Spring 4-19-2020

Nurse Residency Program: A Critical Care Benchmark Project

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Nurse Residency Program: A Critical Care Benchmark Project

A Paper Submitted in Partial Fulfillment of the Requirements

For NURS5382

In the School of Nursing

The University of Texas at Tyler

by

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April 19, 2020

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Acknowledgments

I want to thank my professors for guiding me through the last two years of school and assisting me with developing this project. I have learned so much about leadership and what it takes to be a leader that people want to follow. I also want to thank my friends, family, and coworkers for helping me along the way, picking me up when I struggled, and supporting me during this journey. A special thanks to my other half for loving me even though I drive him crazy, and for providing unconditional strength and support. Life is oh so much sweeter with you in it!

Executive Summary

Nursing school is arguably one of the most challenging degree plans in existence. The level of professionalism and intelligence of newly graduated nurses (GNs) is exceptional, and the expectation is that they will excel in whatever field of nursing they choose. That said, navigating the theory-practice gap between school and a GN's first job can be extremely intense, especially in specialty areas such as critical care. According to Belvins (2016), both The Joint Commission and the Institute of Medicine recognize that many GNs are not prepared for fast-paced, high-acuity healthcare environments. The recommendation is the implementation of additional education and skills structured into Nurse Residency Programs (NRPs) provided by onboarding facilities. Not only have NRPs been proven to increase GN satisfaction and retention rates, but they are also cost-effective because these facilities are able to retain these nurses.

GNs entering the nursing workforce are extremely vulnerable during their transition into practice. Role stress, skill deficiency, and lack of confidence are just a few factors influencing the success of new nurses (Crimlisk et al., 2017). While nursing schools are proficient at preparing student nurses for their state boards, they often fail to provide adequate clinical socialization into nursing practice. The result is new nurses who are unhappy, stressed out, and at times scared to the point of not only leaving their first nursing positions, but sometimes nursing altogether. It is the duty of experienced nurses and onboarding organizations to ease the theory-practice transition and to give new nurses the tools they need to practice independently. While many organizations have adopted NRPs, many are geared towards med-surg because most hospital GNs start out on these floors. However, up to 60% of GNs choose to work in critical care areas (Rush (2013). Critical care areas such as Emergency Departments (EDs), Intensive Care Units (ICUs), and Operating Rooms (ORs) have more specialized training, such that med-

surg-specific education may not be relevant for these nurses. Another issue found in literature searches is that many authors suggest adopting NRPs, but actual studies with standardized programs are lacking. In an effort to address both issues, a critical care NRP was designed to be piloted at a large level one trauma hospital in Texas. But how effective will this program be? PICOT Question: In GNs (P), how does a critical care specific NRP (I), compared with a traditional internship (C), affect retention rates and satisfaction levels (O) within one year (T) in the ED at a large trauma hospital?

Rationale

According to Cochran (2016), the need for nurses over the next ten years is projected to far outweigh the supply as the population ages and acuity increases. In addition, up to 75% of GNs leave their first nursing jobs, adding to nurse vacancy which is estimated at a staggering 20% (Welding, 2011). Critical care vacancy rates are estimated at 10% with up to a 50% turnover rate of critical care GNs (Cochran, 2016). The cost of training one new nurse is estimated at up to $67,000, which organizations my not be able to afford if retention rates continue to increase (Belvins, 2016 & Cochran, 2016).

The hospital where this project will be piloted is critically short of nurses, where med-surg floors alone are down 25-30 nurses per shift. Not only is this not safe for patients, but experienced nurses are tasked with taking up the slack caused by short staffing. This in turn leads to burnout and the eventual turnover of experienced nurses as well. The organization's solution is to bring in more GNs, but if they are not given adequate training and support, they will not stay either. To break the cycle of nurse turnover, this facility adopted a hospital-wide NRP five years ago. While this program has drastically improved GN retention rates, it is based on med-surg nursing, and the opinion of GNs in specialty areas is that a critical care-specific program

would be more appropriate. For example, education about hospice care may be appropriate for nurses on hospital floors, but this may not apply to critical care nurses.

According to Belvins (2016), a positive correlation was found between NRPs and GN job satisfaction rates and commitment to work, which directly affects retention rates. Increased satisfaction leads to improved performance and increased engagement, which impacts the quality of patient care provided. In short, happy nurses want to stay because they enjoy where they work, which is reflected in how engaged they are and how well they treat their patients. One of the benefits of NRPs is they give GNs a support system that extends beyond traditional internships, and they provide continuing education that they may not have had in school or during their internship. The goal is to provide GNs with the best chance for success in their new nursing role, and to set them up to succeed in their career. The problem with traditional internships is that they only last a few weeks. The internship at the piloting hospital is eight to twelve weeks in the ED, whereas the NRP will last an entire year with constant evaluation and follow-up with the nurse interns.

Literature Syntheses

The literature searches for this project were conducted over five semesters (two years). Each search used the key words *nurse residency program, nurse residency program effectiveness, continuing education for graduate nurses,* and *transition to practice.* Medline, Cochran, CINAHL, and ebscohost were searched for relevant articles that were within five years of the search date. Articles were filtered to include only those that were peer reviewed, written in English, and included a full copy of the text, preferably in pdf format. Several articles were found with each search, and it was immediately noted that many authors used data from the same studies in their reports. The original articles were found and used as references for this project,

and articles that reworded these studies were then omitted. Actual studies related to NRPs were scarce, but the ones found were used as references as well. The majority of the literature found was in the form of systematic and literature reviews, while one was a small cross-sectional study. The results of the literature searches and the lack of large studies increased the drive to implement this project. The recommendation from the majority of authors was to implement a standardized NRP to study the process and the results.

Cochran (2017) wrote a systematic review about NRP effectiveness in reducing GN attrition rates and identifying the best practices for supporting GNs in acute care settings. A total of fifteen peer-reviewed articles were selected that included literature reviews, qualitative research studies, case studies, and one expert opinion. In one study, a sample of 524 GNs in 49 hospitals were analyzed for a cost-benefit analysis that compared NRPs to traditional internships based on GN turnover rates and contract nurses (Cochran, 2017). GN turnover decreased from 37% to 6% with implementation of a NRP, which saved the organization over $10,000 per average inpatient census of 151 and an overall net savings of $50 per patient day for two years. In a different study, GN retention rates increased from 35% to 97% with NRP implementation, which increased annual savings by almost $500,000. In addition to financial savings, Cochran examined best practice guidelines for NRPs and what supports GNs most as they transition to practice (2017). In a study with 13,577 GNs, incivility was found to have a profound impact on attrition rates due to increased job, psychological, and cognitive stress. The authors found that GNs often leave their first jobs because they feel undervalued, unappreciated, bullied, and neglected on top of feeling underprepared with skills, time management, conflict resolution, and interprofessional communication. 928 GNs in a different study said they want strong preceptors, more clinical experience, and mentors for support beyond what is provided during their

internships (Cochran, 2017). According to Cochran (2017), the reality shock, stress, and anxiety GNs face as they enter practice peaked at around six months, and then decreased around twelve months, which is far beyond their weeks-long internships. The authors found that GNs who felt they had a healthy work environment were better able to handle reality shock, and NRPs were the solution. NRPs were suggested as not only cost-effective, but also able to expand GN knowledge, clinical skills, and critical-thinking (Cochran, 2017).

According to Crimlisk et al. (2017), GNs enter employment with much theoretical knowledge and a desire to improve their clinical skills. Historically, the theory-practice gap has been bridged by NRPs that are based on med---surg nursing because it provides an overview of nursing as a whole. The aim of this study was to pilot a med-surg-based NRP with 46 GNs from multiple clinical areas. The NRP curriculum included lecture, simulations, socialization, critical thinking exercises, conflict resolution, case studies, and technical skills that were consistent with the Nurse Transition Best Practices special report on NRPs (Crimlisk et al., 2017). The program was conducted in a 500-bed level one trauma hospital, and GNs were instructed to complete questionnaires at six and twelve months after hire. At the end of the twelve months, 42 of the GNS remained (91% retention). The authors found value in active engagement and learning during the NRP, as well as constant self-evaluation of GNs and evaluation of the program itself. The NRP in this study was found to have a positive influence on GN retention rates, such that Crimlisk et al. suggests future NRP implementation as a tool for onboarding new nurses (2017).

In a systematic literature review by Edwards et al. (2015), 30 articles were used to help determine effective strategies for supporting GNs as they transition into clinical practice. According to the literature, the transition from student nurse to independent practice can be traumatic, but NRPs can help ease this transition. However, the structure and content of

successful programs are not well known because each program is different. That said, NRPs have proven success with respect to GN retention rates, but more importantly new nurses expressed gratitude for the efforts made to improve their training and quality of work life (Edwards et al., 2015). This literature review included studies of GN transition programs over a ten-year period. What was most interesting about this article is that the type of support was not necessarily as important as the effort to provide support. The recommendation from the authors was to include some type of transition program that includes a combination of clinical and didactic education, but that more research is needed on structured NRPs (Edwards et al., 2015).

In a cross-sectional study by Lourencao (2018), 36 GN NRP participants were asked to perform self-evaluations that reflected their level of vigor, dedication, and absorption. Vigor referred to level of resilience and energy, dedication referred to the level of work engagement, and absorption referred to the ability to be fully committed and focused at work. The aim of this study was to evaluate the levels of engagement amongst GN participants, based on these three categories. The result was that GNs involved in NRPs had high levels of engagement on all dimensions, especially with dedication (Lourencau, 2018). Increased dedication promotes skill and competency acquisition, which directly affects patient care quality. In addition, supportive work environments are important to obtain the high levels of engagement that GNs reported. As with other studies, Lourencau noted the lack of publications about NRPs, and suggested that more evidence on structured programs is needed (2018).

In an integrated literature review by Rush et al. (2013), 47 articles were reviewed with the goal of identifying best practices for formal NRPs that could be used by future organizations. This article mentions the known theory-practice reality shock that is noted by most authors, as well as the need for formal, structured NRPs with studies about their effectiveness. Rush et al.

states the theory-practice gap has gained attention recently because of the developmental lag (gaps in role-related knowledge, skills, and clinical judgement) that GNs face when entering the workforce (2013). In addition, up to 75% of GNs across the United States lack critical thinking and do not meet the expectations for entry-level clinical judgement abilities, which increases the risk for errors. One of the challenges of literature searches about NRPs that the authors noted was the variability among NRPs, which makes it challenging to decide which program method is most effective. The overall theme with the majority of these articles is that NRP standardization is lacking and needs further study.

Stakeholders

Stakeholders for this project include all levels of leadership, from GNs themselves all the way up to leadership at an organizational level. GNs are the most important stakeholders because the whole point of this project is to evaluate how successful they are and if they stay longer than one year because of the program. The whole project is based around GNs and what nurse leaders can do to influence their desire to stay and their level of engagement and enjoyment at work. The implementation team is important because without engagement from each team member, the program will fail. Stakeholders at this level need to be excited about this project and the end result, and they need to be committed to seeing it through until the end and longer if it is adopted into practice. ED and hospital educators are important because this program will be a spin-off of the hospital-wide NRP that will be catered toward critical care. The support ED educators will be needed because they control GN internships, which will be integrated into the NRP. In addition, their continued assistance will be needed throughout the program because they organize competencies, class times, educational opportunities, guest speakers, and simulations. ED supervisors, managers, and the director will need to be on board with the project, as well as ED

staff nurses, who will be asked to provide support and mentorship throughout the program. The ED staff doctors, residents, and ancillary staff will also be incorporated into the program so they are aware of the process and how to best support the new nurses. Outside of the ED, approval for the project will be needed from the critical care director and the hospital Chief Nursing Officer (CNO). The ED director and director of critical care will be instrumental in assisting with any program-related costs, such as education hours for classes and preceptor activities outside of on-the-job hours. It takes a village to raise a nurse, so all levels of leadership will be asked to support this program and the new nurses. If the project is successful and the NRP is adopted for all of critical care, the directors and managers from the ICUs and other areas will need to be involved. The implementation team will need to be modified at that point to include staff from those departments as well.

Plan for Implementation

This project began with the intention of implementing a critical care-based NRP in the ED at a trauma hospital in Texas, but a few things happened that stalled the program. First, it was realized by the author that the NRP is too large to take on in one semester, mainly because there are so many moving parts and this project needs to be very well thought out and executed. This is not a project that can be rushed because the intention is for it to succeed, have positive results, and be implemented in the future. Second, the ED at this hospital recently gained a new ED educator who was originally contracted through the ED, but is now with Nurse Practice and Development (NPD), so several processes are changing and approval is more complicated because both the ED and NPD have to be on board (NPD is over the hospital NRP). Third, because of the recent Coronavirus outbreak, all major changes and projects that do not pertain

specifically to front-line nursing have been halted until further notice. Because of this, the project will be a benchmark project. The following are the steps for future implementation:

Outline

- Vision for change (2 weeks- most is already done but needs to be presented to leadership)
    - Identify the topic (done)
        - Decreased Graduate Nurse (GN) retention rates, job satisfaction, and confidence, and increased job stress
    - Evaluate current practice/needs assessment (with management/educators)
        - Theory-practice gap
        - Increased patient acuity
        - High turnover, short staffing, decreased experience as new nurses are hired in the place of experience, increased stress on experienced nurses
        - Patient safety and satisfaction
    - Develop a PICOT question- In GNs (P), how does a NRP (I) compared with a traditional internship (C) affect retention rates (O) within one year (T) in the ED at a large trauma hospital?
    - Develop project goals (done)
        - Increase GN retention rates, job satisfaction, clinical knowledge, confidence
        - Increase training for preceptors
        - Promote standardization and high-quality patient care

        - GN education and certifications
    - Research strategy and research (done, but also ongoing)
        - Education (EDU) department consult for retention rates
        - Online search for peer reviewed supporting evidence
        - Evaluate the evidence
- Staff and stakeholder engagement/support (1 week)
    - Hospital leadership, ED managers, ED educators, ED doctors, ED staff, previous GNs
- Establish teams (2-3 weeks)
    - Promote transformational leadership style
    - Work with ED educators/managers for program approval and expectations
    - Preceptors, validators, mentors- ED volunteers
    - Presenters for special topics
        - Hsptl CNO, ED director/manager/supervisors/etc. (ED staff), ICU RN (drips and meds), social work and security (psych), ED RN volunteers, RNs from children's, floor RN (medsurg)
- Assess/eliminate barriers (1 week)
    - Team brainstorm session(s)
    - Preceptor-mentor mismatch (address as needed)
    - GN pushback
    - Not enough preceptors/presenters
    - inadequate preceptor skill
    - Disorganization

    - Lack of leadership support
- Develop a pilot nurse residency program (2-3 weeks)
    - Program objectives
        - Implement a 1-year NRP in the ED to help bridge the theory-practice gap between school and work, and increase GN retention rates, job satisfaction, critical thinking, skills knowledge, and confidence
        - Provide education for nurse mentors, preceptors, and validators that is standardized and that meets the compliance requirements of the department
        - Promote the safety, welfare, and security of GNs in the ED while providing a supportive, nurturing environment
        - Provide the necessary training and certifications for GNs at appropriate times such that at the end of the program they will be competent and ready for practice in the ED
    - GN responsibilities
        - Attend all classes
        - Apply learned competencies
        - Set personal goals for learning
        - Uphold personal responsibility, integrity, and ownership of mistakes
        - Be open to coaching and feedback
    - Preceptor responsibilities

        - Clinical judgement and reasoning
        - Cooperation with the healthcare team
        - Lead by example through personal integrity and high standards of care
        - Maintain certifications and competencies
    - Education topics
        - Special presentations- Psych, crash cart meds, ICU drips, triage
        - Frist 2 weeks of start will be in class doing education
    - Simulations (first 2 weeks of program while not on floor)
        - Disaster, trauma, childbirth, STEMI, stroke, sepsis, DKA
        - Scavenger hunt in the department
        - Tour of the hospital and frequently visited locations (cath lab, OR, ICU, blood bank, clinic CT scanners, MRI, etc.)
    - Certifications/ competencies
        - BLS, ACLS, PALS, TNCC, ENPC, CPI, skills day check offs- in class, time will need to be scheduled based upon when classes are available
        - NIHSS, rhythm testing, SANE, disaster, other online competencies- can be done at home or can stay after group days to complete the online modules
    - EBP project completed by GN small groups
        - Small groups of 3-4 GNs
        - Pick a topic based on a need in the department

        - Expectations- professional power point presentation and a poster board presentation at the end of residency
    - Monthly meetings with GNs for educational classes and small group work (discuss schedule with managers, preferably 1st of each month so it is a set time)—11 total (unless more are needed), first month does not "count" because they will have 2 weeks of education/class time
- Educate staff (3-4 weeks, and ongoing as needed)
    - Standardized precepting/care expectations
        - Charting, audit forms
        - Any legal issues
    - Transformational leadership style of precepting
- Implement the NRP (1 year)
    - Projected start- January intern group
- Outcome measurement (ongoing)
    - Participant evaluations (every 3 months during program)
    - Clinical skills check list (to be completed during internship by GN and preceptor)
    - Evaluation of retention rates and GN satisfaction scores
    - GN evaluation of preceptor (every 3 months)
    - Preceptor evaluation of GN (every 3 months)
- Graduation from program!
    - Graduation party
    - Certification of completion for GNs

- Project presentations
- Exit survey
  - Satisfaction with job
  - Confidence level
  - Level of stress
  - How well they feel the program prepared them to be an ED RN

Vision for change (2 weeks)

The topic for this project is GN retention rates, job satisfaction, confidence with clinical skills, and job stress levels. The facility that the program will be trialed at has had difficulty with GN retention in recent years. The hospital education department started a facility-wide NRP five years ago because retention rates were under 50%. Since the start of this program, retention rates have been between 80-90%. One of the complaints between NRP participants has been that the hospital NRP is often med-surg-based, and critical care GNs did not feel they benefitted much from the program. In an attempt to increase relevance of the education and support provided for these specialties, the idea to have a critical care-based NRP was born. The location of this NRP will be the ED at this facility, a level one trauma hospital in Texas.

Department needs

The ED at this facility has several identified needs. The culture shock new nurses experience after school has been documented for years. Walsh (2018) included problems with delegation, prioritization, critical thinking, collaboration, conflict resolution, and the ability to give and receive feedback professionally as some of the skills GNs lack. In addition, because the ED is a critical care, high acuity, fast-paced environment, ED nurses must be proficient with their skills because patient lives depend on it. Patient acuity and comorbidities are increasing,

which means treatment is more complex. This hospital is critically short staffed of nurses, which increases stress on the remaining nurses, which increases dissatisfaction and in turn increases turnover. It is a vicious cycle that this facility is trying to stop. The main goals of this organization center around patient safety and satisfaction, and high-quality patient care. Unhappy, stressed out nurses do not perform to their best ability, which directly affects patient care quality. All hospitals are affected by patient satisfaction scores as well, which are a reflection of the quality of care patients receive.

Goals

The goals of the project are to increase GN retention rates, job satisfaction, clinical knowledge, and confidence, and to provide ongoing support for one year. In addition, this NRP will include training for preceptors and mentors in an attempt to standardize charting and the delivery of patient care. GNs will also receive the required certifications and trainings to be compliant in this department.

After performing literature searches, evidence was evaluated for validity using GAO and RCA assessment tools and a synthesis table. This research was then presented to the ED director and managers, and the ED educators. The ED educators have agreed to assist with implementation of this project in the future. GN retention rates were obtained from the education department for the past five years, from before the hospital-wide NRP was started, as well as retention rates for each program up to now. These will be used for comparison with the retention rates of the ED NRP.

Establishing Teams (2-3 weeks)

Melnyk and Fineout-Overholt (2015) recommends a transformational leadership (TL) style because it incorporates cooperation between leaders and followers in a way that everybody

wins. TL leaders serve as role models for followers based on trust and integrity, and they lead with enthusiasm and positivity (Melnyk & Finout-Overholt, 2015). In addition, TL leaders provide intellectual stimulation through creativity and innovation, while encouraging and supporting their followers through individualized consideration. TL leaders seek new solutions for problems that are based on evidence and avoid an authoritarian approach.

Preceptors, Validators, and mentors

ED managers and educators will be involved in the team-building process. Experienced nurses will be notified via email, in monthly staff meetings, and in daily huddles of the NRP and the need for presenters, preceptors, mentors, and skills validators. This will be a commitment for one year, and each role will be clearly described before each person agrees to participate. Preceptors will take one GN at a time during their 12-week internship on the floor and will be responsible for teaching their intern the necessary daily skills and procedures needed to function in the ED. This is a huge responsibility and each preceptor must understand the importance of this role, and they should want to participate. In the past, nurses were required to precept where some were flat against it, which negatively affected their interns and patients. Skills validators will be given a choice from a list of skills needed for compliance by the education department. Each validator will research the skill and develop a presentation for the interns that they will present on skills day where each intern will then check off on the skills. Creativity is encouraged! ED mentors will serve as nurses the interns can consult for support and advice.

Special presenters

The NRP will have one education day each month, preferably on the first Monday of each month so the interns have a set schedule for classes. The first month will not be included because the interns will have at least two weeks of classes before being on the floor with their

preceptors. During the first two weeks, hospital and ED leadership will be encouraged to visit one of the classes to introduce themselves and talk about their role in the hospital/department. In addition, roles of ancillary staff, such as security and social work, will be addressed. Nurses from other departments, such as Children's, the ICU, and med-surg will also be invited.

Barriers

The NRP team will meet over the course of one week to address any barriers to implementation. This will be a team effort and participation from each member is encouraged. Problems with the internship in the past include mismatching of interns and preceptors, GN pushback with respect to ED procedures, not enough experienced nurses willing to precept, inadequate preceptor experience, program disorganization, and lack of support from leadership. To address issues between preceptors and interns, evaluations will be performed with ED supervisors and educators every 2 weeks during the internship where conflict resolution skills will be used. If it truly is an unsolvable situation, the intern may be placed with a different preceptor for the remainder of their internship. GNs will be expected to participate, and will be given several tools for success. They will be pushed by their preceptors and encouraged by their mentors. GNs will be notified up front of the NRP project due at the end of residency and will be given a tentative class schedule for the entire year, with the understanding that some classes may change due to special presenter schedules. Preceptors will meet with the NRP team before the program starts to discuss requirements and skills, and to address any knowledge gaps. The hope is with proper planning, this program will be organized and will become a standardized program for the future. Success of this program will hopefully provide leadership with the evidence needed to continue with the program in the future.

NRP Pilot Development (2-3 weeks)

The NRP will have the following objectives:

- Implement a 1-year NRP in the ED to help bridge the theory-practice gap between school and work, and increase GN retention rates, job satisfaction, critical thinking, skills knowledge, and confidence.
- Provide education for nurse mentors, preceptors, and validators that is standardized and that meets the compliance requirements of the department.
- Promote the safety, welfare, and security of GNs in the ED while providing a supportive, nurturing environment.
- Provide the necessary training and certifications for GNs at appropriate times such that at the end of the program they will be competent and ready for practice in the ED.

GNs will be responsible for attending classes unless otherwise allowed for by program educators or ED managers. They will be responsible for applying competencies they learn in orientation and will be expected to provide safe, quality patient care. GNs will be asked to set personal learning goals or objectives for their internship. GNs will be held accountable for their actions and will be expected to act with integrity, which means taking ownership of mistakes and being open to coaching and feedback. Preceptors will be responsible for clinical judgement and reasoning, as well as cooperation with other members of the ED. Preceptors should lead by example and expected to hold themselves to providing exceptional, safe patient care. Preceptors will be expected to maintain compliance with their own certifications and competencies to ensure their interns are taught current information.

Education topics

Several topics will be discussed in the monthly GN meetings. These include but are not limited to, psych patients, crash cart medications, ICU drips and medications, and triage training

(at the end of the program). In the past, the triage class happened randomly and sometimes years passed before there was a class. Experienced nurses often spend many a shift in triage because as people leave the department, less and less nurses are triage trained. After one year, ED nurses are eligible to be triage trained, so this class will be incorporated into the NRP so that hopefully in the future all ED nurses will be triage trained. During the first two weeks of the program, ED educators will coordinate simulations in the lab to include disaster management, trauma, childbirth, STEIMI, stroke, sepsis, diabetic ketoacidosis, and any other pertinent simulations. The GNs will also have a scavenger hunt in the department and will be given a tour of the hospital and frequently visited locations, such as the ICU, cath lab, and blood bank. Any certifications will be arranged by ED educators, as they have to schedule the classes and some classes require GNS to be in the department for specific lengths of time (such as ENPC and TNCC, which require a year of experience). GNs will have online certifications and onboarding competencies as well that they can do on their own time or after classes in the ED.

Evidence-based Project

In the first monthly GN meeting, the GNs will be asked to break into groups of three or four. This will be their small group for the group presentation at the end of the program. They will be asked to pick a problem in the department that they will research and seek solutions. They will be expected to do a professional power point presentation in an ED staff meeting as well as a poster board presentation that they will present at the hospital NRP event. Participation is mandatory but this project is meant to be fun and to allow GNs to explore how the department operates. After each monthly group meeting, time will be allotted for work on the group project, but GNs will be encouraged to work on the projects at home as well. The goal is to promote teamwork and companionship within the groups.

Staff Education

One of the areas needing improvement in this department is consistent, standardized care delivery. Sometimes it seems that every nurse has a different way of performing tasks and charting, which can be horribly confusing for new nurses. This is worsened with interns are bounced around between preceptors, which is something else that the department is working on. To help standardize care, education classes will be held for prospective preceptors where the group will discuss charting and care delivery. For example, someone may have a great method for putting in NG tubes that they can share with the group. Audit forms will be discussed, such as trauma and stroke audits, because these are compliance measures for the department that directly affect our credentialing as a trauma center and must be followed. Any legal issues will also be discussed, such as documentation for restraints. This is meant to be a brainstorming session with the goal of improving the preceptorship, so that any intern can be placed with any preceptor and they will be given similar guidance and skills knowledge.

NRP Implementation (1 year with ongoing evaluation)

The projected start date of the program will be the January internship. That way the program starts at the beginning of the year and ample time remains to get the small details worked out with ED managers and educators. This will also allow for preceptor training and team building such that disorganization is at a minimum. The program will be evaluated by GNs every three months with respect to perception of clinical skill knowledge, job satisfaction, satisfaction with the NRP, and confidence. Retention rates will be monitored by ED educators and managers, each GN will be given a skills check off sheet that they will work on with their preceptor and will turn in to the educators at the end of their internship. Skills like thoracotomy care will be discussed in class as they happen randomly (unlike sepsis which is fairly common).

GNs will be asked to evaluate their preceptors and visa versa every three months, but open communication with mentors and educators is encouraged so that any issues can be addressed quickly and appropriately. If an issue with the NRP arises, a team meeting will be held to discuss solutions and changes. A Teams message board will be developed as a means of communication between team members, and open communication will be encouraged.

Graduation!

Graduation will be a professional event held at a designated location agreed upon by management (and paid for by the department). It is important that we celebrate graduating GNs in style and with the encouragement they deserve. At the party, they will each be given a certificate of completion for the 1-year NRP. Hospital and department leadership will be asked to attend as well as all preceptors, mentors, and educators. In the last staff meeting before graduation, GNs will present their small group presentations, and they will then present the posters at the hospital NRP event. GNs will be given a final exit survey asking them to rate their experience with the NRP, as well as their levels of confidence, stress, and how well they feel the program prepared them for life as an ED nurse. The hope is that this program will be implemented in the future and will continue so that retention rates and GN satisfaction scores can be compared between programs.

Time Table

Several steps of this project have already been completed as part of this capstone project, however these steps will need to be explained to stakeholders and to the implementation team. The vision for change includes identifying the topic, evaluating current practices and needs, creating the PICOT question and project goals, and developing a research strategy. All of this has been completed by the author, but two weeks will be designated to relay this information to

the team. This is an important step because the presentation of information needs to be well-executed so that the team is excited and motivated about this project. Establishing the team will take another two to three weeks (if not longer). One week will be designated for seeking staff and stakeholder support, and one week will be given to the team to assess for and eliminate barriers. The pilot NRP will take at least three weeks to develop because the project objectives, education topics, simulations, and the roles of GN and preceptors will be discussed. This section can take another week if needed because it needs to have a strong foundation that the entire team agrees upon. Monthly meetings with GNs will be arranged by the team and ED educators, and special guests will be arranged for presentations. Staff education will take another three to four weeks so that all shifts will be on the same page. Standardization is a key aspect of this project and the goal is to have everyone on the same page. The project will be implemented for one year with ongoing outcome measurements every three months that include GN self-evaluations, preceptor evaluations of GNs, and GN evaluations of preceptors. A clinical skills checklist will also be completed during their internship. At the completion of the project there will be a graduation party and an exit survey.

Sample Week One Schedule

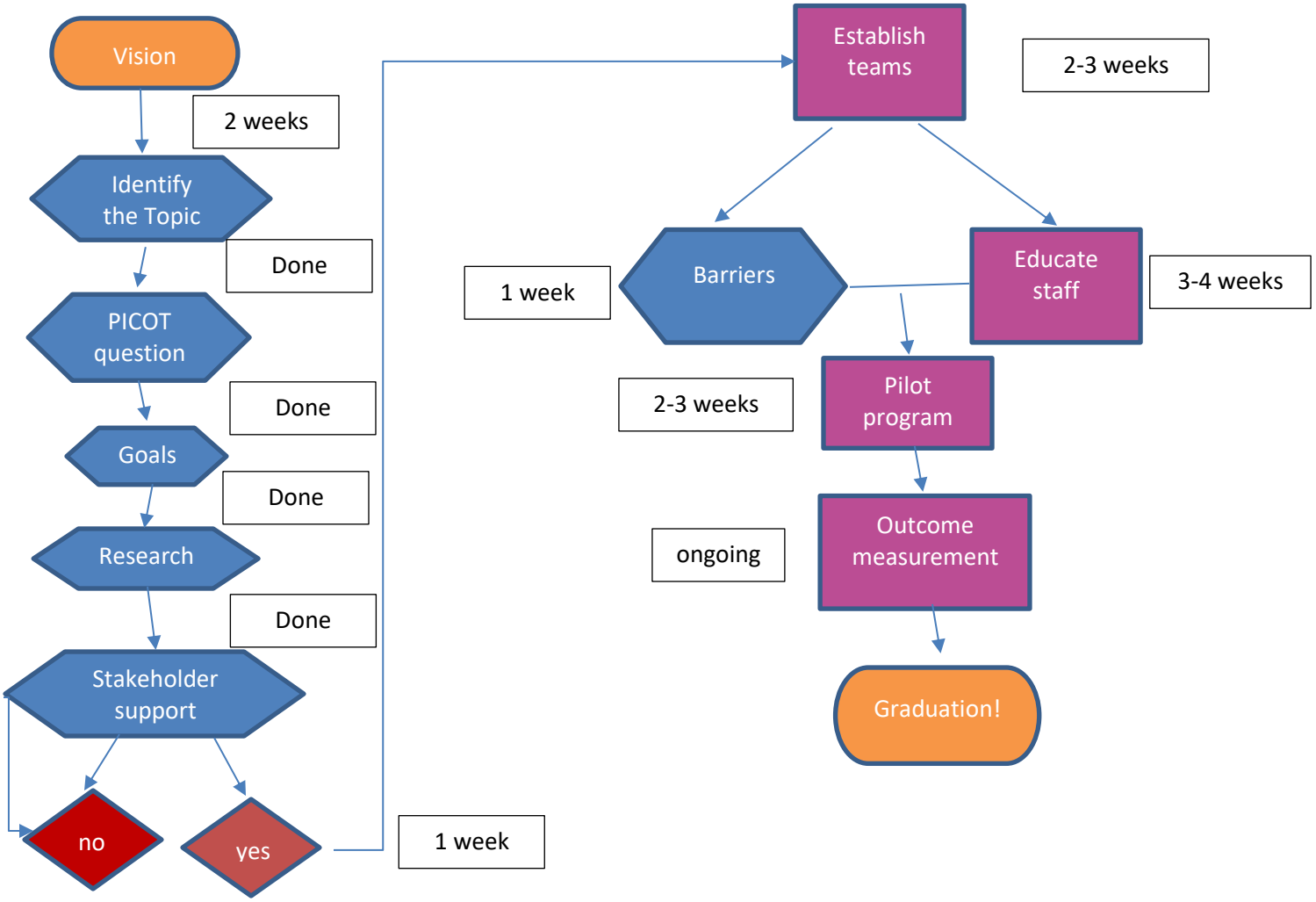
Monday	**Tuesday**	**Wednesday**	**Thursday**	**Friday**
8:00-12:00 ED Conf Room • Welcome! • Introductions • NRP overview • Objectives • Expectations • Small group project • Handout internship packets (educators) • Leadership presentation (CNO/ED director/ mgrs.) Breaks as needed 12-1 lunch 1:00-5:00 • More about leadership • Scavenger hunt • Hospital tour • Presentation (open)	8:00-10:00 ED Conf Room • GN breakfast, meet and greet (all staff invited) 10-12 • Presentation (open) 12-1 lunch 1:00-5:00 • Scope of practice • Professional work behavior • Conflict resolution • Presentation (related to topics discussed) Breaks as needed	8:00-5:00 Education building ACLS	8:00-5:00 Education building ACLS	8:00-12:00 ED Conf Room • Infection control, PPE, isolation precautions, disease reporting and policies • Presentation from infection control RN 12-1 lunch 1:00-5:00 • Disaster management and planning • Disaster presentation • Disaster drill/ simulation (lab and in ED) • Time given to complete online disaster modules/ certification

Sample Curriculum

- Welcome, small groups, intern packets, leadership introductions, scope of practice, HIPAA professional behavior, conflict resolution, infection control, disaster training- week 1

- ACLS/PALS, point of care testing, glucometer and ISTAT access/quizzes- week 2
- Medication admin, sims (STEMI, stroke, childbirth, sepsis, DKA, code, trauma)- week 3
- NIHSS, rhythm testing, skills check offs, SANE- week 4
- Psych class and crisis prevention (CPI) certification- month 2
- Cardiac and respiratory emergencies, check in with interns- month 3
- Orthopedic emergencies, traumas, facial injuries- month 4
- GI/GU emergencies, diabetes, NG tube placement, foley catheter placement- month 5
- Small group project power point presentations, check in with interns- month 6
- Team building, more conflict resolution, communication- month 7
- Month 8-11 open to topics (speak with ED educators)
- Month 9- check in with interns
- Small group project poster presentations, check in with interns- month 12 ENPC/TNCC/triage class- month 12

Flow Chart


Vision
2 weeks
Identify the Topic
Done
PICOT question
Done
Goals
Done
Research
Done
Stakeholder support
no
yes
1 week
Establish teams
2-3 weeks
Barriers
1 week
Educate staff
3-4 weeks
2-3 weeks
Pilot program
ongoing
Outcome measurement
Graduation!

Data Collection and Evaluation

One of the most important parts of a study is a plan to evaluate it for effectiveness. Some studies are evaluated at the end, but in the case of a implementing a graduate nurse (GN) residency program (NRP), ongoing evaluation is needed to ensure the program is heading in the right direction. In addition, the goal of this program is the maximum benefit for participating GNs, which means changes may need to be made as the program progresses if something is found to be problematic.

Evaluation Explanation

The goal of this project is to determine the effect of a NRP on GN retention rates and satisfaction levels. To evaluate retention rates, data will be collected from hospital and ED educators before implementation and again after one year when the NRP ends. The hypothesis is that the NRP will improve GN retention rates after one year, and the null hypothesis is that it will not. Once collected, data will then be compared using a T Test in Excel. The T Test will be an acceptable test because the sample size of ED GN groups is relatively small, normally 12-20 interns. The T Test will be used to either prove or disprove the hypothesis, and will be used in the future to predict the success of the NRP going forward, if it is successfully implemented.

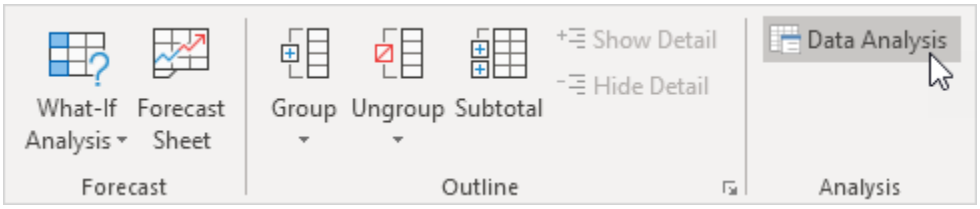
Addressing GN satisfaction is slightly more complicated, but will be performed in a way that is similar to the retention rates. GN satisfaction scores will be collected before and after the NRP, but also every three months during the year. The reason is so any issues with the program can be addressed and the program can be modified if needed. GN satisfaction scores will be collected using a Likert Scale questionnaire that will allow for easy data interpretation in the form of numbers that are assigned based on level of severity (Melnyk & Fineout-Overholt, 2015). With a Likert Scale, GN participants will be able to choose from linear responses on a questionnaire that are close-ended and part of a forced-choice scale (Vinney, 2019). The

collected data will then be compared using T Tests in Excel in a similar fashion as the retention rates, both with the previous data set and with the data collected from before the program started. This is a way to track the progress of the program overall and as an ongoing process. The hypothesis is that the NRP will improve GN satisfaction scores throughout the program. If, for example, satisfaction scores are trending up at first, but then they plateau or trend down later, the implementation team will get together to discuss how to improve the program going forward. The data will also be used at the end to see if participants struggled during one section of the program more than others. Again, the implementation team will meet to discuss the results and make necessary changes to the program.

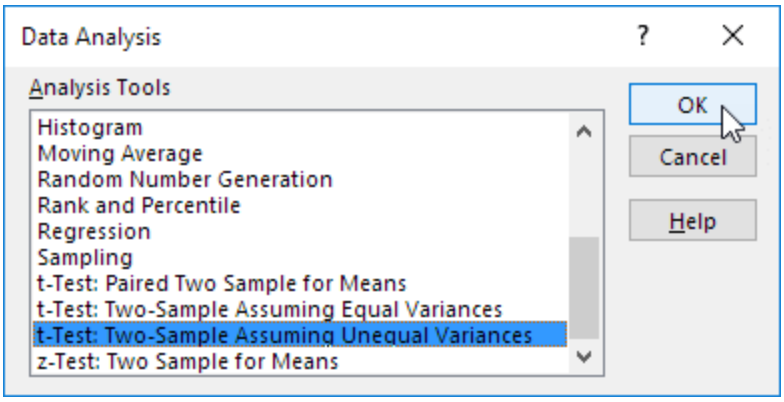
Steps for Evaluation

The steps for evaluating GN retention rates are relatively straight forward. Data from five years ago before the hospital NRP started until now have already been collected. The GN retention rate before the program was 50%, and since then it has been between 70-90 %, usually in the 90's. After the ED NRP is over (one year post-implementation), the retention rate as a percentage will be gathered and compared to the retention rates before implementation using Excel and a T Test. Microsoft (2020) provided the following instructions for how to run a T Test in Excel:

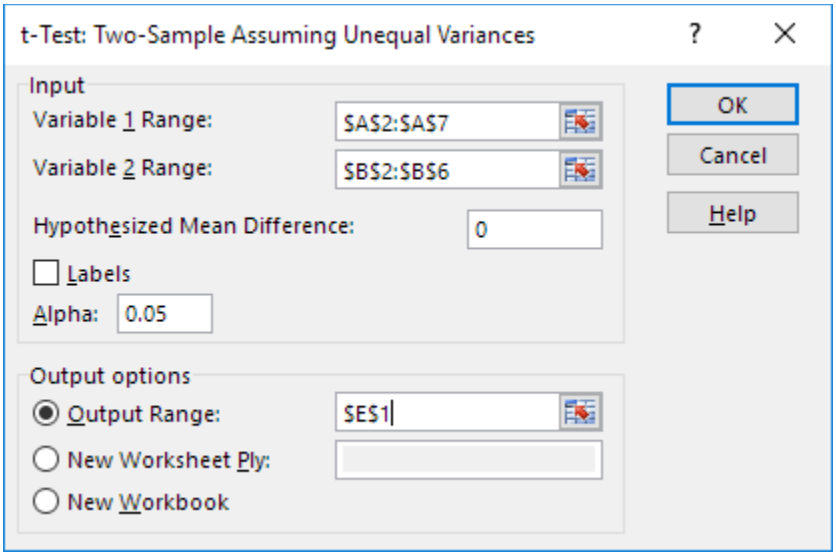
- Make a spreadsheet with two columns: pre and post NRP retention rates
- Open the data tab, then analysis group, click on data analysis



- Select the T Test



- Choose the variable 1 and variable 2 range, in the hypothesized mean difference box type 0, select the output range box where you want the data to result in Excel



- The result will look similar to this, but with different numbers:

E	F	G
t-Test: Two-Sample Assuming Unequal Variances		
	Variable 1	*Variable 2*
Mean	33	24.8
Variance	160	21.7
Observations	6	5
Hypothesized Mean Difference	0	
df	7	
t Stat	1.47260514	
P(T<=t) one-tail	0.092170202	
t Critical one-tail	1.894578605	
P(T<=t) two-tail	0.184340405	
t Critical two-tail	2.364624252	

- If the t stat < the -t critical two, or if the t stat > t critical two, the null hypothesis is rejected. In this case, -2.365 < 1.47 < 2.365, so the null hypothesis is NOT rejected

Evaluating GN satisfaction scores will be similar to evaluating retention rates but the data collection method will be different. To collect data, a Likert Scale Questionnaire will be created that is similar to the one suggested by the Ben Hudnall Memorial Trust (BHMT), (2010):

- GNs confidence questionnaire:
  - Choices on the questionnaire will be between 0-4, where 0= none, 1= minimal, 2= moderate, 3= confident, and 4= can educate others
  - GNs will rate their level of confidence in critical thinking, prioritization, time management, patient assessment skills, interdisciplinary communication, medication administration, leadership skills, patient education, patient safety, delegation of care, advocating for patients and families
- GN satisfaction questionnaire:
  - Choices on the questionnaire will be between 0-4, where 0= never, 1= sometimes, 2= usually, 3= always

  - GNs will rate their level of job satisfaction, how approachable they feel their preceptor is, how they feel the NRP is preparing them for practice, how confident they feel as a new intern and then a new nurse, how happy they are working there, their level of engagement with work, how satisfied they are with their workload and current tasks, and how excited they are to come to work.
- GNs will also be asked if they could change something about the NRP, what would it be.

The data from the questionnaires will be collected and entered into an Excel spreadsheet, and a T Test will be run as it was above for the retention rates. Data will be collected once before the program starts and then every three months until completed. The data will then be compared with the previous data set and with the data collected before the NRP was implemented to watch for trends. As stated before, the hope is for an upward trend throughout the program, because confidence levels are expected to be lower at first and then increase as the GNs progress.

Statistics

According to Microsoft (2020), the T Test is used to help accept or reject a null hypothesis with two variables that have equal variances. In this study, there are two hypotheses, that the NRP will improve GN retention rates, and that it will also improve GN satisfaction scores by the time the program is completed after one year. The descriptive statistics in this study will be the excel spreadsheets with the data sets and T Test results. This data can easily be displayed in charts and/or graphs to present to stakeholders and hospital leadership throughout the program. The results of the test will hopefully be used to predict the success of the NRP for future residency groups (inferential statistics). If this program is successful in this one critical care area, maybe in the future it can be adopted for all of critical care. In addition, maybe this organization can look at splitting the hospital residency group by specialties, such as critical care,

children's, the operating room, etc. The idea with inferential statistics is that improved GN retention rates and satisfaction scores in a specialized NRP could be an indicator that other GN groups would benefit from breaking off into specialty groups as well.

Sample Survey

Rate your level of confidence in the following skills	0 none 1 needs supervision 2 minimal supervision needed 3 independent 4 able to teach others
Critical thinking Prioritization Time management Patient assessments Communication Medication administration Leadership in emergencies Delegation Safety Advocating for patients and families IV starts Use of an AED Crash cart medications and contents 12-lead EKG placement Heart rhythms Recognition of a stroke Recognition of a STEMI Catheter insertion Standard precautions Glucometer testing ISTAT testing BP monitoring End tidal monitoring	

Cost/benefit

As stated above, the cost of training one new nurse can be over $75,000 (Welding, 2011; Belvins, 2016; Cochran, 2017). In addition, the estimated cost of having one nurse complete a NRP is $21,000 (Belvins, 2016; Letrourneau, 2015). Without a transition program, up to 75% of

new nurses will leave their first jobs within one year. This is a total loss for the organization. Not to mention, critical care areas such as the ED have additional costs from specialty certifications such as TNCC, ENPC, ACLS, and PALS that GNs are required to complete as part of the organization's accreditation requirements. The current hospital-wide NRP has successfully increased annual GN retention rates from 50% before the program to over 95% post-implementation. According to Cochran (2017), the estimated cost per 1% increase in turnover is approximately $300,000, and the average cost of NRP operations is roughly $500,000, which means savings more than covers the cost of the program. Increased retention means less contract labor, which is not normally budgeted for. For example, the ED at the piloting facility spent over $60,000 last month alone on contract labor due to short staffing.

In addition to direct program costs, better-prepared, more engaged nurses should in theory make less mistakes and provide better quality patient care. According to Aldhafeeri and Alamatrouk (2019), medical errors affect over 1.5 million patients and cause over 7,000 deaths each year, and are the eighth leading cause of death in the United Stated. In addition, medical errors carry a hefty estimated annual cost of over $4 billion. The majority of medical errors are related to medications, which are primarily administered by Registered Nurses (RNs). Factors that influence medical errors include lack of concentration, stress, fatigue, sleep deprivation, and inadequate training (Aldhafeeri & Alamatrouk, 2019). While many protective measures are often in place, such as verifying orders and scanning medications, organizational culture and proper nursing education are also important, which is where the NRP comes in.

Discussion of Results

Because this project has not been implemented yet, there are no results to report. However, there is much literature to support NRP implementation and the creation of this project

was truly interesting. This project began with the idea of creating and implementing a NRP. After a few semesters of research and work, it was realized that this project was way too large with too many obstacles to take on. The project was narrowed-down in an attempt to simplify it and to get it to an implementable place, but the timing was wrong. The lesson for future projects is to really examine the process and all that is involved with implementation, and to ensure feasibility from the start.

It is well known that nursing internships and preceptorships are important, as this is a pivotal time for all GNs. The problem is that internships normally only last a few weeks, and GNs need support longer than that. According to Cochran (2017), NRPs are cost-effective and proven to reduce GN attrition rates because most provide support for at least one year. As stated above, most GNs experience a peak in reality shock around nine months, which is normally way past the end of their internship. Increased support for GNs has been proven to increase their level of confidence and engagement, which increases they level of job satisfaction and desire to stay (Lourencao, 2018). In addition, the piloting facility is a level one trauma hospital with a reputation for knowledgeable staff, groundbreaking healthcare advancements, and exceptional patient care quality. It is in the interest of this facility to do everything possible to train onboarding nurses such that they uphold this high standard of care.

Limitations and Recommendations

This project began with literature searches about NRPs. It immediately became evident that much research about actual standardized transition programs is lacking, such that nearly every reference suggested further studies. Since this is a benchmark project, the recommendation is to implement the NRP in the ED when the timing is appropriate. If this facility has the opportunity to implement this project, it will not only be an example for other organizations but

it could take the credit for pioneering this project. This is important because one of the first standardized critical care NRPs would not only have been piloted at this facility, but the study about this project would be one of the first of its kind to be published. In addition, since this NRP is structured for critical care, it will better prepare these nurses for practice. The hope is that the ED pilot program will be successful and the program will then be adopted for all of critical care at this facility. The recommendation is for the leaders of this department and facility to jump on this opportunity.

Conclusion

This project was developed because data collected from the organization showed GN participants in the hospital NRP were dissatisfied with some of the program's content. However, GN retention rates increased significantly from before the program started up to now, which proves the program is successful in that respect. But just because the organization is retaining new nurses does not mean they are happy with where they work or satisfied with their progression as a new nurse. If both retention rates and satisfaction scores could be increased, it would be a win for all organizational levels. Leadership watches retention metrics closely, but nurse satisfaction should be equally important. If this program is successful, data could be evaluated in the future as well. For example, data could be collected for several years to see if a stronger, more focused foundation increases nurse retention and satisfaction beyond one year.

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