

2019

## Novice Nurse Respiratory Educational Component's Impact on Confidence and Knowledge

Peggy Lynn Cline  
*Walden University*

Follow this and additional works at: <https://scholarworks.waldenu.edu/dissertations>

 Part of the [Education Commons](#), and the [Nursing Commons](#)

---

This Dissertation is brought to you for free and open access by the Walden Dissertations and Doctoral Studies Collection at ScholarWorks. It has been accepted for inclusion in Walden Dissertations and Doctoral Studies by an authorized administrator of ScholarWorks. For more information, please contact [ScholarWorks@waldenu.edu](mailto:ScholarWorks@waldenu.edu).

# Walden University

College of Health Sciences

This is to certify that the doctoral study by

Peggy Cline

has been found to be complete and satisfactory in all respects,  
and that any and all revisions required by  
the review committee have been made.

## Review Committee

Dr. Melanie Braswell, Committee Chairperson, Nursing Faculty

Dr. Robert McWhirt, Committee Member, Nursing Faculty

Dr. Geri Schmotzer, University Reviewer, Nursing Faculty

Chief Academic Officer and Provost

Sue Subocz, Ph.D.

Walden University

2019

Abstract

Novice Nurse Respiratory Educational Component's Impact on Confidence and

Knowledge

by

Peggy Cline

MSN, University of Nebraska Medical Center, 2007

BSN, University of Nebraska Medical Center, 1993

Project Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Nursing Practice

Walden University

November 2019

## Abstract

The hospital-based novice nurse is presented daily with complex patients with multiple coexisting morbidities, which demands increasing responsibility for evidence-based clinical decision-making to prevent adverse health outcomes and associated high health costs. Knowledge and confidence of novice nurses in a medical-surgical unit in the assessment and clinic management of the respiratory system was identified as a gap during onboarding of new nurses. The purpose of this doctoral staff education project was to determine whether a respiratory educational component added to a medical-surgical novice nurse's orientation would impact the respiratory confidence and knowledge of respiratory assessment and clinical management. Benner's nursing theory of novice to expert and Ericsson's theory of deliberate practice were the 2 theories for the project. To assess effectiveness, a 10-item survey was administered to nurses (N = 10) during the first week of orientation and repeated following the educational intervention. Analysis from SPSS 22.0 showed statistically significant improvement differences in confidence and knowledge on all items following the posttest ( $p < .05$ ), except for confidence levels with nasal cannula/mask use ( $p = .151$ ). The strongest item-correlation was between knowledge management of respiratory deterioration and knowledge of the disease effects on respiratory assessments. Basic respiratory education added to the orientation during onboarding has the potential to improve knowledge and confidence acquisition, clinical decision-making in the clinical assessment and clinical management of respiratory issues. Positive social change in the health of the community and this educational intervention will empower the novice nurses with an additional layer of respiratory education.

Novice Nurse Respiratory Educational Component's Impact on Confidence and

Knowledge

by

Peggy Cline

MSN, University of Nebraska Medical Center, 2007

BSN, University of Nebraska Medical Center, 1993

Project Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Nursing Practice

Walden University

November 2019

## Dedication

This work is dedicated to my family and friends who believed in me and never let me stop believing in myself. I dedicate this work to the novice nurses of today who will be the leaders of the future. I pray that the steps we lay now will be the stepping stones for the health of tomorrow.

## Table of Contents

List of Tables .....	iii
Section 1: Nature of the Project .....	1
Introduction.....	1
Problem Statement .....	2
Purpose Statement.....	4
Nature of the Doctoral Project .....	5
Significance.....	6
Summary.....	8
Section 2: Background and Context .....	9
Introduction.....	9
Concepts, Models, and Theories.....	9
Relevance to Nursing Practice .....	11
Local Background and Context .....	14
Role of the DNP Student.....	15
Role of the Project Team .....	16
Summary.....	17
Section 3: Collection and Analysis of Evidence.....	18
Introduction.....	18
Practice-Focused Question.....	18
Sources of Evidence.....	20
Evidence Generated for the Doctoral Project .....	21

Analysis and Synthesis .....	23
Summary .....	24
Section 4: Findings and Recommendations .....	25
Introduction.....	25
Findings and Implications.....	26
Recommendations.....	35
Contributions of the Doctoral Project Team.....	37
Strengths and Limitations of the Project.....	38
Section 5: Dissemination Plan .....	40
Dissemination Plan .....	40
Analysis of Self.....	41
Summary.....	42
References.....	44
Appendix: Novice Nurse Respiratory Survey.....	47



## List of Tables

Table 1. Group Statistics.....	29
Table 2. Independent Samples Test .....	30
Table 3. Correlations.....	32

## Section 1: Nature of the Project

### **Introduction**

The hospital-based novice nurse is presented daily with increasing complex patients with increased comorbidities, which results in increasing responsibility for clinical decision-making (Gillespie & Paterson, 2009). Benner (2001) described this novice nurse as one in the first level of proficiency with no experience in the situations in which they are expected to perform. The role transition to staff nurse is associated with feelings of confusion, uncertainty, and stress (Hoeve, Kunnen, Brouwer, & Roodbol, 2018). In the real world of medicine, the novice nurse is expected to know the complete clinical picture and to be able to critically think quickly and efficiently to manage the patient load. The nurse in the hospital environment is the catalyst of care and the coordinator of the healthcare team. The novice nurse must be equipped to best utilize the entire team to their maximum efficiency of the care delivery model.

The focus of staff educational intervention is equipping the novice nurse with confidence and knowledge about respiratory deterioration by providing an additional respiratory therapy educational component to the novice nurse's orientation. Walden's model to promote positive change through effective development of future generations is in complete alignment with the work of this staff education project.

The respiratory system is foundational to how all the body's systems work and is a critical component in both medication management as well as disease management (Duff, Gardiner, & Barnes, 2007). Specifically, the initial benefactor of this education will be novice nurses as they learn a new and comprehensive way to assess the

respiratory status of the patients. Secondary benefactors will be the patients, other nurses, and the organization because quality care will be improved. Changes in respiratory status are often the first signs of an underlying pathophysiological change and if the novice nurse can be equipped to not only identify but treat, outcomes will be improved.

### **Problem Statement**

The care delivery model of primary nursing is being forced to change back to the team nursing model due to the increasing nursing shortage. The registered nurse, according to the Institute of Medicine (IOM) 2010 recommendations, is asked to work to the highest level of their license and lead the bedside clinical healthcare team (Fitzpatrick, 2010). To meet this need, the IOM has recommended a transition to practice program. This program is designed to decrease turnover, decrease costs, and stabilize the nursing workforce.

Literature has repeatedly revealed the problem that transition to practice from the student role to the workplace role is associated with reality shock and a gap in readiness. Rush, Adamack, Gordon, Lilly, and Janke's (2013) goal was to "identify best practices of formal new graduate nurse transition programs" (p. 345). This systematic review addressed various outcomes (competency/critical thinking and job satisfaction) and program features, including length of orientation, specific educational sessions for new graduates, and types of support provided. They concluded that best practice standards could not be drawn because few studies had the "degree of control necessary to rule out competing explanations" (Rush et al., 2013, p. 353). A study that did create a degree of

rigor and control was done by Read and Laschinger (2017) in which they focused on the differences of transition to practice based upon the nursing education received (accelerated or traditional nursing programs). Results of this study revealed that there was not a significant degree of difference in most areas of transition dependent upon education (Read & Laschinger, 2017). Read and Laschinger did validate the need to create strong transition to practice programs to empower these nurses for practice.

Phillips, Kenny, and Esterman (2017) also did a four-stage mixed method study focusing on new graduates' transition to practice. They discussed in depth the relationship between the novice nurse and their resource person (Phillips et al., 2017). Another systematic review was completed by Innes and Calleja (2018) that focused on a narrower area of focus regarding the on-boarding of novice nurses in the critical care setting. Innes and Calleja validated the need for a standardized transition to practice program, preceptor needs, workplace culture, socialization, and knowledge/skill acquisition. Duff et al. (2007) reported that nurses lacked the confidence regarding respiratory assessments and had conflicting responses to the interventions that correlated with the assessments. Massey and Meredith (2011) identified respiratory deterioration as one of the most sensitive indicators of an impending major adverse event and nurses as the key to detect early signs of physiological respiratory deterioration and intervene appropriately.

In addition to the literature, nursing leadership at the large Midwest community hospital has identified trends in respiratory rapid response team calls. During nursing rounds, experienced nurses brought to the medical/surgical nursing director's attention

that novice nurses were not always able to correctly identify appropriate respiratory assessments or interventions. The local relevance was further exemplified when senior student nurses were questioned about readiness for transition to practice, and they identified respiratory competency as an educational gap. After the review of the literature and feedback from the organization's administration, the problem with the onboarding of novice nurses and their need for developing critical thinking and clinical judgment for acute care practice represents a gap in practice at the site. For this project, I addressed the confidence and knowledge regarding respiratory assessments and interventions with an educational program designed for novice nurses and included respiratory therapy for an interdisciplinary approach.

### **Purpose Statement**

Senior student nurses in this Midwestern community were questioned about knowledge of respiratory assessments and interventions. These students reported that respiratory treatments and assessments are discussed in a fragmented fashion in nursing school as part of a pharmacology class, pathophysiology class, or as disease processes are learned. This method is designed to give a comprehensive overview of the disease process or treatment plan, but it fails to instill confidence in the novice nurse regarding respiratory assessment and treatment options. When the senior student nurses were questioned about areas of confidence, there was a routinely reported gap from novice nurses regarding respiratory assessments and treatment plans. The practice focused question for this project was as follows: How will an educational program focused on respiratory therapy received during orientation impact the novice nurses' confidence and

knowledge level regarding respiratory assessments and treatments? This project provides the first 10 medical/surgical novice nurses with a 2-hour respiratory educational session focused on basic respiratory assessments and treatment plans. This educational opportunity includes both hands on educational opportunities as well as classroom style learning.

### **Nature of the Doctoral Project**

In this Midwestern community hospital, standard orientation on the medical surgical floor begins with 1 day of general hospital orientation, 2 days of hospital nursing orientation, and 1 day of hands on clinical competency skills. Following this week, the nurse is transferred to the unit to begin the unit-based orientation program for the next 6 to 8 weeks. For the purposes of this study, orientation would stay the same except for the addition of a 2-hour respiratory assessment and intervention class taught by me and the respiratory therapist supervisor. Inclusion criteria for this project were registered nurses (either associates degree or bachelor's degree) who have graduated from nursing school within the last 6 months and this was their first nursing employment. I capped entries into the program at the first 10 nurses to begin orientation in July- September 2019 on the medical surgical unit. Initial respiratory assessment and intervention knowledge and confidence were assessed the initial orientation week during the clinical competency day by completion of a de-identified survey consisting of 10 questions. A follow-up survey with identical 10 questions was completed following the educational intervention.

By using and comparing the scores obtained from the replicated survey, I assessed the impact of the respiratory educational component on confidence and knowledge at the

completion of the novice nurse orientation program. My goal is that a focused educational intervention during the orientation process will improve clinical knowledge and confidence in the ability to assess and treat respiratory conditions.

### **Significance**

Numerous stakeholders could be impacted by this educational project. The biggest benefactor is the patient because if nurses are able to correctly diagnose and treat respiratory deterioration signs and symptoms, then patient quality outcomes can be improved (Duff et al., 2007). The quality outcomes might be a decrease in respiratory therapy rapid response team calls (or emergency calls for respiratory deterioration). The impact of this early intervention cannot be quantitatively measured but could have an impact on the long-term health of the patient because complications of delayed treatment were not present.

A team of stakeholders to be impacted is the nursing team. The novice nurse is a key benefactor in that they can provide the highest quality of care because of their new knowledge. This new knowledge can result in more timely care in diagnosis and treatment as well as an increased confidence level on the nurses' part. Because of the timely diagnosis and treatment, the nursing team will have a decreased burden in monitoring the novice nurses' patients for signs of deterioration.

Respiratory therapists are key stakeholders in this project as they invest their resources to train and equip these nurses. The return on investment is that they will have a greater collaborative relationship with the nursing staff because of the increased

confidence. Nursing should be able to provide a more comprehensive assessment, thus calling respiratory for the appropriate treatments in a timelier manner.

The most comprehensive stakeholder is the Midwestern community hospital in which these nurses work. Massey and Meredith (2011) identified respiratory deterioration as one of the most sensitive indicators of an impending major adverse event and nurses as the key to detect early signs of physiological respiratory deterioration and intervene appropriately. Confident nurses provide excellent care that leads to greater quality outcomes, including patient satisfaction, nurse satisfaction, and patient quality data. Confident nurses also tend to provide more efficient care, which can lead to cost savings for the unit. Fero, Witsberger, Wesmiller, Zullo, and Hoffman (2009) discussed how nurse competencies are a vital factor in assuring patient safety, and this too leads to a greater community wellness.

Revision of the nursing orientation model to include an interdisciplinary approach would change the way nursing orientation is structured across the hospital. Because this Midwestern community hospital is part of a much larger organizational structure, this change could impact nursing orientation across the multihospital system. Positive outcomes could lead to other disciplines being included in the nurses' orientation schedule with further increased competency and confidence. There is also a possibility that other disciplines could include time with nurses to modify their orientation. This reciprocal orientation pattern could remove barriers between disciplines and thus increase the sense of teamwork across disciplines.



Walden's model to promote positive change through effective development of the future generations is in complete alignment with the work of this staff education project. Empowering the novice nurses with an additional layer of respiratory education can allow them to more critically think in all disease modalities and treatments. The respiratory system is foundational to how all the body's systems work and is a critical component in both medication management as well as disease management. Specifically, the initial benefactor of this education is novice nurses as they learn a new and comprehensive way to assess the respiratory status of the patients. Secondary benefactors are the patients, other nurses, and the organization because quality care will be improved. Changes in respiratory status are often the first signs of an underlying pathophysiological change, and if the novice nurse can be equipped to not only identify but treat, outcomes will be improved.

### **Summary**

Respiratory assessment and treatment are foundational to the patient's wellbeing. Nurses must be prepared to assess and treat respiratory deterioration. That preparation comes with experience and education. Deliberate practice and education by clinical experts can equip the novice nurse to move from the beginner to a more confident competent nurse. In this project, I assess the effectiveness of such a program.

## Section 2: Background and Context

### **Introduction**

Empowering today's nurses to care for the needs of tomorrow's patients starts with a deliberate approach to education, specifically surrounding the respiratory orientation of the medical/surgical novice nurse. Novice nurses are not adequately equipped to assess and intervene with episodes of respiratory deterioration (Duff et al., 2007). The practice-focused question for this project was as follows: How will an educational program focused on respiratory therapy received during orientation impact the novice nurses' confidence and knowledge level regarding respiratory assessments and treatments? This section addresses the concepts and theories surrounding the creation of this project, how it is relevant to nursing practice, the local background and context as well as the role of the project team.

### **Concepts, Models, and Theories**

Deliberate practice began as a concept in the medical student community and is defined as using simulation experiences for the purpose of skills training (Chee, 2014). Chee (2014) defined deliberate practice in the context of the Ericsson theory as “a method individuals utilize to achieve expertise in any domain” (p. 249). Ericsson, Krampe, and Tesch-Romer (1993) discussed the three phases of development toward adult expertise as Phase 1: “introduction to activities in the domain and ends with the start of instruction and deliberate practice; Phase 2: extended period of preparation and ends with the commitment to pursue activities in the domain on a full time basis; Phase 3: full time commitment to improving performance” (p. 76). Chee also described how

deliberate practice could be used in a nursing simulation modality and was designed to include the following subcomponents: “Given a model case; information feedback from educational sources; highly motivated learners with good concentration; well-defined learning objectives/tasks at an appropriate level of difficulty; focused, repetitive practice/monitoring, error correction; and rigorous, reliable measurements” (p. 249). Chee discussed that if this practice is used to its fullest potential, it creates a system mastery and decreases the underlying anxiety when performing the task.

Ericsson’s theory of deliberate practice is socially significant because it can cross numerous disciplines and occupations for those pursuing excellence (Ericsson, Krampe, & Tesch-Romer, 1993). This theory has been used in everything from musical prodigies to sports to medical school (Ericsson et al, 1993). Theoretical significance in medicine is limited with deliberate practice because its focus is on tasks. Nursing today does require a proficiency in tasks, but there also needs to be an underlying critical thinking foundation to properly provide holistic care. Semantic clarity is achieved as definitions are clearly stated. Structural consistency is found as it is reasonable to believe that as people deliberately practice something repeatedly with focus that they will achieve excellence. Parsimony is also achieved as this theory is very simple in its methodology. Test ability is subjective and dependent upon the environment one is performing in. For example, performance in one environment may be viewed as excellent (Little League), but mediocre in another (World Series).

Benner’s theory of novice to expert was at the core of this project. In this theory, Benner (2001) described the stages a novice nurse progresses through to become an

expert clinician. In the initial phase of novice, the individual does not have any prior experience and is reliant upon someone to teach them. They progress through the stages, with the next step being the advanced beginner. This phase is the bridge between the connection of foundational knowledge and practical application. The respiratory educational program is one in which an expert can guide their colleague through the phases until they have reached the expert phase. Benner reported that this phase often takes 5 or more years to achieve the ability to take a systematic analysis and incorporate an intuitive capability into daily practice. Buffum and Brandon (2009) reported that the novice nurse “needs to exert a tremendous amount of mental and emotional energy in order to achieve skill acquisition, demonstrate competency, and provide self-care” (p. 360). A deliberate respiratory educational intervention would provide the venue for skill acquisition and demonstrated competency.

For the purposes of this study, a novice nurse is defined as a registered nurse with either a bachelor’s degree in nursing or an associate degree in nursing who has just completed nursing licensing exams and is beginning their first nursing job. The educator is defined as either the Doctoral of Nursing Practice (DNP) student or the respiratory therapist who is facilitating the education.

### **Relevance to Nursing Practice**

The hospital-based novice nurse is presented daily with increasing complex patients with increased comorbidities, which results in increasing responsibility for clinical decision-making (Gillespie & Paterson, 2009). Benner (2001) described this novice nurse as one in the first level of proficiency with no experience in the situations in

which they are expected to perform. In the real world of medicine, they are expected to be able to critically think quickly and efficiently to manage their patient load. The nurse in this environment is the catalyst of care and is the coordinator of the rest of the team. Novice nurses must be equipped to best use the entire team to their maximum efficiency of this care delivery model.

Hoeve et al. (2018) completed a longitudinal study regarding experiences of the novice nurses related to clinical practice transition. They found this onboarding/orientation experience contributed to the novice nurse's identity and affected aspects of their personal and professional life (Hoeve et al., 2018). Two themes emerged from this study surrounding competence, including displaying confidence/perception of their own confidence and organizational context, which was defined as the complexity of patient care and cognitive expectations (Hoeve et al., 2018). They found 56% of the study participants did not feel equipped to address the complexity of care of their patient population, and 72% had feelings of falling short and lacking the required competencies (Hoeve et al., 2018).

Lasater, Nielsen, Stock, and Ostrogorsky (2015) evaluated the clinical judgment and readiness to practice of newly hired nurses. They found a statistically significant difference in the novice nurse noticing, interpreting, and responding to alterations in patient's status changes (Lasater et al., 2015). They also found that higher levels of clinical judgment scores were linked with simulated practical experiences (Lasater et al., 2015). They did not find a statistically significant difference between the educational

preparation of these novice nurses, which validates the need to create situational experiences that can grow and foster clinical judgment.

Fero et al. (2009) assessed the novice clinical nurses by showing videotaped vignettes depicting changes in patient status. This intervention scored participants on the ability to recognize changes in patient condition, begin appropriate interventions, anticipate physician orders, and prioritize care. They found that 97% of novice nurses could not initiate independent nursing interventions based upon patient scenario, and 67% could not differentiate urgency of different actions (Fero et al., 2009). Fero et al. did recommend creating programs to support critical thinking structure and processes. Duff et al. (2007) reported that nurses lacked the confidence regarding respiratory assessments and had conflicting responses to the interventions that correlated with the assessments. Massey and Meredith (2011) identified respiratory deterioration as one of the most sensitive indicators of an impending major adverse event and nurses as the key to detect early signs of physiological respiratory deterioration and intervene appropriately.

Recommendations to improve the confidence and knowledge level are not consistent across the literature except to say that deliberate education should be conducted. Boyer (2008) looked at a nurse internship model that supports the transition to practice from the school to the hospital to support the critical thinking development of student nurses. Shermont, Pignataro, Moonan, Memmolo, and Murphy (2019) addressed the issue of clinical competency by creating a formalized transitional mentor and educational program pilot. This program relied upon the mentor to provide individualized education “just in time” to the nurse that they were mentoring. This was a

focused educational piece, but it did rely upon the novice nurse to identify their own educational gap and request information.

In the Midwestern community hospital of study, there is currently a preceptor program, nurse internship and a nurse residency program to support the novice nurses' transition to the bedside, but there is still a need to innovatively think about how novice nurses can be supported in their transition. Researchers have not shown a focused education by an interdisciplinary team on a specific assessment element and its efficacy. My goal is that the clinical experts (respiratory therapists) and I can provide an additional educational avenue to increase nurse confidence and knowledge level surrounding respiratory assessments and interventions.

### **Local Background and Context**

The facility in which this intervention is being performed is a 260-bed community hospital in the Midwest that is part of an urban community. This facility is a four-time designated Magnet hospital and is accustomed to quality improvement/educational projects. The community has a diverse population base and is home to the state university and numerous other industries. There are only two acute care hospitals in town but many surgical outpatient hospitals. This hospital is the regional burn and wound care center and has specialties in maternal-child care. I carried out this doctoral project on a 42-bed general medical-surgical unit. This medical-surgical unit patient population included oncology, orthopedics, postoperative care patients, and medical cases. Currently there are about 12 travelers (outside agency nurses) staffed on this unit. The novice new graduate nurses are expected to replace the travelers with full time

nursing staff in September 2019 following graduation in May and National Council Licensure Examination pass in late May/June 2019. Their orientation was completed by September 2019.

The medical surgical unit has had a 53% nurse turnover in the last 2 years with many experience nurses leaving the hospital setting or retiring. This turnover has left the medical surgical unit with an average length of employment at 3 years or less. The rapid response team is an expert team called with patient deterioration, but not coding. This team can be activated by any member of the healthcare team or family. A review of the rapid response team data on the medical surgical unit showed that the highest percentage of rapid response team calls were related to respiratory deterioration. Antidotally when following up with the nurses, they were unaware of pathophysiological reasons for the respiratory depression that were tied to either disease processes, interventions, or medications. There are no state or federal context applicable to this project.

### **Role of the DNP Student**

I am a master's degree prepared clinical nurse specialist and am working as the Professional Practice/Magnet coordinator at the hospital where the project will be held. I report directly to the Vice-President of Patient Care Services/Chief Nursing Officer and am extensively involved in leadership program development and clinical education. I will be creating and facilitating the educational intervention along with the respiratory therapist supervisor. In my educational role, I do facilitate clinical competency day for new hires as well as lead the hospital based clinical nurse specialists and nurse residency



program. Data collection and analysis will be collected by me. This data will be shared with the nursing leadership team and respiratory therapy to determine effectiveness.

I have no relationship with any of the new orientees that will be starting orientation during this time. My motivations for pursuing this project are increased nurse knowledge base, confidence and increased patient quality outcomes. I am passionate about empowering nurses to own their practice and that they are the eyes and ears of the healthcare providers. I believe that this intervention could give the novice nurse an increased sense of confidence in her respiratory assessment and intervention skills. I also believe by creating an avenue for disciplines to educate other discipline, there becomes an increased sense of empathy and teamwork.

### **Role of the Project Team**

The project team will consist of the director of the medical-surgical, the respiratory therapist supervisor, and myself. I have met with the director of both the medical-surgical unit and the director/supervisor of the respiratory therapists. They validated the value of this program and could identify specific instances that were a result of failure to critically think about respiratory assessments. They have agreed to be supportive of the intervention and will participate in the specified ways.

The respiratory therapist supervisor and the DNP student are already creating an educational offering that would allow students to role play and discuss disease/medication effects on the respiratory system. The timeline is to start this educational offering with the orientation class that will be starting on July 8, 2019. The educational offering itself will be held in September after project and IRB approval are

obtained. The medical-surgical director is supportive of altering orientation time to include specified respiratory educational component. To assess the effectiveness of this educational intervention, a 10question survey was administered to all 10 project participants during the first week of orientation and then an identical survey was repeated following the educational intervention. Additional feedback regarding the educational intervention will also be documented for future intervention planning.

### **Summary**

Equipping the novice nurse to move from beginner to expert requires a team of clinicians to assist in education and support of the novice clinician. This shift will create a confidence in the nurse to proficiently take care of their patients that will result in elevated nurse satisfactions scores and patient quality outcomes. These quality improvements will be seen in the data assessment components.

### Section 3: Collection and Analysis of Evidence

#### **Introduction**

It is the nurse's responsibility to identify when patients are experiencing deterioration of any kind, but it is the hospital's responsibility to ensure that the nurse is given the educational resources to assess and intervene with respiratory deterioration. The practice-focused question for this project was as follows: How will an educational program focused on respiratory therapy received during orientation impact the novice nurses' confidence and knowledge level regarding respiratory assessments and treatments?

In this section, I focus on narrowing the practice-focused question, the sources of evidence, and how that evidence will be analyzed. These outcomes are then be shared with the organization to modify the existing orientation plan.

#### **Practice-Focused Question**

Literature has revealed that novice nurses need support in the transition from student to bedside clinician. There is a gap in the identification of respiratory deterioration by the novice nurse. That gap in knowledge results in novice nurses not being able to critically think through the entire pathophysiology process and can lead to adverse patient outcomes as well as decreased nurse confidence. The practice focused question for this project was as follows: How will an educational program focused on respiratory therapy received during orientation impact the novice nurses' confidence and knowledge level regarding respiratory assessments and treatments?

Senior student nurses in this Midwestern community were questioned about knowledge of respiratory assessments and interventions. These students reported that respiratory treatments and assessments are discussed in a fragmented fashion in nursing school as part of a pharmacology class, pathophysiology class, or as disease processes are learned. This method is designed to give a comprehensive overview of the disease process or treatment plan, but it fails to instill confidence in the novice nurse regarding respiratory assessment and treatment options. When the senior student nurses were questioned about areas of confidence, there was a routinely reported gap from novice nurses regarding respiratory assessments and treatment plans. Duff et al. (2007) reported that nurses lacked the confidence regarding respiratory assessments and had conflicting responses to the interventions that correlated with the assessments. Massey and Meredith (2011) identified respiratory deterioration as one of the most sensitive indicators of an impending major adverse event and nurses as the key to detect early signs of physiological respiratory deterioration and intervene appropriately. Through this project, I provided each novice medical/surgical nurse with a respiratory educational session focused on basic respiratory assessments and treatment plans. This educational opportunity included both hands on educational opportunities as well as classroom style learning. The goal of this project was that by participation in this educational endeavor, the novice nurse would feel empowered to accurately assess and intervene with respiratory deterioration in a confident manner.

For the purposes of this study, a novice nurse was defined as a registered nurse with either a bachelor's degree in nursing or an associate degree in nursing that has just

completed nursing licensing exams and is beginning their first nursing job. The educator is defined as either me or the respiratory therapist who facilitated the education. This doctoral project was carried out on a 42-bed general medical-surgical unit in a Midwestern community hospital. This medical-surgical unit patient population includes oncology, orthopedics, postoperative care patients, and medical cases.

### **Sources of Evidence**

Standard orientation on the medical surgical floor begins with 1 day of general hospital orientation, 2 days of hospital nursing orientation, and 1 day of hands on clinical competency skills. Following this week, the nurse is transferred to the unit to begin the unit-based orientation program for the next 6 to 8 weeks. For the purposes of this study, orientation stayed the same except for the addition of a 2-hour respiratory assessment and intervention class taught by me and a respiratory therapist. Inclusion criteria for this project were registered nurses (either associates degree or bachelor's degree) who have graduated from nursing school within the last 6 months and were in their first nursing employment. I capped entries into the program at the first 10 nurses to begin orientation in July- September 2019 on the medical surgical unit. Initial respiratory assessment and intervention knowledge and confidence were assessed the initial orientation week during the clinical competency day by completion of a de-identified survey consisting of 10 questions. A follow up survey with identical 10 questions will be completed following the educational intervention.

### **Evidence Generated for the Doctoral Project**

The participants for this project were novice nurses (registered nurse with either a bachelor's degree in nursing or an associate degree in nursing who had just completed nursing licensing exams and were beginning their first nursing job) scheduled to begin orientation on the medical-surgical unit in July-September 2019. I capped entries into the program at the first 10 nurses to begin orientation on the medical-surgical unit. The sample number was correlated with traveler position vacancy and the highest possible sample size while being cognizant of current respiratory resources. The convenience sample of nurses allowed for there to be no bias on my part. There are 4 nursing schools in the community of study who have May graduations, so there was no differentiating between the schools for purposes of this study. These participants are the definition of the novice nurse, and thus provided accurate study data. The study group of nurses received their schedule from the clinical nurse specialist on the unit. This schedule included the respiratory educational intervention.

In the staff education intervention, I assessed the impact on the novice nurse's education by replication of a survey system. Initial respiratory knowledge and confidence was assessed during the initial orientation week during the clinical competency day by completion of a de-identified survey consisting of 10 questions. A follow up survey with identical 10 questions was completed following the educational intervention.

There is no reliability or validity available for this tool, which serves as a constraint of the study. This tool was created specifically to assess the effectiveness of the respiratory staff educational component.

This novice nurse respiratory survey (Appendix A) was administered via a physical paper survey that was initially given during clinical competency day during the first week of orientation. This survey was developed in January 2019 by undergraduate senior student nurses as part of their management class. Questions were developed by senior student nurses after observation by students, review of rapid response team data, and interviews with respiratory therapists. These data were specific to respiratory assessments and interventions. Questions were all scored on a Likert-scale. The survey assessed perceived knowledge and confidence on respiratory assessments and interventions. All questions were self-reflective in that the novice nurse scored themselves. These surveys were kept anonymous to illicit greater honest feedback. The same survey was repeated and administered to this group of novice nurses who have completed a respiratory educational intervention.

The 2 groups of scores (respiratory survey scores during the first week of orientation and following the educational intervention) will then be compared to determine the difference of the education intervention. By using and comparing the scores obtained from this repeated survey, I can assess the impact of the respiratory educational component on clinical knowledge level and confidence at the completion of the novice nurse respiratory educational program. My goal was that a focused

educational intervention during the orientation process would improve clinical respiratory knowledge and confidence in the ability to assess and treat respiratory conditions.

I obtained approval from Walden University Institutional Review Board (IRB) and the community hospital's IRB. Participation in the project did not involve any known foreseeable physical or emotional risks to participants. All medical-surgical novice nurses going through orientation at July-September 2019 were considered participants. Novice nurses going through orientation but not being oriented on the medical-surgical unit were excluded. Data security was maintained, and all surveys were kept anonymous. Data results for both the pretest and the posttest will be reported at an aggregate level.

### **Analysis and Synthesis**

I analyzed the data. Each survey was entered into the SPSS 22.0 package program, and the data were aggregated. There were no surveys with partial data, but these would have been included in the data review as the aggregated question data would have still been accurate. The new graduate respiratory survey data were analyzed using the SPSS 22 package program. The data reported and analyzed were the before and after scores of each of the survey components, including the mean and standard deviation. Independent sample tests and correlation studies were also run using the program. Correlation studies were run for all the survey components to determine correlation between various knowledge components and confidence components.

Coding for data entry was based upon each question. The knowledge-based assessment questions started with a K and then used abbreviated nomenclature to reflect



the question. The confidence-based assessment questions started with a C and then used abbreviated nomenclature to reflect the question. The tables of statistical analysis mirror the survey question order.

### **Summary**

The practice question regarding the impact of respiratory intervention with the novice nurses' level of confidence and knowledge as defined in the new graduate survey was completed. All project components were followed as outlined in the procedural section. Participants' privacy was maintained with the data collection. All data were entered into the statistical analysis software called SPSS 22.0, which reported before and after means, standard deviations, and correlations. The analysis of the two different scores and correlations assisted in the determination of the impact of the respiratory educational intervention. This knowledge base will lead to future development and recommendations.

## Section 4: Findings and Recommendations

### Introduction

In an environment in which more than 53% of the nursing staff on the medical-surgical unit have been in place for less than a year at this Midwestern community hospital, there needs to be a program in place to identify knowledge gaps post nursing school graduation and ways to meet those gaps. The hospital-based novice nurse is presented daily with increasing complex patients with increased comorbidities, which results in increasing responsibility for clinical decision-making (Gillespie & Paterson, 2009).

In addition to the literature, nursing leadership at the large Midwest community hospital identified trends in respiratory rapid response team calls. During nursing rounds, experienced nurses brought to the medical/surgical nursing director's attention that novice nurses were not always able to correctly identify appropriate respiratory assessments or interventions. The local relevance was further exemplified when senior student nurses were questioned about readiness for transition to practice, and they identified respiratory competency as an educational gap. After the review of the literature and feedback from the organization's administration, the problem with the onboarding of novice nurses and their need for developing critical thinking and clinical judgment for acute care practice represents a gap in practice at the site. The practice-focused question for this project was as follows: How will an educational program focused on respiratory therapy received during orientation impact the novice nurses' confidence and knowledge level regarding respiratory assessments and treatments? The purpose of this doctoral staff

education project was to determine how a respiratory therapy educational component added to a medical-surgical novice nurse's orientation can impact respiratory confidence and knowledge.

The sources of evidence for this project were previous literature reviews, which supported the need for a deliberate educational intervention with the novice nurse population. Hoeve et al. (2018) summarized did a systematic review and showcased a subtheme of development. This theme of development includes the support to manage the complexity of care with realistic cognitive expectations. To build on this theme, the novice nurse evaluation tool regarding respiratory assessments was created as the one source of evidence for this project. The 10-question survey was created by senior nursing students in collaboration with me to identify key learnings regarding education and confidence with respiratory assessment and interventions. This survey was the foundation for the initial baseline findings and then replicated following the educational offering to determine change in levels of knowledge and confidence. This survey was administered during the initial clinical competency day the first week of orientation and then replicated following the educational offering. This data were then entered the SPSS program to analyze, including statistical significance of before and after results of the intervention, correlations between survey variables, and standard deviation of results.

### **Findings and Implications**

Table 1 compares the mean scores of the pretest and posttest of the novice nurse educational group. The scores were calculated on a Likert scale from 1 to 4 with 4 being the highest possible scores. All scores (Table 2) show statistically significant

improvement differences in the scores following the posttest ( $p < .05$ ) except for confidence levels with nasal cannula/mask use ( $p > .05$  at .151). Knowledge levels of lung sounds, and the pathophysiology of the different sounds had a mean score of 1.70 before educational intervention; after intervention, the score was 3.10 and was statistically significant ( $p = 0.0$ ). Knowledge levels of respiratory treatments had a mean score of 1.50 before educational intervention; after intervention, the score was 2.8 and was statistically significant ( $p = 0.0$ ). Knowledge levels of medication effects on respiratory assessments had a mean score of 1.40 before educational intervention; after intervention, the score was 2.9 and was statistically significant ( $p = 0.0$ ). Knowledge levels of disease effects on respiratory assessments had a mean score of 1.70 before educational intervention; after intervention, the score was 3.0 and was statistically significant ( $p = 0.0$ ). Knowledge levels of management of respiratory deterioration had a mean score of 1.50 before educational intervention; after intervention, the score was 3.0 and was statistically significant ( $p = 0.0$ ). Confidence levels with the use of nasal cannula and mask had a mean score of 3.0 before educational intervention; after intervention, the score was 3.6. This was the sole education variable that did not show statistically significant improvement with the intervention ( $p = .151$ ). Confidence levels with the use of BiPAP/CPAP had a mean score of 1.60 before educational intervention; after intervention, the score was 2.80 and was statistically significant ( $p = .004$ ). Confidence levels with lung sound assessments had a mean score of 1.9 before the educational intervention; after intervention, the score was 3.10. This was statistically significant ( $p = .002$ ). Confidence with management of respiratory distress event had a mean score of 1.6

before the educational intervention; after the intervention, the score was 3.0. This was statistically significant ( $p = 0.00$ ). Confidence with management of respiratory assessments and interventions had a mean score of 1.7 before the educational intervention; after the intervention, the score was 2.9. This was statistically significant ( $p = 0.00$ ). While all components (except nasal cannula/mask) were statistically significant, the largest differences in scores were with knowledge of medication effects on respiratory assessments and knowledge of management of respiratory deterioration. This validated the previous literature review.

Table 1

*Group Statistics*

	Before/ After	N	Mean	Std. Deviation	Std. Error Mean
Klamath	Before	10	1.70	.483	.153
(Knowledge-Lung sounds and the pathophysiology of different sounds)	After	10	3.10	.568	.180
KRespTx	Before	10	1.50	.527	.167
(Knowledge-Respiratory treatments)	After	10	2.80	.632	.200
KMedEffResp	Before	10	1.40	.516	.163
(Knowledge Medication effects on respiratory assessments)	After	10	2.90	.568	.180
KDiseaseEff	Before	10	1.70	.483	.153
(Knowledge-Disease effects on respiratory assessments)	After	10	3.00	.667	.211
KMgmRespDet	Before	10	1.50	.527	.167
(Knowledge-Management of respiratory deterioration)	After	10	3.00	.667	.211
CNasalCanMask	Before	10	3.00	.816	.258
(Confidence-Nasal Cannula/Mask)	After	10	3.60	.966	.306
CBiPAP	Before	10	1.60	.516	.163
(Confidence--BiPAP/CPAP)	After	10	2.80	1.033	.327
CLSAsses	Before	10	1.90	.738	.233
(Confidence- Assessing and Interpreting lung sounds)	After	10	3.10	.738	.233
CRespSitut	Before	10	1.60	.699	.221
(In a situation of respiratory distress, how confident would you be in your ability to handle the situation?)	After	10	3.00	.471	.149
CManageInterv	Before	10	1.70	.483	.153
(How confident are you in your ability to manage respiratory assessments and interventions?)	After	10	2.90	.568	.180

Table 2

*Independent Samples Test*

		95% confidence interval of the difference						
		<i>F</i>	<i>Sig.</i>	<i>Sig. (2 tailed)</i>	<i>Mean difference</i>	<i>Std. Error difference</i>	<i>Lower</i>	<i>Upper</i>
KLSPatho	Equal variances assumed	0.167	0.688	0	-1.4	0.236	-1.895	-0.905
	Equal variances not assumed			0	-1.4	0.236	-1.896	-0.904
KRespTx	Equal variances assumed	0.028	0.869	0	-1.3	0.26	-1.847	-0.753
	Equal variances not assumed			0	-1.3	0.26	-1.848	-0.752
KMedEffResp	Equal variances assumed	0.762	0.394	0	-1.5	0.243	-2.01	-0.99
	Equal variances not assumed			0	-1.5	0.243	-2.01	-0.99
KDiseaseEff	Equal variances assumed	0.013	0.91	0	-1.3	0.26	-1.847	-0.753
	Equal variances not assumed			0	-1.3	0.26	-1.851	-0.749
KMgmRespDet	Equal variances assumed	0.375	0.548	0	-1.5	0.269	-2.065	-0.935
	Equal variances not assumed			0	-1.5	0.269	-2.067	-0.933
CNasalCanMask	Equal variances assumed	0.021	0.885	0.151	-0.6	0.4	-1.44	0.24
	Equal variances not assumed			0.151	-0.6	0.4	-1.442	0.242
CBiPAP	Equal variances assumed	4.418	0.05	0.004	-1.2	0.365	-1.967	-0.433
	Equal variances not assumed			0.006	-1.2	0.365	-1.987	-0.413
CLSAsses	Equal variances assumed	0	1	0.002	-1.2	0.33	-1.893	-0.507
	Equal variances not assumed			0.002	-1.2	0.33	-1.893	-0.507
CRespSitut	Equal variances assumed	6	0.025	0	-1.4	0.267	-1.960	-0.84
	Equal variances not assumed				-1.4	0.267	-1.966	-0.834
CManageInterv	Equal variances assumed	0.167	0.688	0	-1.2	0.236	-1.695	-0.705
	Equal variances not assumed			0	-1.2	0.236	-1.696	-0.704

Correlation studies (Table 3) were also run using the SPSS 22.0 program between all the survey variables. I addressed positive and negative correlations. Based upon the survey findings of novice nurses perceived scores, I found no correlations (correlation coefficient of .000) between the following items: knowledge with lung sounds and confidence in respiratory distress situations, knowledge of disease effects and confidence in respiratory distress situations, knowledge of medication effects and confidence in respiratory distress situations, and knowledge with the management of respiratory deterioration and confidence in management of respiratory distress situations.

I used Pearson's 1 tailed test to determine correlation tests. There were numerous positive correlations (Table 3), but the strongest was a 1.0 correlation coefficient between knowledge of management of respiratory deterioration and knowledge of disease effects on respiratory assessments. There was a positive correlation between the confidence of managing respiratory distress and the confidence of managing respiratory assessments/interventions (correlation coefficient = .818). There was a positive correlation between knowledge of medication effects and disease effects on respiratory assessments (correlation coefficient = .818). There was a positive correlation between confidence in nasal cannula/mask use and BiPAP/CPAP use (correlation coefficient = .707).



Table 3

*Correlations*

Spearman's rho		KLSP atho	KDisea seEffe	KRes pTx	KMedEf fResp	KMgmR espDet	CBi PAP	CLS Asses	CResp Situt	CManag eInterv	CNasalCa nMask
KLSPatho	Correlation Coefficient	1	0.377	0.548	0.559	0.377	0.411	0.186	0	0.108	0.248
	Sig.(1-tailed)		0.142	0.051	0.046	0.142	0.119	0.303	0.5	0.384	0.244
KDiseaseEffe	Correlation Coefficient	0.377	1	0.356	0.818	1	0.621	0.401	0	0.38	-0.422
	Sig.(1-tailed)	0.142		0.157	0.002		0.028	0.125	0.5	0.14	0.112
KRespTx	Correlation Coefficient	0.548	0.356	1	0.312	0.356	0.571	0.178	0.401	0.261	0.203
	Sig.(1-tailed)	0.051	0.157		0.19	0.157	0.042	0.311	0.125	0.233	0.287
KMedEf fResp	Correlation Coefficient	0.559	0.818	0.312	1	0.818	0.449	0.583	0	0.433	0
	Sig.(1-tailed)	0.046	0.002	0.19		0.002	0.096	0.038	0.5	0.106	0.5
KMgmR espDet	Correlation Coefficient	0.377	1	0.356	0.818	1	0.621	0.401	0	0.38	-0.422
	Sig.(1-tailed)	0.142		0.157	0.002		0.028	0.125	0.5	0.14	0.112
CBiPAP	Correlation Coefficient	0.411	0.621	0.571	0.449	0.621	1	0.204	0.449	0.503	-0.186
	Sig.(1-tailed)	0.119	0.028	0.042	0.096	0.028		0.286	0.096	0.069	0.303
CLSAsses	Correlation Coefficient	0.186	0.401	0.178	0.583	0.401	0.204	1	0.333	0.553	-0.148
	Sig.(1-tailed)	0.303	0.125	0.311	0.038	0.125	0.286		0.173	0.049	0.341
CRespSitut	Correlation Coefficient	0	0	0.401	0	0	0.449	0.333	1	0.818	0
	Sig.(1-tailed)	0.5	0.5	0.125	0.5	0.5	0.096	0.173		0.002	0.5
CManageInterv	Correlation Coefficient	0.108	0.38	0.261	0.433	0.38	0.503	0.553	0.818	1	-0.107
	Sig.(1-tailed)	0.384	0.14	0.233	0.106	0.14	0.069	0.049	0.002		0.384
CNasalCanMask	Correlation Coefficient	0.248	-0.422	0.203	0	-0.422	0.186	0.148	0	-0.107	1
	Sig.(1-tailed)	0.244	0.112	0.287	0.5	0.112	0.303	0.341	0.5	0.384	

A limitation of the proposed project population (novice nurses on medical/surgical unit onboarding in July-August) and time frame needed for project completion, the sample size was 10 nurses. This small sample size may be a limitation and replicative studies would have included more novice nurses over a longer time period. Polit (2010) reports that to capitalize on small random differences in the correlation studies, the sample size should be large. This leads to the limitation of overall generalizability to other areas and the recommendation that this study be replicated using a different sample size to strengthen the correlations.

An additional limitation in the sample was the lack of collection of demographic data such as experience level prior to being a nurse, degree level, and the school attended. These findings might have been used to help the schools and organization to modify their programs to better meet the educational needs of their students. While the limited demographic information is a limitation, it is also a strength. This limited data allowed for greater transparency in the answers because there was greater anonymity. There was also a limitation because this project just measured perceived knowledge and confidence levels versus actual knowledge level. There was also a limitation because the educational intervention was a one-time educational session and not a repeated simulation type educational session. These limitations may lead to a false confidence level and a not true knowledge base that would change practice.

The analysis of correlations specifically the areas that showed no correlation was the area of most concern. There was no correlation between both the knowledge of disease effects or lung sounds/pathophysiology and the perceived confidence in the

management of respiratory distress situations. This lack of correlation is a concern because it identifies the gap for the novice nurse from taking knowledge and putting it into practice. Knowledge should lead to confidence. Implications for this knowledge and confidence gap with the novice nurse needs to be addressed and educational modifications must be created to address this. This knowledge confidence gap was also seen with the lack of correlation between knowledge of the management of respiratory deterioration and the confidence to intervene in a respiratory deterioration situation.

Implications for the individual novice nurses must be addressed and education must be modified that ties the knowledge to the confidence level. Educational interventions must be modified to address this novice nurse generation that has been saturated with knowledge but not empowered to use that knowledge. Addressing the needs of that novice nurse will improve patient outcomes, decrease organizational nurse turnover, and improve nurse engagement.

The respiratory system is foundational to how all the body's systems work and is a critical component in both medication management as well as disease management (Massey & Meredith, 2011). Walden's model to promote positive social change through effective development of the future generations is in complete alignment with the work of this staff education project. Implementation of this educational intervention will empower the novice nurses with an additional layer of respiratory education that will allow them to more confidently assess and treat respiratory deterioration in the patient population. Positive social change starts with the health of their community and this educational intervention could impact the quality of care received. Specifically, the initial benefactor

of this education will be novice nurses as they learn a new and comprehensive way to assess the respiratory status of the patients. Secondary benefactors will be the patients, other nurses, and the organization because quality care will be improved. When quality care is improved, the work environment is improved which allows this health care organization to contribute to the needs of the community. Fero, Witsberger, Wesmiller, Zullo, and Hoffman (2009) discussed how nurse competencies is a vital factor in assuring patient safety and this too leads to a greater community wellness.

### **Recommendations**

Recommendations based upon this study include a formalized respiratory educational session that all novice nurses are required to participate in. This program should be expanded from the one outlined in this project to include the current educational offering, but also be expanded to include more of a simulation type model. Titzer, Swenty, and Hoehn (2012) looked at how the multidisciplinary team could be optimized with the use of simulation in the educational setting. This simulation would actively engage novice nurses in the skill and knowledge acquisition that would then lead to confidence. This simulation could then be followed into the clinical areas and allow nurses to spend time during orientation with the respiratory therapists to further develop confidence in the respiratory assessments and interventions. There currently is a nurse residency program in place that requires all nurses to attend for a four-hour monthly session. The respiratory therapy intervention could take that entire 4-hour residency and include classroom and hands on teaching.

Working with the area nursing schools to develop and grow their clinical respiratory assessment and intervention piece is another recommendation. Initial scores for this project were much lower than anticipated which shows a gap in education preparation at the college level. Additional data collection for this project could have been an assessment of senior nursing students' levels of knowledge and confidence with respiratory assessments and treatments. There is an opportunity for the area schools during the hospital based clinicals to rotate with the respiratory therapist which might increase confidence level with didactic learning such as lung sounds or setting up respiratory interventions such as CPAP.

The final recommendation would be the creation of supportive educational opportunities for nurses of all levels to validate and continue to grow their respiratory assessment knowledge and confidence. This may mean doing competency validation during annual hospital skills day or utilizing simulators from local universities to assess knowledge and confidence gaps. This may also mean a documentation review of complex patients who have been identified as having respiratory compromise and determine if nurses are assessing and treating accordingly. These supportive educational opportunities could be driven and created by a thorough review of rapid response team calls that are specifically related to respiratory deterioration. There is also opportunity with the professional development piece to do mock codes in which there is complete respiratory collapse.

### **Contributions of the Doctoral Project Team**

The project team consisted of the director of the medical-surgical, the respiratory therapist supervisor, and the DNP student. The directors of both the medical-surgical unit and the director/supervisor of the respiratory therapists were supportive. They validated the value of this program and could identify specific instances that were a result of failure to critically think about respiratory assessments. They were supportive of the intervention and were interested in the results.

The respiratory therapist supervisor and the DNP student created the educational offering that allowed students to role play and discuss disease/medication effects on the respiratory system. The educational offering was held in September 2019 after project and IRB approval were obtained. The medical-surgical director was supportive of altering orientation time to include specified respiratory educational component. All project participants completed the 10-question pretest and posttest respiratory survey. Additional feedback regarding the educational intervention was also documented for future intervention planning.

Initial discussion with project team has identified that there is a continued educational need for novice nurses in all areas of the facility. There is future planning with the respiratory therapy department to include and expand this content into the nurse residency curriculum for all novice nurse at the hospital regardless of the unit that they work on. This education will be expanded from the initial 2-hour session to a 4-hour time block that will include rotation with a respiratory therapist. There is also additional

discussion on how this program, and its identified outcomes can be communicated to the area nursing schools for future expansion.

### **Strengths and Limitations of the Project**

The strength of this project was that it quantified and validated a perceived knowledge gap in novice nurses. One cannot fix what they don't know is broken. This knowledge allows programs and support systems to be put in place to not only educate the current nursing staff, but also create plans. This knowledge also allows quality control systems to be operationalized so that respiratory compromise or deterioration can quickly be identified, and appropriate interventions be initiated. An example of this might be increased support from the unit based respiratory therapist with the novice nurses.

Another strength of this project was the multidisciplinary focus and support. The creation of this class and discussion of inclusion into nurse residency has already started the discussion with other disciplines such as physical therapy and pharmacy. This has created a sense of teamwork and ownership of the novice nurse's success. It also created a transparency among the novice nurses of the expertise of the other disciplines and allowed them to validate findings with the resources already present.

Limitations of this project were specifically surrounding time and ability to generalize to other disciplines and other nursing areas. Time was a constraint because there was availability to only do one educational session and one evaluation session. It would have been beneficial to test these same nurses over a period of months to determine how effective the educational module was and how much information was

retained. It would have also been beneficial to add additional education modules to further support and reinforce the teaching that was done. The limitation of the number of participants was also a barrier. Expanding to more novice nurses across the different units might also have provided more data to use for product expansion. It would also have been helpful to collect demographic data from these novice nurses. This data might have helped us identify educational gaps in nursing schools and would have assisted our program development with schools of nursing. This data also might help us individual orientation for novice nurses from different nursing schools.

One of the final limitations of the study was the focus on just perceived respiratory knowledge and confidence. There wasn't an objective standard that measured respiratory knowledge that could be measured against time. An objective measure could have been replicated over time to identify true knowledge acquisition.

Recommendations for future projects would include adding additional disciplines into the orientation process and replicating the educational assessment over time. It is also recommended that additional simulation and real-life scenarios be included to further develop confidence levels in assimilating all the different body systems.



## Section 5: Dissemination Plan

### **Dissemination Plan**

The plan to disseminate the findings has already started with the presentation of the outcome data to the executive leadership team. They have requested a complete summary of the data including the entire project plan. Once they have reviewed the data, they will determine the extent of the dissemination. Currently, I plan to present the information to the organizational nursing leadership team, including all the nursing directors, managers, and clinical nurse specialists/educators. Findings from this presentation will then lead to further discussion and planning opportunities for the novice nurses.

Because this project also revealed findings from the novice nurse who has just graduated, this information will be disseminated to the area schools of nursing via the community wide clinical coordinating council. This council meets twice a year and discusses with clinical sites any opportunities for growth that institutions or schools identify.

The findings for this project can also be disseminated on a broader scale as well specifically regarding education and professional development venues. There are many nursing journals focusing on nursing education and professional development. These areas can then assist health care facilities and nursing schools develop onboarding plans to identify the respiratory educational needs of their novice nurses.

I will continue to analyze the retention with novice nurses and this cohort of novice nurses who participated in the respiratory education project. If there is a

correlation between nurse retention and education, then these data should be submitted for possible presentation at local and national nursing conferences.

### **Analysis of Self**

This project was a complete validation of the nurse that I wish to become. My passion has always been professional development, education, and project design. This project brought all three of these components together. As a scholar, this project pushed me to look at data and statistical analysis in a deeper way that can be transformed into practice changes. It challenged me to ensure that what I knew was truly the most current evidence-based practice. It cemented in my mind that I have a desire to be in nursing leadership to shape the next generation of nurses but not in nursing management. It showcased for me my ability to manage numerous details that are required of project management. Lastly it validated my ability to desire to continue to be involved with the bedside clinician. My passion is people, and I have discovered that I can inspire caregivers to make a difference in patients' lives.

As a clinical nurse specialist for the last 12 years, I have been involved with the onboarding of numerous novice nurses and have listened to the barriers to competent practice. I have seen the tears as they attempt to take the knowledge that they have learned and translate it into a proficient practice while managing all the other competing demands of nursing. This project validates the need create a bridge between nursing schools and practice during the orientation process. It is the taking of the knowledge and creating safe experiences that will lead to the confidence that is needed to provide quality patient outcomes. This experience piece was probably the biggest take away for me. I

had falsely assumed if I provided the education, the confidence would follow. This project showed me knowledge may lead to decreased confidence until proficiency is obtained.

I did not expect the challenge of exclusion that also presented itself. When I began to discuss the plan for this project with the organizational nursing leadership, there were many who desired to participate, but due to study limitations, my class size was limited. This made me realize that many novice nurses do understand their opportunities and desire to continue the educational process. This has motivated and challenged me to see such a strong, empowered group of nurses who were owning their profession and desiring to make themselves better.

The biggest challenge for this project is what next and what are the other barriers to be addressed to ensure the success of novice nurses. This can also be paired with the challenge to identify what barriers experienced nurses face. It is necessary to make sure that the professional development needs of nurses are met so that they can stand as advocates for the patients whom they have promised to care for.

### **Summary**

The question for this staff education project was as follows: How will an educational program focused on respiratory therapy received during orientation impact the novice nurses' confidence and knowledge level regarding respiratory assessments and treatments? Benner's (2001) nursing theory of novice to expert and Ericsson's (1993) theory of deliberate practice were the two theories that were the foundation of this project. I hypothesized that through deliberate practice of respiratory assessments and

treatments that the novice nurse can advance from novice nurse to an increasing expert level. To assess the effectiveness of this educational intervention, a 10-question survey was administered during the first week of orientation and then repeated following the educational intervention. Preintervention and postintervention educational survey scores were entered SPSS for data analysis. Sample size was capped at 10 participants, and all participants completed the replicated survey. Findings from this project (Table 2) show statistically significant improvement differences in the all the survey scores following the posttest ( $p < .05$ ) except for confidence levels with nasal cannula/mask use ( $p > .05$  at .151). There were numerous positive correlations (Table 3), but the strongest was a 1.0 correlation coefficient between knowledge of management of respiratory deterioration and knowledge of disease effects on respiratory assessments. The correlation charts showed no correlation between the knowledge levels of lung sounds/pathophysiology or disease effects on respiratory assessments and the confidence to respond appropriately in respiratory deterioration situations. This validates the need to not only educate but provide a safe learning culture that fosters novice nurse development. This study validated the need for basic respiratory education with the onboarding of novice nurses and must include professional development opportunities for knowledge and confidence acquisition.

## References

- Benner, P. E. (2001). *From Novice to Expert: Excellence and Power in Clinical Nursing Practice*. Upper Saddle River, NJ: Prentice Hall.
- Boyer, S. A. (2008). Competence and innovation in preceptor development: Updating our programs. *Journal for Nurses in Staff Development*, 24(2), 1-6. doi: 10.1097/NND.0000300872.43857.0b
- Buffum, A. R., & Brandon, D. H. (2009). Mentoring new nurses in the neonatal intensive care unit. *Journal of Perinatal and Neonatal Nursing*, 23(4), 357-362. doi: 10.1097/JPN.0b013e3181ba5874
- Chee, J. (2014). Clinical simulation using deliberate practice in nursing education: A Wilsonian concept analysis. *Nurse Education in Practice*, 14, 247-252. doi: 10.1016/j.nepr.2013.09.001
- Duff, B., Gardiner, G., & Barnes, M. (2007). The impact of surgical ward nurses practicing respiratory assessment on positive patient outcomes. *Australian Journal of Advanced Nursing*, 24(4), 52-56.
- Ericsson, K. A., Krampe, R. T., & Tesch-Romer, C. (1993). The role of deliberate practice in the acquisition of expert performance. *Psychological Review*, 100(3), 363-407. doi: 10.1037/1037/0033-295X.100.3
- Fero, L. J., Witsberger, C. M., Wesmiller, S. W., Zullo, T. G., & Hoffman, L. A. (2009). Critical thinking ability of new graduate and experienced nurses. *Journal of Advanced Nursing*, 65(1), 139-148. doi: 10.1111/j.1365-2648.2008.04834.x

- Fitzpatrick, J. J. (2010). The future of nursing: Leading change, advancing health. *Nursing Education Perspectives, 31*(6), 347-352.
- Gillespie, M., & Paterson, B. (2009). Helping novice nurses make effective clinical decisions: The situated clinical decision-making framework. *Nursing Education Perspectives, 30*(3), 164-170.
- Hoeve, Y. T., Kunnen, S., Brouwer, J., & Roodbol, P. (2018). The voice of nurses: Novice nurses' first experiences in a clinical setting. A longitudinal diary. *Journal of Clinical Nursing, 27*, 1612-1626. doi: 10.1111/jocn.14307
- Innes, T., & Calleja, P. (2018). Transition support for new graduate and novice nurses in critical care settings: An integrative review of the literature. *Nurse Education in Practice, 30*, 62-72. doi: 10.1016/j.nepr.2018.03.001
- Lasater, K., Nielsen, A. E., Stock, M., & Ostrogorsky, T. L. (2015). Evaluating the clinical judgment of newly hired staff nurse. *The Journal of Continuing Education, 46*(12), 563-571. doi: 10.3928/00220124-20151112-09
- Massey, D., & Meredith, T. (2011). Respiratory assessment 1: Why do it and how to do it? *British Journal of Cardiac Nursing, 5*(11), 537-541. doi: 10.12968/bjca.2010.5.11.79634
- Phillips, C., Kenny, A. & Esterman, A. (2017). Supporting graduate nurse transition to practice through a quality assurance feedback loop. *Nurse Education in Practice, 27*, 121-127. doi: 10.1016/j.nepr.2017.09.003
- Polit, D. F. (2010). *Statistics and Data Analysis for Nursing Research* (2 ed.). Upper Saddle River, NJ: Pearson Education Inc.

- Read, E., & Laschinger, H. (2017). Transition experiences, intrapersonal resources, and job retention of new graduate nurses from accelerated and traditional nursing programs: A cross-sectional comparative study. *Nurse Education Today*, 59, 53-58. doi: 10.1016/j.nedt.2017.08.014
- Rush, K. L., Adamack, M., Gordon, J., Lilly, M., & Janke, R. (2013). Best practices of formal new graduate nurse transition programs: An integrative review. *International Journal of Nursing Studies*, 50, 345-356. doi: 10.1016/j.ijnurstu.2012.06.009
- Shermont, H., Pignataro, S., Moonan, M., Memmolo, S., & Murphy, J. M. (2019). Transitional mentor education program pilot. *Journal for Nurses in Professional Development*, 35(1), 32-38. doi: 10.1097/NND.0000000000000508
- Titzer, J. L., Swenty, C. F., & Hoehn, W. G. (2012). An interprofessional simulation promoting collaboration and problem solving among nursing and allied health professional students. *Clinical Simulation in Nursing*, 8(8), 325-333. doi: 10.1016/j.ecns.2011.01.001

### Appendix: Novice Nurse Respiratory Survey

Instructions- Please check the box that corresponds most closely to your thoughts  
a majority of the time

Question:	1	2	3	4
How would you rate your knowledge level on the following components?	Novice Minimal Knowledge	Some Knowledge	Proficient Use knowledge without asking questions	Expert Could teach others
Lung sounds and the pathophysiology of different sounds				
Respiratory treatments				
Medication effects on respiratory assessments				
Disease effects on respiratory assessments				
Management of respiratory deterioration				
Question:	1	2	3	4
How confident are you at using the following devices and adjusting per protocol?	Not confident at all	Somewhat confident	Confident	Very confident
Nasal Cannula/Mask				
BiPAP/CPAP				
How confident are you in assessing and interpreting lung sounds?				
If you were in a situation with a patient in respiratory distress, how confident would you be in your ability to handle the situation?				
How confident are you in your ability to manage respiratory assessments and interventions?				