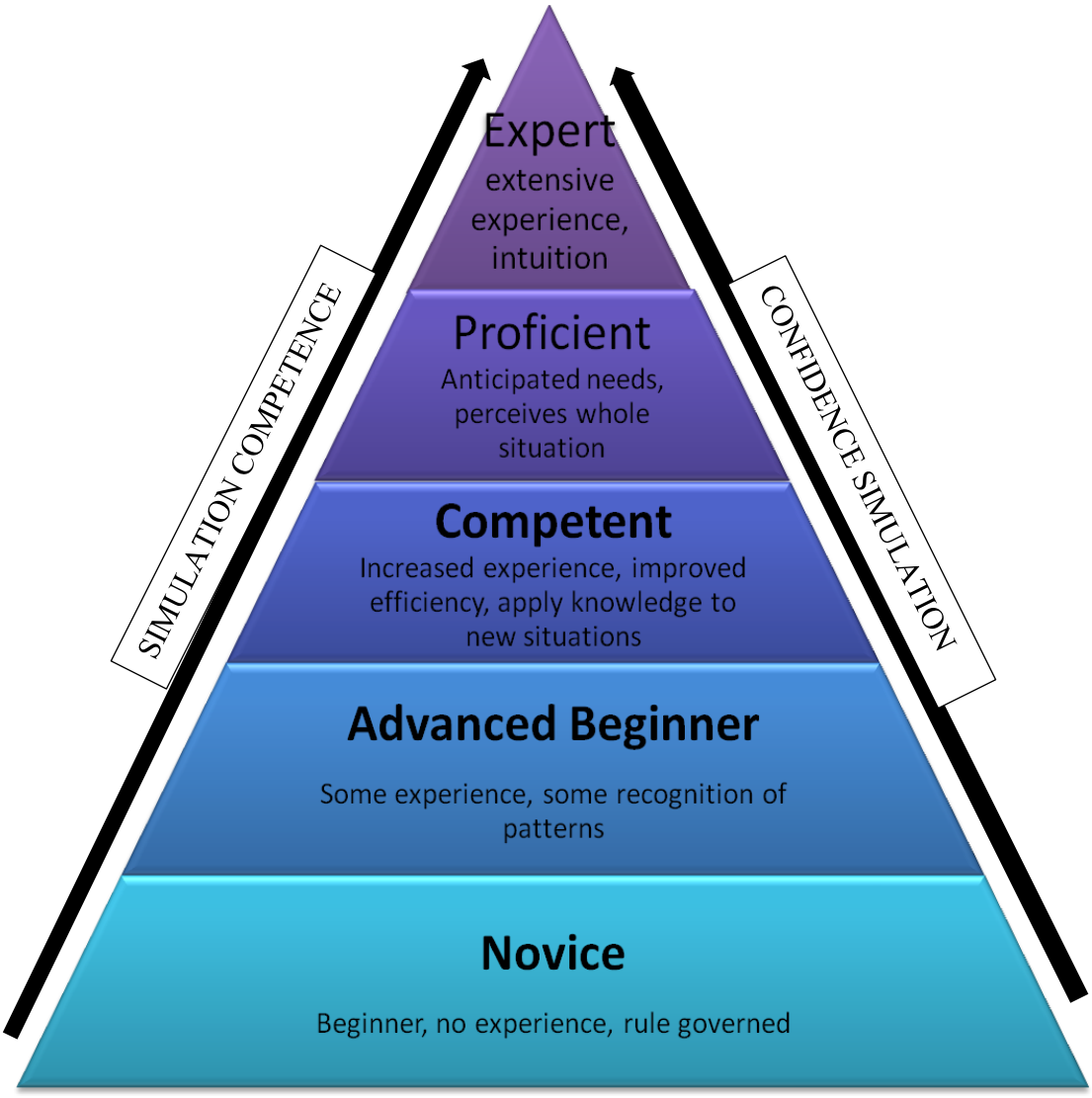
Appendix A

Benner's Novice to Expert



Schematic depiction of the integration of Benner's Novice to Expert Model assimilating confidence and competence with participation in simulation for New Graduate Nurses modified from Marble (2009).

Letter of Support **Appendix B**

HEALTH

Indiana University Health

July 17, 2017

Linda K. Chase, PhD, RN, NEA-BC
Vice President & Chief Nursing Officer
AHC Adult Hospitals
1701 N. Senate Blvd, B107, Indianapolis, IN 46202

Dear Margaret,
I approve for you to be mentored and supervised by Jennifer Dwyer MSN, RN BC CHSE FNP at the Simulation Center at Fairbanks Hall for the purpose of completing your DNP project during the spring 2020 semester. I understand that you will use a simulation exercise to increase newly hired nurses' confidence in the clinical setting. As your content expert and practice partner, Samantha will provide advice, feedback and facilitate access to resources required for the project. The director of the Simulation Center, Dr. Dylan Cooper, has given his support to the project as well.
I am aware you will be working with an existing simulation conducted with our critical care nurses for recognizing a deteriorating patient's condition. Learners will voluntary populate an informed consent and complete the NLN©2005 Student Satisfaction and Self-Confidence in Learning questionnaire before and after the simulation. You will participate in the debriefing along with assigned critical care educators to reflect on their performance in the simulation and discuss what went well and what could have been done better.

I (we) as stakeholders support you in the use of Indiana University Health's resources. I understand that you will provide a confidential summary of the results of her project upon its completion in June 2020.
Please feel free to reach out to me directly with any questions you may have.

Sincerely,

Linda K Chase PhD, RN, NEA-BC
Vice President & Chief Nursing Officer
Indiana University Health AHC Adult Hospitals
Phone: 317-962-3083

Simulation Policy **Appendix C**

Current Status: Active **Policy Stat ID:**

Origination:

Effective: 5/28/2008

Last Approved: 9/30/2018

Last Revised: 12/12/2019

Next Review: 12/12/2022

Owner: Jennifer Dwyer: Simulation Specialist Fairbanks Hall Simulation Center

Indiana University Health

I. PURPOSE:

Simulation is an essential strategy and provides a methodology for deliberately performing the skills necessary to be a competent health care worker.

II. SCOPE:

All IU Health New Graduate Nurses

III. EXCEPTIONS:

None

IV. SIMULATION DEFINITION:

Simulation training can be defined as immersion of a team member in a realistic situation Encompassing education of one or more of the following modalities: partial-task trainers, standardized patients full-body task trainers, and high-fidelity mannequins.

V. SIMULATION SCENARIOS:

Clinical scenarios are based on clear learning objectives and sound research evidence. Simulating case scenarios in the simulation laboratory involves active participation for all team members

Manikins are to be used with respect and treated as if they are live patients. The simulation lab is a learning environment. Situations simulated in the Lab are to be used as

a learning tool, and no discussion of the actions of team members should take place outside of the Lab.

VI. SELECTION AND TIMING OF CLINICAL SCENARIOS

The selection of simulations is of utmost importance for positive team member and patient outcomes. When selecting simulations, clinical educators should keep in mind the activities and encounters that correspond to the objectives of the simulation program. Scenario implementation will be consistent with the script and scenario progression timeline of 15 to 20 minutes.

Team members will be participating in a variety of critical care nursing scenarios that emphasize assessment and fundamental intervention. Team members will be introduced to NLN scenarios, including:

1. A simulated patient experiencing a myocardial infarction (MI) includes experiences in cardiovascular assessment, homodynamic monitoring, EKG interpretation, and arrhythmia interventions.
2. A simulated patient with coronary artery disease CAD) includes experiences in respiratory assessment, oxygen therapy and intubation/mechanical ventilation
3. A simulated patient with cerebral vascular accident (CVA) experiences in neurological assessment, necessary intervention for changes in the level of consciousness (LOC), and ICP monitoring and interpretation.
4. A simulated patient needs resuscitation of a cardiac arrest. Experiences in the assessment of LOC. Advanced Cardiac Life Support (ACLS) protocols, skills, and algorithms.

VII. SIMULATION LAB CONDUCT/BEHAVIOR

1. All users of the lab space must act in a manner that does not disturb the other clinical activities occurring in the simulation lab.
2. No lab user shall infringe upon the privacy, rights, privileges, health, or safety of other lab users.
3. No eating or drinking is allowed in the Lab.
4. Do not use the equipment for any purpose other than specified; anyone who fails to comply with this request will be asked to leave the center.
5. Adherence to the organization dress code
6. Do not remove the manikin from the bed unless instructed to do so.
7. Do not disconnect or move the patient simulators.
8. Remember that even though you are in a simulated environment, you are to conduct yourself as if you were in the clinical setting.
9. Infection control measures utilized in actual clinical environments are utilized in simulated care areas. Natural oils found on hands can destroy the mannequin "skin." Hands should be washed before and after all patient/mannequin contact. Gloves are utilized as they are utilized in the actual clinical setting
10. All electronics including cell phones, PDA’s, cameras, camera phones, and video recorders are prohibited during simulations.

VI. CONFIDENTIALITY:

In order to preserve the realism of the scenarios used in the Lab and to provide an equitable learning experience for each team member, all persons using the Lab will be

required to sign a confidentiality agreement (see confidentiality agreement). The scenarios are not to be discussed outside of the simulation and debriefing sessions. A confidentiality statement is to protect the value of the experience for those who will eventually take part in the clinical scenarios.

Team members are expected to uphold all requirements of the Health Insurance Portability and Accountability Act (HIPAA). Team members agree to report any violations to the clinical educator**.**

VII. Lab Equipment

If a piece of equipment is missing or broken, it is the responsibility of the team member to report it to the clinical educator or simulation technician
Below is the list of rules each team member must adhere to concerning equipment:

1. When working in the simulation lab, team members must wash their hands upon entering with soap and water.
2. Always use gloves when working with mannequins or task trainers.
3. Supplies and equipment must not be taken out of the Lab unless requested by the clinical educator or simulation coordinator.

VIII. PROCESS/PROCEDURES

Simulation-based experiences are purposefully designed to meet identified objectives and optimize the achievement of expected outcomes. Interactive patient scenarios provide an excellent platform to educate and improve team members' skills, knowledge, and critical thinking abilities. The simulation center Follows established International Nursing Association for Clinical Simulation and Learning (INACS) standards of best practice. Written scenarios will be validated by content experts and contain evidence-based. Scenarios should be reviewed annually to ensure that current practice standards are reflected.

PREBRIEFING:

Pre briefing sets the stage of the simulated clinical experience. Pre briefing provides the opportunity for an orientation to simulation setting, manikin, roles, and specifics of the scenario.

DEBRIEFING:

Debriefing allows time for reflection, which is the essential factor of the simulated clinical experience. All debriefing is conducted by clinical educators and simulation specialist that has observed the simulated clinical experience. A debriefing occurs in the debriefing room with chairs provided for team member comfort to support positive learning. The simulation scenario objectives guide the debrief. The debriefing framework used is guided reflection. Debriefing period should be twice the scenario time (Waxman, 2010).

EVALUATION:

The learner evaluates all simulated clinical experiences. This evaluation is used for quality improvement and program modification as needed. Also, formative evaluation is done for all simulated clinical experiences.

The steps in high fidelity simulation are:

1. Introducing team members and orienting them to the simulator and simulated environment
2. The scenario itself
3. The debriefing process
4. Evaluation

IX. REFERENCES/CITATIONS

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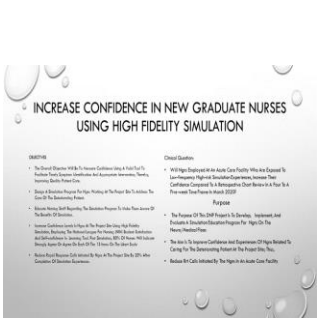
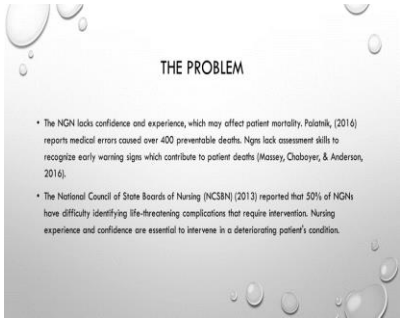
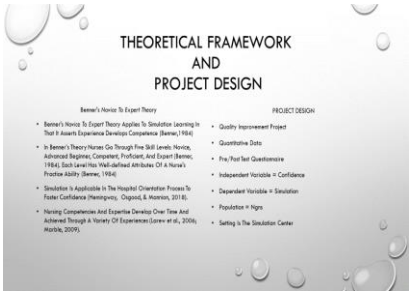
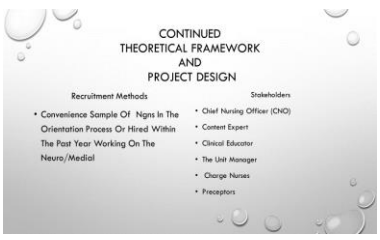
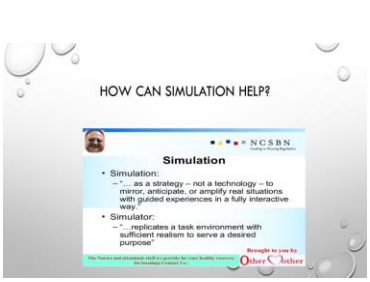
PowerPoint Staff Presentation **Appendix D**

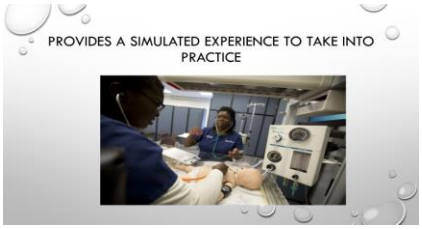


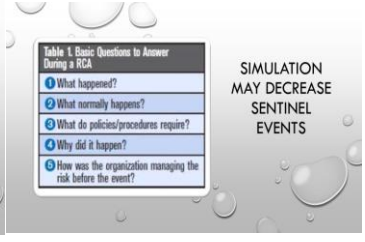












Appendix E

The Student Satisfaction and Self Confidence in Learning

1= STRONGLY DISAGREE with the statement

2= DISAGREE with the statement

3= UNDECIDED you neither agree or disagree with the statement

4= AGREE with the statement

5= STRONGLY AGREE with the statement

Satisfaction with Current Learning	**SD**	**D**	**UN**	**A**	**SA**
1. The teaching methods used in this simulation were helpful and effective.	1	2	3	4	5
2. The simulation provided me with a variety of learning materials and activities to promote my learning the medical surgical curriculum.	1	2	3	4	5
3. I enjoyed how my instructor taught the simulation.	1	2	3	4	5
4. The teaching materials used in this simulation were motivating and helped me to learn.	1	2	3	4	5
5. The way my instructor(s) taught the simulation was suitable to the way I learn.	1	2	3	4	5
Self-confidence in Learning	**SD**	**D**	**UN**	**A**	**SA**
6. I am confident that I am mastering the content of the simulation activity that my instructors presented to me	1	2	3	4	5
7. I am confident that this simulation covered critical content necessary for the mastery of medical surgical curriculum.	1	2	3	4	5
8. I am confident that I am developing the skills and obtaining the required knowledge from this simulation to perform necessary tasks in a clinical setting	1	2	3	4	5
9. My instructors used helpful resources to teach the simulation.	1	2	3	4	5
10. It is my responsibility as the student to learn what I need to know from this simulation activity	1	2	3	4	5
11. Know how to get help when I do not understand the concepts covered in the simulation.	1	2	3	4	5
12. I know how to use simulation activities to learn critical aspects of these skills	1	2	3	4	5
13. It is the instructor's responsibility to tell me what I need to learn of the simulation activity content during class time.	1	2	3	4	5

 Revised December 22, 2004

Simulation and Audio/Visual Consent **Appendix F**

Indiana University Health

As a participant in the Simulation Center operated by Indiana University Health (IUH) Simulation Education. I understand the significance of confidentiality with respect to information concerning patients, real or simulated, and other participants including, but not limited to, healthcare workers and staff. I will uphold the Health Insurance Portability and Accountability Act (HIPPA) and all other federal or state laws regarding confidentiality. Further, I agree to adhere to the stipulations stated below, and I agree to report any violations of confidentiality that I become aware of to my facilitator. All patient and nurse information is confidential regardless of format- electronic, written, overheard, or observed- and any inappropriate viewing, discussion, or disclosure of this information is a violation of professional behavior at IUH Simulation Center. The Simulation Center is a learning environment. All scenarios, regardless of outcome, should be treated in a professional manner. Situations simulated in the Simulation Center are to be used as a learning tool and everyone will be treated with respect. Health care workers will maintain confidentiality regarding the performance of others in the Simulation Center Healthcare workers must sign two (2) forms prior to participation in simulation.

O Confidentiality Agreement

O Audio/ Visual Consent

Name (Please print) Date _____ Date _____

Signature _____Date _____

I grant permission to IUH, its employees and agents, to take and use visual/ audio images of me. Visual/ audio images are any type of recording, including but not limited to photographs, digital images, drawings, renderings, voices, sounds, video recordings, audio clips, or accompanying written descriptions. IUH will not materially alter the original images. I agree that IUH owns the images and all rights related to them. The images may be used in any manner or media without notifying me, such as university-sponsored websites, publications, promotions, broadcasts, advertisements, posters, and for non-university use. I waive any right to inspect or approve the finished images or any printed or electronic matter that may be used with them, or to be compensated for them. I release IUH and its employees and agents, including any firm authorized to publish and/or distribute a finished product containing the images, from any claims, damages or liability which I may ever have in connection with the taking of use of the images or printed material used with the images. I am at least 18 years of age and competent to sign this release. I have read this release before signing, I understand its contents, meaning, and impact, and I freely accept the terms.

Name (Please print) _____ Date _____

Signature _____

Appendix G

The Safety Issue Precursor Chart Review Tool

Patient Name:

MRN:

Date Safety Issue Found:

Shift Safety Issue Found:

Safety Issue (precursor event/near miss/gap/event):

Past Medical History:

Timeline of Occurrence (examine notes from the past 8-12 hours prior to the issue)

Was there evidence of Failure to Recognize? (*examine notes for 8-12hrs prior to death or RRT for deterioration such as: change in heart rate, change in respiratory rate, change in blood pressure, change in O2 saturation, or change in LOC or neurological status that was not responded to)*
Was there evidence of Failure to Plan? *(examine notes of misdiagnosis, delayed diagnosis, treatment deficiencies, etc.)*
Was there evidence of Failure to Communicate? *(examine notes of poor communication between patient and staff, clinician to clinician, inadequate documentation, etc.)*
What's "the story?" *(discuss scenario of events with staff caring for patient 8-12hrs prior to event)*

(Hatfield, S. 2019)

Codebook

Appendix H

ID Numbe	PreQ8	PreQ9	PreQ10	PreQ11	PreQ12	PreQ13
	PostQ8	PostQ9	PostQ10	PostQ11	PostQ12	PostQ13
ID Numbe	PreQ8	PreQ9	PreQ10	PreQ11	PreQ12	PreQ13
	PostQ8	PostQ9	PostQ10	PostQ11	PostQ12	PostQ13