

**Improving Transition to Practice: A Content Analysis of Nurse Reflections  
Using Resilience Engineering**

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DNP Project

Proposal and Final Report

## **Abstract**

### **Purpose and Aims**

The purpose of this project was to improve the transition to practice by conducting a content analysis of existing nurse reflections through a resilience engineering framework to identify early indicators of maximizing or exceeding limits of resilience and underperformance for practice readiness. The aims were to (1) describe the early indicators of nurse resilience and underperformance, and (2) compare themes of resilience and underperformance risk based on variation in eleven nurse author characteristics.

### **Background**

The journey to independent practice is becoming more challenging for the entire health care team due to gaps in nurse preparation and readiness, as described by both specialty and generalist perspectives. The lack of consensus around defining practice readiness criteria leads to a transition to practice trial and error model for predicting nurse readiness or risk of transition failure. A resilience engineering framework may be useful to understanding the problem of identifying nurse early warning signs of nearing or exceeding their limits of resilience or performance because the criteria for practice readiness are not well understood (Woods, 2015).

### **Methods**

The project was a retrospective content analysis of existing nurse reflection documents collected for non-research purposes. The sample consists of self-evaluation and feedback from 37 nurses from a 576-bed academic medical center in Portland, Oregon. The reflection documents were from nurses who participated in the adult intensive care transition to practice residency and specialty fellowship in FY19. Eleven nurse author characteristics, total reflection entry counts,

and a total tally of quotes with nine words and phrases based on professional standards were collected for descriptive and comparative analysis.

## **Results**

There was a significant difference in six variables between nurses who completed the program compared to nurses who did not complete the program. The six discriminating variables included (1) knowing, owning and performing professional role based the orientation to professional role (O2P) nurse leader evaluation, (2) clinical specialty-population knowledge based on the BKAT-9r score, (3) reflective practice based on a higher total count of reflection entries and (4) the total tally of quotes with the nine words or phrases based on professional standards, (5) the total tally of quotes with self-direction as one of the nine words or phrases, and (6) cost-effective orientation hours. The findings are in alignment with the literature for the transition to practice, preparation-practice gaps, and practice readiness, and resilience engineering framework.

## **Conclusion**

The project results are promising to determine practice readiness to sustain and optimize transition to practice. The project identified key characteristics that discriminate practice readiness to sustain organizational recruitment, hiring, practice evaluation development, practice measurement tools, transition to practice costs, academic and practice partnerships, retention and turnover, patient safety, workforce resilience and wellness, and standards for practice readiness.

*Keywords:* nursing, transition to practice, resilience engineering, preparation to practice, practice readiness, professional practice evaluation

# Improving Transition to Practice: A Content Analysis of Nurse Reflections

## Using Resilience Engineering

### **Introduction**

#### **Description of the Organizational Problem**

Transition to practice was recognized as an early organizational initiative to support nursing workforce needs. In the 1990s, the organization, an academic medical center in the northwest, began two nurse internship programs in the (1) adult intensive care units and (2) operating room to support workforce training into high stability and acuity care areas. For almost twenty years the internships along with unit-level orientation programs were the primary platform for training nurses to practice. The organization adopted the O'Rourke Model which later became the OnSoble Professional Practice Model in 2009 as a framework for understanding professional practice responsibilities, which began the vision towards the current state of nursing practice (OHSU About, 2020).

A commitment to professional practice was one of the first steps to Magnet Recognition. In 2012, the organization was awarded Magnet Recognition by the American Nurses Credentialing Center (ANCC) for the first time (OHSU About, 2012). About 8 percent of hospitals earned the award (ANCC, 2018). In 2017, the organization was awarded Magnet Re-Recognition by the ANCC (OHSU About, 2012). Nursing efforts towards earning Magnet Re-designation demonstrates the organization's commitment to the mission of healing, teaching, and discovery through educating and delivering a healthcare workforce to the public (About OHSU, 2019).

In response to a continued focus on professional practice and emerging organizational workforce trends, the nursing division funded a pilot project in 2014 to redesign the adult

intensive care units internship to a Transition to Practice (TTP) Program to improve nurse readiness for practice. The redesign was based on existing literature and an organizational needs assessment conducted through focus groups and questionnaires that highlighted preparation-practice gaps and challenges with determining practice readiness. The TTP Program redesign established a standardized framework that demonstrated a return on investment through improved nurse experience, competence, professional practice, completion, retention, and certification rates.

In 2016, the ANCC created a Practice Transition Accreditation Program (PTAP) establishing global standards for TTP Programs. The global standards include the following six domains (1) Program leadership, (2) Organizational enculturation, (3) Development and design, (4) Practice-based learning, (5) Ongoing professional development, (6) Quality outcomes (ANCC, 2016). The options for the organization were to pursue an ANCC PTAP recognition before the 2021 Magnet Re-designation application deadline or include the TTP Program in the 2021 Magnet portfolio. The organization chose to forgo the ANCC PTAP application and include the TTP Program in the 2021 Magnet application due to the findings in the gap analysis. A gap analysis of the redesigned TTP Program compared to the AACN PTAP global standards revealed the vision and outcomes of the redesign were on-track and ready to be tested with an expansion into new care areas in the organization.

The TTP Program expanded to include the Adult Emergency Department and PeriAnesthesia Departments, successfully forming the new critical care track in 2017. By 2018, the existing Adult and Pediatric Operating Room Departments were included in the program. Shortly after, the TTP Program became a requirement for Magnet Re-designation after 2019.

Five of the ten TTP Program tracks were not aligned with the standards (see Appendix A for the TTP Program Roadmap).

In 2020, TTP Programs are the norm for preparing the nursing workforce for the realities of the complex and dynamic health care environment. The ANCC PTAP global standards guide some key elements for success or failure to transition to practice. However, even with an established TTP Program and global standards, there is little consensus about the priorities for addressing nurse preparation-practice gaps and practice readiness criteria. Additionally, nurses transitioning from academics to practice or between practice settings are not successfully transitioning to practice at alarming rates (ANCC, 2016). Furthermore, the journey to independent practice is becoming more challenging for the entire healthcare team due to gaps in nurse preparation and readiness as described by both specialty and generalist perspectives. The lack of consensus around defining practice readiness criteria leads to a transition to practice trial and error model for predicting nurse readiness or risk of transition failure. A resilience engineering framework may be useful to understanding the problem of identifying nurse early warning signs of nearing or exceeding their limits of resilience or performance because the criteria for practice readiness are not well understood (Woods, 2015). This highlights the need to analyze nurse reflection through a resilience engineering framework to improve predicting practice readiness and early warning signs of transition failure.

### ***Purpose***

The purpose of this project is to improve the transition to practice by conducting a content analysis of existing nurse reflections through a resilience engineering framework to identify early indicators of maximizing or exceeding limits of resilience and underperformance for practice readiness.

### ***Specific Aims***

1. To describe the early indicators of nurse resilience and underperformance.
2. To compare the themes of resilience and underperformance risk based on variation in eleven nurse author characteristics: (1) cohort, (2) unit, (3) level of experience, (4) interview score, (5) external or internal hire, (6) school of nursing geography, (7) school of nursing program type, (8) orientation to professional (O2P) role nurse leader evaluation, (9) onboarding assessment, (10) orientation hours, and (11) TTP Program completion.

### ***Population Affected by Problem***

The population affected by the problem includes the nurses transitioning, professional practice leaders who manage the program, program coordinators who support implementation, preceptors who guide practice in the care area, nurse managers and assistant nurse managers who hire, terminate, and evaluate candidate performance, and specialty practice leaders who evaluate specialty content and practice. The sample analyzed for this project were nurses transitioning into the residency and specialty fellowship programs for the adult intensive care units.

### **Review of the Literature**

#### ***TTP Program Overview***

At the organization, the TTP Program framework includes a structure, curriculum, learning activity strategies, progression methods and tools, and measurement designed for varying levels of nurse experience. The nurse experience defines the TTP Program structure (1) residency, (2) specialty fellowship, and (3) fellowship. The organizational TTP residency program for new graduate nurses lasts about 18-24 weeks and is cohorted. The organizational TTP specialty fellowship program for experienced nurses entering a new care area lasts about 12-18 weeks and

is cohorted and may be available non-cohorted in the future. The organizational TTP fellowship program is designed for experienced nurses entering a similar care area that lasts variable duration with limited learning activity strategies and is not cohorted.

The organizational TTP Program curriculum is concept-based. It integrates generalist professional practice and specialty population concepts to individualize each nurse's orientation (Giddens, Wright, & Gray, 2012). Essential concepts are patient-centered care, communication and teamwork, quality improvement, evidence-based practice, informatics, safety, clinical reasoning, feedback, reflection, and specialty-population knowledge (ANCC, 2016; Spector et al., 2015). The learning activity strategies are delivered with a flipped classroom philosophy of facilitation to optimize adult learning theory best practice (Vanderbilt, 2019). They are inclusive of skill-, concept-, simulation-, preceptorship- and problem-based activities (Gubrud-Howe & Schoessler, 2008). Progression methods and tools of reflection, self-evaluation, and feedback to standards support the transition to independent practice. The success of the program is measured on its ability to support growth and development, and decrease variation in practice through reported higher retention rates, fewer patient care errors and negative safety practices amongst staff, higher competency levels, lower stress, better job satisfaction, and improved engagement (ANCC, 2016; Spector et al., 2015). This project has the potential to address the gap in the literature by analyzing existing nurse reflections completed during their transition to identify early indicators of maximizing or exceeding limits of resilience and underperformance for practice readiness using a resilience engineering framework.

### ***Preparation-Practice Gap***

The literature about the preparation-practice gap is well established. Academic programs are struggling to articulate readiness for independent practice and employers expect immediate



job readiness (Huston, et al., 2018). Practice gaps include critical thinking, communication, clinical knowledge, time-on-task, prioritization, professionalism, technical and psychomotor skills, physical assessment, and teamwork which are essential for safe patient care (Huston, et al., 2018). Criteria for independent practice not being well-understood means that employers cannot communicate the performance and outcome issues from the documented practice gaps, leading to uncertainty about who is responsible for the problem (Huston, et al., 2018). Evidence shows nurses entering the profession are concrete thinkers, focused on technology who miss the big picture, which leads to a weak assessment of changes in patient condition (Huston, et al., 2018).

The Nursing Executive Center of the Advisory Board determined that 95% of preceptors reported that novice nurses could not determine patient stability or risk (Huston, et al., 2018). Other gaps reported in the literature are prioritization, quality improvement, organizational enculturation, self-management, reality shock, workload pressure, lateral violence, and delegation, and assignment of tasks. Finally, new nurses report that learning how to be a professional in the workplace is more difficult than translating theory to practice, highlighting the need for change. Addressing the gaps will take a coordinated effort between preparation and practice stakeholders through several frameworks that foster the vision of patient safety.

### ***Practice Readiness***

Practice readiness is not well defined or clearly understood by academia, practice, or regulatory bodies (Mirza, Manankil-Rankin, Prentice, Hagerman, & Draenos, 2019). There are two perspectives of defining practice readiness (1) a combination of specialty-population knowledge, technical skills, critical thinking, communication, professionalism, and prioritization, or (2) a generalist foundation with job-specific capabilities for safe patient care, and an

understanding of how to adapt the doing, knowing, and thinking of patient care. Observed challenges in practice readiness include analyzing data, identifying underlying causes, sorting relevant information, prioritizing care, and intervening with an appropriate response (Mirza, et al., 2019). Precursors for practice readiness were described as maturity, clinical practice experience, and socialization to the care area (Mirza, et al., 2019). The attributes of cognitive, clinical, and professional capability under self-efficacy were found to be essential for practice readiness (Mirza, et al., 2019). The outcomes of practice readiness are safe patient care, performance confidence, and transition to the nurse role (Mirza, et al., 2019). Finally, determining practice readiness requires an analysis of both the process of the nursing role and the human characteristics of owning the nursing role (Mirza, et al., 2019).

### ***Gaps***

There are many gaps in the literature. First, the impact of professional practice and the idea of knowing and owning professional accountability to learning and independent decision-making is not well studied. Second, the lack of standardized national competencies for the nursing profession to support the identification of specific criteria for readiness for independent practice or transition risk failure is a barrier. Third, unique evidence about the challenges of experienced nurses transitioning between care areas is difficult to find. Benner (1994) work on the acquisition and development of skill through the novice to expert levels is the closest generalizable body of evidence for experienced nurses transitioning. Benner et al. (2010) went on to describe gaps for new nurse graduates in fundamental skills, clinical judgment, or confidence to practice professionally in the interprofessional health care environment as they transition to practice. Experienced nurses transitioning are at risk of the same practice readiness gaps as new graduate nurses when transitioning to a new care area. No specific data were found

about the transition of experienced nurses. Finally, validated tools for evaluating readiness to transition to independent practice or identifying transition risk failure are not available in the literature (Mirza, et al., 2019).

### ***Framework***

**Resilience engineering.** The concept of resilience is evolving to support the complexity of the workforce and health care environment. Resilience is not about avoiding failure but instead learning how to understand how people cope within a dynamic and complex environment (Hollnagel, 2019). Brittleness is a concept on the continuum of resilience. Brittleness describes performance nearing and exceeding its boundary of efficiency and effectiveness (Woods, 2015). A system is resilient if it can adjust its purpose and sustain required operations under both expected and unexpected conditions (Hollnagel, 2019). It must also manage brittleness trade-offs related to variations, constraints, and disturbances (Woods & Branlat, 2011). Examples of trade-offs for the workforce in a health care environment include giving medications late, practicing outside of scope, and delayed resourcing. The concepts of resilience and brittleness align to create the resilience engineering framework.

The resilience engineering framework is the deliberate design and construction of systems that support the capacity of resilience and management of brittleness (Fairbanks, et. al., 2014). Nurses transitioning from academics to practice or between care areas are at risk of capacity gaps related to their self-directivity, self-management, accountability to owning their independent decision making, and workflow to incorporate the essential technical and judgment knowledge, skills, attitudes, and behaviors required to provide safe patient care (Fairbanks, et. al, 2014). Nurses need to learn how to adapt to trends and decide how resources can be targeted to support ongoing resilience while minimizing the impact of brittleness (Woods & Branlat, 2011).

Nurses must be responsive to unanticipated disturbances that lead to underperformance and resume safe practice promptly with little risk to patient safety (Fairbanks, et. al., 2014).

In summary, the purpose of this project is to improve the transition to practice by conducting a content analysis of existing nurse reflections through a resilience engineering framework to identify early indicators of maximizing or exceeding limits of resilience and underperformance for practice readiness.

The aims are to (1) describe the early indicators of nurse resilience and underperformance, and (2) compare themes of resilience and underperformance risk based on variation in eleven nurse author characteristics. The data will be collected and analyzed individually and collectively. Finally, other themes will be analyzed as part of the project.

## **Methods**

### **Procedure**

In this project, the investigator used a resilience engineering framework to apply content analysis techniques to conduct a retrospective analysis of existing nurse reflection documents collected for non-research purposes to identify evidence of early indications of maximizing or exceeding limits of resilience and underperformance for practice readiness. The reflections were analyzed individually and collectively for the total count of reflection entries and the total tally of quotes with the nine words or phrases based on professional standards. Finally, an analysis will be conducted by the variations in the eleven nurse author characteristics.

### **Setting**

The health care setting is a 576-bed academic medical center in Oregon (OHSU Facts, 2019). About 411 beds are for adults and 145 beds are for the pediatric population. The organization has about 300,000 patient admissions per year and approximately 1.1 million visits

(OHSU, 2019). About half of the patients are public payer or uninsured (OHSU, 2019). The employees total about 15,959 (2597 nurses) (OHSU, 2019). The university educates about 4600 learners per year to contribute to the healthcare, research, and community service mission (OHSU, 2019).

The organization is in a constant state of change. Currently, the organization is working on human resources restructure, care area expansion in a new tower, leader workforce resilience, nurse contract negotiations, vision 2025 strategic plan, and Magnet (2021) re-designation (ANCC, 2018, p. 1). The competing tensions in the setting could be a barrier and challenge, but with content analysis techniques with existing documents, direct access to the nurses and nurse leaders is not required.

## **Subjects and Population**

### ***Inclusion***

The existing reflection documents are from nurses in either TTP Programs for residency or specialty fellowship in the adult intensive care units from July 2018 through July 2019. Incidentally, two nurses were pregnant, which is unrelated to the transition to practice.

### ***Exclusion***

The preceptors, TTP Program Coordinators, Professional Practice Leaders (PPLs), Nurse Managers (NM), Assistant Nurse Managers (ANM), and Specialty Practice Leader (SPL) were excluded. There were no children, neonates, decisionally impaired adults, or prisoners who participated in the TTP Program. Finally, the TTP Program tracks in other care areas identified on the roadmap were excluded.

### ***Sample Size and Rationale***

The sample consists of existing nurse reflection documents, which include self-evaluation and feedback from 37 nurses. The reflection documents are from nurses who participated in the adult intensive care transition to practice residency and specialty fellowship in FY19. Reflections from all 37 nurses were assessed.

### ***Recruitment Plan***

A recruitment letter was not required for the content analysis of existing documents.

### ***Protection of Human Subjects***

There was minimal risk of breach of confidentiality in data recognition from existing nurse reflection documents the study procedure of redacting and coding of all identifying information. An application was submitted to the Institutional Review Board (IRB) for minimal risk protocol. A waiver of consent and HIPPA authorization was requested because of the retrospective content analysis of existing nurse reflection documents, which would not affect the rights and welfare of the nurses. The results were not shared directly with the nurses. The IRB issued an expedited approval. A summary of the findings may be shared with nurse leaders, staff, newsletters, and publications.

## **Implementation**

### **Actual Measures**

#### ***Data collection***

The project was a retrospective content analysis of existing nurse reflection documents collected for non-research purposes. The content analysis allowed for replicable and valid inferences from data to their context (Krippendorff, K, 1980). The goal was to identify a pattern of words, phrases, or themes to determine presence, meanings, and relationships (Columbia

University, 2019). The process was to extract, organize, and synthesize data from the nurse reflections to meet the purpose and aims (Polit & Beck, 2016).

The data of 37 nurses hired in the adult intensive care units from July 2018 to July 2019 were collected in Smartsheet and Microsoft Excel then imported into Statistical Package for the Social Sciences (SPSS) software system. The eleven nurse author characteristics were collected for analysis were the following: (1) cohort, (2) unit, (3) level of experience, (4) interview score, (5) external or internal hire, (6) school of nursing geography, (7) school of nursing program type, (8) orientation to professional (O2P) role nurse leader evaluation, (9) onboarding assessment, (10) orientation hours, and (11) TTP Program completion. Sex and age were proposed to be nurse author characteristics, but excluded from the data collection process due to lack of information.

**Cohort.** The cohort (categorical variable) included summer, winter, and spring quarter groups.

**Unit.** The unit (categorical variable) included medical intensive care (7A MICU), neurosciences intensive care (7C NSICU), trauma-surgical intensive care (8C TSICU), and cardiovascular intensive care (12K CVICU) groups.

**Level of experience.** The level of experience (ordinal variable) included new graduate nurses and nurses with greater than one year of experience groups.

**Interview score.** The interview tool (ordinal variable) is a standardized score across the organization. The highest interview score for a new hire is eighteen, the minimum interview score for a new hire is eleven.

**External or internal hire.** The hiring type (categorical variable) included external new graduate nurses or experienced or internal experienced nurses from different specialty-populations.

**School of nursing geography.** The school of nursing geography (categorical variable) included Oregon Health & Science University (OHSU), University of Portland, Linfield College, and out of state and international schools.

**School of nursing type.** The school of nursing programs (categorical variable) included baccalaureate, accelerated baccalaureate, RN to baccalaureate, and international programs.

**Orientation to professional role (O2P).** The orientation to professional role (O2P) (ordinal variable) was evaluated by a nurse leader using the four-square tool. The four-square tool has three parameters of evaluation to the standards of knowing, owning, and performing practice (Bonnice, 2019). The four-square evaluations were plus/plus which means the nurse knows and owns performing to practice standards, plus/minus which means the nurse knows and owns practice standards but has barriers to performing, and minus/plus which means the nurse does not know or own performing to practice standards and mimics performance that may look like knowing and owning.

**Onboarding assessment.** The onboarding assessment included the BKAT-9r score (ordinal variable), Gregorc Style Delineator self-evaluation (categorical variable), and Gemstone personality self-evaluation (categorical variable). The BKAT-9r is a valid and reliable tool to evaluate basic knowledge in critical care nursing (BKAT-9r, 2015). The highest score is 100, the minimum score is 60. The Gregorc Style Delineator self-evaluation is a research-based instrument to support an individual's identification for how they receive, process, and express information (Gregorc, 2020). The instrument has four styles (1) concrete sequential, (2) concrete



random, (3) abstract sequential, and (4) abstract random (Gregorc, 2020). The Gemstone personality self-evaluation is an instrument to support an individual's identification of personality traits during decision-making, at work, relationships, and parenting (Dream, 2014). The instrument has six traits (1) diamond, (2) sapphire, (3) turquoise, (4) emerald, (5) opal, (6) ruby (Dream, 2014). The onboarding assessment was proctored in the first week of the program for each cohort. The results of the onboarding assessment are entered into the reflection document. The nurse identifies initial strengths, opportunities for growth, goals, and strategies based on the onboarding assessment results.

**Orientation hours.** The target for orientation hours (ordinal variable) are based on the level of experience and progression methods and tools benchmarking. The minimum orientation hours are 480 and the max orientation hours are 800. The target hours for termination is 400 hours.

The 37 nurse reflection documents were collected and stored in a secure Box cloud folder. A Smartsheet was created to collect nurse author characteristics and count of the total number of reflection entries in each document. A Microsoft Excel spreadsheet was created to tally the quotes with the nine words or phrases based on professional standards from the reflection entries.

The data collection process began with collecting and entering the following nurse author characteristic data for each of the 37 nurses into the Smartsheet (1) cohort, (2) unit, (3) level of experience, (4) interview score, (5) external or internal hire, (6) school of nursing geography, (7) school of nursing program type, (8) orientation to professional (O2P) role nurse leader evaluation, (9) onboarding assessment, (10) orientation hours, and (11) TTP Program completion. The content analysis process began by de-identify the data in the reflection

documents. The unit location, leader name, preceptor name, and staff name information were deleted in the reflection documents and replaced with de-identifying titles. The de-identified nurse reflection documents were then linked to the unique nurse number in the Smartsheet. Next, each reflection entry was counted and entered into the Smartsheet to calculate the total number of reflection entries made by each nurse. Several nurses did not enter a reflection for all available opportunities, leaving entries blank. Next, the search function (Ctrl+F) was used to find the nine words based on professional standards. The specific words were not found frequently using the search function (Ctrl+F). Finally, the quotes with the nine words or phrases based on professional standards (1) professional ownership, (2) professional role knowledge, (3) independent decision-making, (4) self-direction, (5) self-management, (6) task-based, (7) stability identification, (8) risk identification, (9) scope of practice were tallied and entered on the x-axis in a Microsoft Excel spreadsheet. The unique nurse number was on the y-axis of the Microsoft Excel spreadsheet. The quotes were a mix of descriptions and reflections. The process was repeated until all of the content for the 37 nurse reflections were read and sorted by the investigator.

### ***Information Systems and Data Accuracy***

The data for the nurse author characteristics, total count of reflection entries from Smartsheet, and the total tally of quotes with the nine words or phrases based on professional standards from Microsoft Excel spreadsheets were imported into the SPSS software system for statistical analysis. The goal was to determine the distribution of data to identify relationships between the total reflection entries, quotes with the nine words or phrases based on professional standards, nurse author characteristics, and detect outliers (Polit & Beck, 2016). The focus was to maintain external validity. The content analysis, descriptive analysis, independent sample t-test

and focus on external validity ensured the accuracy of data collection and analysis. All software used for the study was approved by the organizational site. The investigator maintained compliance with the organizational and regulatory policy for authorization of access, password protection, encryption, physical security, and separation of identifiers from data, storage, and transfer as outlined in the procedure.

### ***Ethics and Costs***

Ethical consideration was that the reflection document was not evaluated for cultural differences or diversity and inclusion which could impact nurse contributions to their reflections. Quotes with professional practice gaps were also identified from nurses who did not complete the program creating an ethical dilemma about follow up to support nurses with remediation needs when the gap did not warrant reporting to the state board. Finally, although TTP Program tracks are opened based on need and readiness, only five out of ten possible care area tracks were open creating a different experience for certain areas in the organization. There were no organizational costs for this project.

## **Final Report**

### **Implementation of Project**

Elements that contributed to success include selecting a committee with a diverse perspective. The chair was a nurse who had a Doctor of Education and worked in academics. The mentor was a nurse who had a Doctor of Philosophy and worked in healthcare. The elective course faculty was not a nurse rather the Interim Director of the Learning and Writing Support Department in academics. Additionally, narrowing the sample of nurse reflections to one TTP Program track, the total count of reflection entries, the total tally of quotes with nine words or

phrases based on professional standards, and eleven nurse author characteristics allowed for depth in the statistical analysis.

### **Nurse Exemplar 1**

The Nurse 13 ownership quotes demonstrated the analytic process for the project. Nurse 13 was an external new graduate nurse from the winter cohort who graduated from a local accelerated baccalaureate nursing program. The interview score was 15/18 (83 percent). The orientation to professional role (O2P) nurse leader evaluation was plus/plus demonstrating knowing and owning professional role responsibility. The BKAT-9r score was 76/100 which evaluated basic knowledge in critical care nursing (BKAT-9r, 2015), Gregorc Style Delineator self-evaluation was concrete-sequential, which described a style of predictable structure, and Gemstone personality self-evaluation was diamond, which identified characteristics of organization and discipline. The total orientation hours were 683.25, which was about 17-weeks of a 20-week benchmark.

Twenty-three quotes with the nine words or phrases based on professional standards were tallied. The quote demonstrated a commitment to enculturation, professionalism, role socialization, self-management, and teamwork; strengths in assessment, big picture, communication, confidence, and generalist foundation to develop specialty practice as described in the literature. Finally, the quote confirmed a connection to the framework with examples of a commitment to capacity development, goals to adjust to managing brittleness tradeoffs, developing resilience through lessons learned, and improved responsiveness to unanticipated situations to resume safe practice and decrease risk. During week 0-2, Nurse 13 wrote,

“I was able to witness the incredible team dynamics and participate to an extent, but even though, for my short first orientation day as a nurse on the team, there were some obvious

differences in how others communicated with me. This was exciting for me at first and I felt an immediate sense of pride from being more included, yet I also began to recognize a new sense of responsibility that was easier to defer to my preceptors as a student. This responsibility is equal parts scary and exciting for me and does allow me to feel more accountable and take more ownership in my own personal practice. I don't rely on handoff information to determine need or priorities, I perform an independent assessment.”

### **Nurse Exemplar 2**

The Nurse 18 self-management reflection demonstrated the analytic process for the project. Nurse 18 was an external experienced nurse from the winter cohort who graduated from an out of state accelerated baccalaureate nursing program. The interview score was 15.70/18.00 (83 percent). The orientation to professional role (O2P) nurse leader evaluation was plus/plus demonstrating knowing and owning professional role responsibility. The BKAT-9r score, Gregorc Style Delineator self-evaluation and, Gemstone personality self-evaluation were missing data. The total orientation hours were 650, which was about 16-weeks of a 14-week benchmark.

Self-management (16 percent) was the word or phrase used the most by the nurses in their reflection entities. Eleven quotes with the nine words or phrases based on professional standards were tallied. The progressive reflection demonstrates a commitment to developing a knowledge base, maintaining hope, leveraging self-directivity, prioritizing self-care to support engagement and resilience. The final reflection demonstrates confidence in clinical judgment with the ability to resource to align with a core value of patient safety. Goals for improvement in time-on-task, integration of evidence-based practice, and philosophy of patient-centered care demonstrate an intrinsic connection to the nine words or phrases based on professional standards

collected in the content analysis for this project as described in the literature and framework.

During weeks 7-8, Nurse 18 wrote:

“Taking a step back I’m overall not quite "feeling like myself"-I see myself being passive and lacking confidence. I know this will come with time and experience but it’s difficult to be in the midst of it. I had felt competent and confident in my last job and it’s challenging to be in this learning phase again where I’m questioning myself. I’m working on having more confidence. I am working hard outside of preceptorship on my own time to build my knowledge based on things I had questioned during a shift, and I do have confidence that this’ll all come together eventually.”

During weeks 13-14, Nurse 18 wrote:

“Seeing this patient and his family as they debriefed and worked through the trauma they’d just been immersed in was emotionally draining and it affirmed the importance of my self-care routines outside of work. Coming in each day I never know what experiences I’ll have or how challenging the day will be and it’s so necessary to be doing the things that I know work to support myself in continuing to be able to be engaged and supportive of my patients.”

During weeks 17-18, Nurse 18 wrote,

“I feel prepared for the transition to independent practice. In looking at the Advanced Beginner Characteristics noted directly below, the “Successful at” and “May need help with” categories are aligned with my perception of where my practice is currently at. I am confident in my judgment of when I need to ask for help from other unit staff or the providers, putting patient safety at the forefront of my practice. I see myself having room to progress regarding time-on-task with some skills but I know this will improve with

repetition. I continue to research and lookup procedures or disease processes I'm less familiar with using my resources to have ongoing education and knowledge building. There is so much to learn here and I look forward to coming into work each shift knowing I'll gain new knowledge, find ways to improve and work towards progressing my patients' care each time I'm here. It's definitely a challenging and at times emotionally draining place to work, but I have aligned myself with good self-care routines outside of work to be able to support my ability to work in this environment.”

### **Evolution and Modifications**

The project was executed as it was designed. Attempts were made to analyze the data using Smartsheet and Microsoft Excel. Importing the data into SPSS improved the efficiency of the quantitative and qualitative data analysis process. Finally, using Microsoft Excel instead of purchasing a content analysis software saved time in learning new software and cost.

### **Unintended Consequences**

Analyzing the quotes made it difficult to maintain confidentiality because the information may be discoverable by unit or role. Finally, the reflections may contain information that discloses a workforce or patient issue creating a competing tension between confidentiality and professional practice.

### **Missing Data**

Data for six nurses were missing from the data collection of existing documents. Interview scores for nurse numbers 21, 22, and 31 were missing from the hiring Microsoft Excel spreadsheet. Nurse 22 completed the program and Nurse 31 did not complete the program. The following onboarding assessment data for the BKAT-9r, Gregorc Style Delineator self-evaluation, and Gemstone personality self-evaluations were missing for nurse numbers 12, 16,

and 18. Nurses 12, 16, and 18 completed the program. Efforts were made to retrieve the missing data, but the data could not be located. All analyses were conducted using the available data.

## **Key Findings**

### ***Nurse author characteristics 1***

There were significant differences for O2P leader evaluation, BKAT-9r score, the total count of reflection entries, the total tally of quotes with the nine words or phrases based on professional standards in the quotes, and orientation hours on completion. Nurses who had higher O2P scores completed the program ( $\chi^2(t = -3.23, p = .001)$ ). The nurses who completed the program had a nurse leader evaluation of plus/plus or plus/minus (See Appendix B, Table 1). The nurses who did not complete the program were all minus/plus (See Appendix B, Table 1). Six out of the ten nurses with a minus/plus nurse leader evaluation did not complete the program (See Appendix B, Table 1). Nurses who completed the program scored higher on the BKAT-9r than those did not complete the program (70.83 versus 79.29;  $t(32) = 2.19, p = .036$ ). The highest possible score was 100, the minimum score was 60 (See Appendix B, Table 2). The total counted reflections entries were three-hundred-eighty-eight. The thirty-one nurses who completed the program made a total of three-hundred-forty reflection entries ( $M = 9.97, SD 4.85$ ). The six nurses who did not complete the program made a total of forty-eight reflection entries ( $M = 5.17, SD 2.93$ ). The total quotes with the nine words and phrases based on professional standards were tallied four-hundred-twenty-five times. The thirty-one nurses who completed the program used the nine words or phrases based on professional standards three-hundred-ninety-eight times ( $M = 12.84, SD 8.60$ ). The six nurses who did not complete the program used the nine words or phrases based on professional standards twenty-seven times ( $M = 4.50, SD = 5.47$ ). For the whole group the average orientation hours, ( $M = 611$  hours) fell within the TTP goal of 480-800



hours. (See Appendix B, Table 3). The nurses who completed the program had more orientation hours than those who did not complete the program (625.27 versus 519.50;  $t(35) = 2.61, p = .013$ ). Of note, nurses who did not complete the program had a wide range in orientation hours as some nurses exited early while others had more time (range 398.75 to 750.25).

**Table 4**

*Statistically Significant Crosstabulation Gamma of Nurse Author Characteristic O2P v. TTP Completion*

		Value	Asymptotic Standard Error <sup>a</sup>	Approximate T <sup>b</sup>	Approximate Significance
Ordinal by Ordinal	Gamma	-1.000	.000	-3.234	.001
N of Valid Cases		37			

**Table 5**

*Group Statistics for Statistically Significant Independent T-Test of Nurse Author Characteristics v. TTP Completion*

	TTP Completion	N	Mean	Std. Deviation	Std. Error Mean
BKAT-9r	No	6	70.83	4.54	1.851
	Yes	28	76.29	5.70	1.077
Orientation Hours	No	6	519.50	133.55	54.52
	Yes	31	625.27	81.77	14.69

*Statistically Significant Independent T-Test of Nurse Author Characteristics v. TTP Completion*

		t-test for Equality of Means						
		t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
							Lower	Upper
BKAT-9r	Equal variances assumed	-2.189	32	.036	-5.45	2.49	-10.53	-.380
Orientation Hours	Equal variances assumed	-2.606	35	.013	-105.77	40.58	-188.15	-23.38

### *Nurse author characteristics 2*

There were no significant differences for the cohort ( $p = .146$ ), external and internal hire ( $p = .129$ ), and interview score ( $p = .252$ ) on completion. However, the results demonstrated a difference in the right direction for cohort, external or internal hire, and interview score. There were no significant differences for the cohort on completion  $X^2(2, N = 37) = 3.85, p = .146$ , despite the spring cohort having four nurses who did not complete the program compared to the summer and winter cohort where only one nurse did not complete the program (See Appendix B, Table 6). There were no significant differences for external or internal nurses on completion  $X^2(1, N = 37) = 2.30, p = .129$ , despite all of the nurses who did not complete the program were external (See Appendix B, Table 8). There were no significant differences for interview scores on completion ( $t(32) = -1.167, p = .252$ ), despite nurses who completed the program had higher mean interview scores (15.18 versus 14.18) than the nurses who did not complete the program (See Appendix B, Table 7).

**Table 10**

*Non-Statistically Significant (Right Direction) Chi-Square Tests of Nurse Author Characteristics v. TTP Completion*

		Value	df	Asymptotic Significance (2-sided)
Cohort (Quarter)	Pearson Chi-Square	3.847 <sup>a</sup>	2	.146
	N of Valid Cases	37		
External or Internal Hire	Pearson Chi-Square	2.302 <sup>a</sup>	1	.129
	N of Valid Cases	37		

*Non-Statistically Significant (Right Direction) Independent T-Test of Nurse Author Characteristics v. TTP Completion*

		t-test for Equality of Means					95% Confidence Interval of the Difference	
		t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Interview Score	Equal variances assumed	-1.167	32	.252	-1.00	.860	-2.757	.749

### *Nurse author characteristics 3*

There were no significant differences for level of experience ( $p = .828$ ), unit ( $p = .544$ ), school of nursing geography ( $p = .246$ ), school of nursing program type ( $p = .402$ ), Gregorc Style Delineator self-evaluation ( $p = .905$ ), and Gemstone personality self-evaluation ( $p = .789$ ) on completion. There were no significant differences for level of experience on completion  $\chi^2(t = 2.14, p = .828)$ . The new graduate nurses and experienced nurses who did not complete the program were distributed equally at 50 percent (See Appendix B, Table 12). There were no significant differences for unit on completion  $\chi^2(3, N = 37) = 2.14, p = .544$ . All nurses from 8C TSICU completed the program (See Appendix B, Table 11). There were no significant differences for school of nursing geography on completion  $\chi^2(4, N = 37) = 5.43, p = .246$ . All of

the University of Portland and the international school of nursing graduates completed the program (See Appendix B, Table 13). There was no significant difference for school of nursing type on completion  $\chi^2(3, N = 37) = 2.93, p = .402$ . The majority of nurses who did not complete the program graduated from an accelerated baccalaureate nursing program (See Appendix B, Table 14). There were no significant differences for two out of the three onboarding assessments on completion. There were no significant differences for the Gregorc Style Delineator self-evaluation on completion  $\chi^2(3, N = 37) = .561, p = .905$ . The majority of nurses who did not complete the program were concrete sequential (See Appendix B, Table 15). There were no significant differences for Gemstone personality self-evaluation on completion  $\chi^2(4, N = 37) = 1.71, p = .789$ . The majority of nurses who did not complete the program were diamond personality (See Appendix B, Table 16).

**Table 18**

*Non-Statistically Significant Crosstabulation Gamma of Nurse Author Characteristic Level of Experience v. TTP Completion*

		Value	Asymptotic Standard Error <sup>a</sup>	Approximate T <sup>b</sup>	Approximate Significance
Ordinal by Ordinal	Gamma	.097	.442	.217	.828
	N of Valid Cases	37			

*Non-Statistically Significant Chi-Square Tests of Nurse Author Characteristics v. TTP Completion*

		Value	df	Asymptotic Significance (2-sided)
Unit	Pearson Chi-Square	2.139 <sup>a</sup>	3	.544
	N of Valid Cases	37		
SON Geography	Pearson Chi-Square	5.433 <sup>a</sup>	4	.246
	N of Valid Cases	37		
SON Program Type	Pearson Chi-Square	2.933 <sup>a</sup>	3	.402
	N of Valid Cases	37		
Gregorc	Pearson Chi-Square	.561 <sup>a</sup>	3	.905
	N of Valid Cases	37		
Gemstone	Pearson Chi-Square	1.708 <sup>a</sup>	4	.789
	N of Valid Cases	37		

### *Content Analysis 1*

There were significant differences in the total count of reflection entries in the document and the total tally of quotes with the nine words or phrases based on professional standards on completion. More reflection entries were counted (9.97 versus 5.17:  $t(35) = -2.329$ ,  $p = .026$ ) and a higher use of the nine words or phrases based on professional standards were tallied (12.84 versus 4.50;  $t(35) = -2.274$ ,  $p = 0.29$ ) on completion.

Self-management (16 percent) was the most frequent word or phrase used. Self-directed (13 percent) and task (13 percent) were second, while ownership (12 percent) was third. Role (11 percent), risk identification (10 percent), and decision-making (9 percent) filled the middle

frequency, while stability identification (8 percent) and scope of practice (8 percent) were the words or phrases used with the lowest frequency.

**Table 19**

*Crosstabulation of Total Reflection Entries v. TTP Completion*

Count	TTP Completion		Total	
	0	1		
Total	1-5	4	7	11
Reflection Entries	6-10	2	14	16
	11-15	0	5	5
	16-20	0	5	5
Total		6	31	37

**Table 20**

*Crosstabulation of Nine Words or Phrases Based on Professional Standards v. TTP Completion*

Count	TTP Completion		Total	
	0	1		
Nine Words or Phrases	0-5	4	5	9
	6-10	1	8	9
	11-15	1	9	10
	16-20	0	4	4
	21-25	0	2	2
	26-30	0	1	1
	31-35	0	2	2
Total		6	31	37

**Table 21**

*Group Statistics Statistically Significant Independent T-Test of Reflection Entries and Nine Words or Phrases Based on Professional Standards v. TTP Completion*

	TTP Completion	N	Mean	Std. Deviation	Std. Error Mean
Total	0	6	5.17	2.927	1.195
Reflection Entries	1	31	9.97	4.848	.871
Nine Words or Phrases	0	6	4.50	5.468	2.232
	1	31	12.84	8.595	1.544

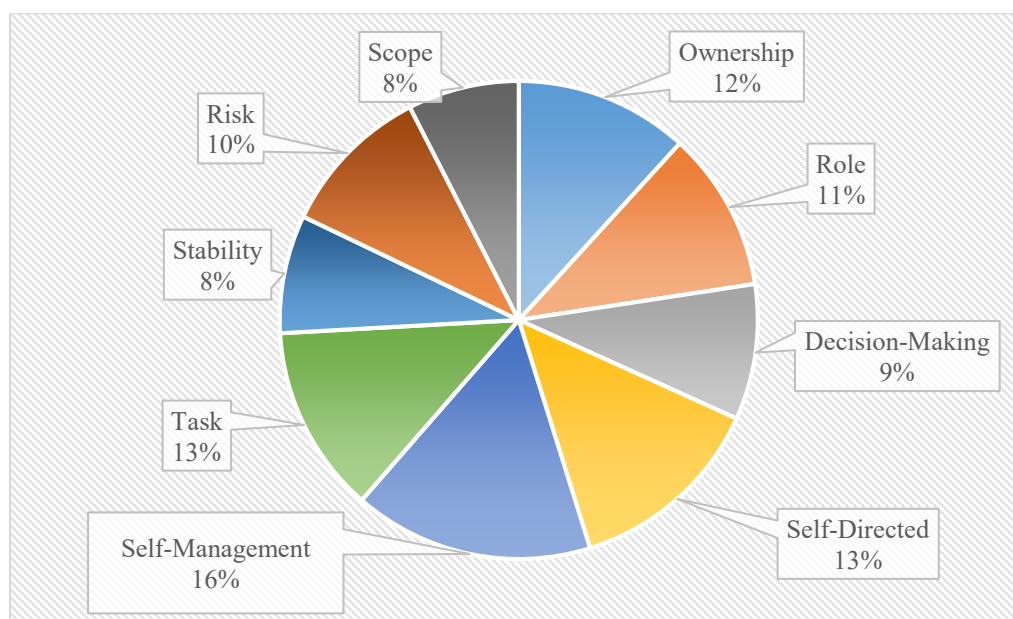
**Table 22**

*Statistically Significant Independent T-Test of Reflection Entries and Nine Words or Phrases Based on Professional Standards v. TTP Completion*

		t-test for Equality of Means					95% Confidence Interval of the Difference	
		t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Total Reflection Entries	Equal variances assumed	-2.329	35	.026	-4.801	2.062	-8.986	-.616
Nine Words or Phrases	Equal Variances Assumed	-2.274	35	.029	-8.339	3.667	-15.783	-.895

**Graph 1**

Total Tally of Quotes with the Nine Words or Phrases by Percentage

**Content Analysis 2**

There were significant differences for self-direction (1.77 versus .33;  $t(35) = -2.03$ ,  $p = .050$ ) on completion. Twenty-three of the thirty-one nurses (74 percent) who completed the program wrote about self-direction (See Appendix B, Table 23). Twenty-six percent of the nurses who completed the program had zero reflections about the self-direction word or phrase.

The themes about self-direction included documentation, self-management, time-on-task, goals, comfort, improvement, interprofessional communication, priorities, preceptor relationship, patient assignment selection, performance, barriers, engagement, vulnerability, asking questions, and rounds.

The Nurse 2 quote demonstrated adapting to doing, knowing and thinking to sort data for intervening; commitment to enculturation, professionalism, role socialization, self-management, and teamwork; strengths in assessment, big picture, communication, confidence, delegation, determination of stability and risk, generalist foundation to develop specialty practice and psychomotor as described in the literature. Finally, the quote confirmed a connection to the framework with examples of a commitment to capacity development, goals to adjust to managing brittleness tradeoffs, developing resilience through lessons learned, and improved responsiveness to unanticipated situations to resume safe practice and decrease risk. During weeks 3-4, Nurse 2 who did complete the program wrote,

“Prior to the arrival of the admit, I discussed with my preceptor my desire to participate in the admission process and practice some of the skills that I had learned in simulation. I cared for a stable pair independently. Caring for these patients allowed me to practice time-management skills, prioritization, and workflow organization. Be more assertive about taking opportunities to fulfill my learning needs. Continue to study hemodynamics, advanced respiratory, and ICU-specific neuro information. Work with a slightly less stable pair. To accomplish my learning goals, I plan on talking through my thought processes with my preceptor for initial feedback on prioritization and my care plan. Becoming faster with the hands-on skills will involve repetition, so I plan on taking as many opportunities as I can to work on the skills that I am less efficient in performing.”



One out of the six nurses who did not complete the program wrote about self-direction only twice in their reflection (See Appendix B, Table 23). The Nurse 17 quote demonstrated concrete thinking with a focus on technology that led to missing the big picture and an inability to sort data to intervene and manage workload pressure; gaps in delegation, determination of stability and risk and prioritization; and weak generalist and specialty-population foundation as described in the literature. Finally, the quote confirmed a connection to the framework with examples of a lack of commitment to capacity development, exceeding the brittleness boundary resulting in an inability to manage tradeoffs, failure to adapt to trends, and underperformance. During weeks 0-2, Nurse 17 who did not complete the program wrote, “The beginning of my shift has been probably the most hectic because I don’t have a concrete plan and feel like I’m not clustering care as effectively as I can.”

**Table 24**

*Group Statistics for Statistically Significant Independent T-Test of Nurse Author*

*Characteristic Self-Direction v. TTP Completion*

	TTP Completion	N	Mean	Std. Deviation	Std. Error Mean
Self-Direction	No	6	.33	.816	.333
	Yes	31	1.77	1.687	.303

**Table 25**

*Statistically Significant Independent T-Test of Nurse Author Characteristic Self-Direction v.*

*TTP Completion*

		t-test for Equality of Means						
		t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
							Lower	Upper
Self-Directed	Equal variances assumed	-2.03	35	.050	-1.44	.710	-2.88	.001

**Content Analysis 3**

**Self-management.** There were no significant differences for self-management ( $t(35) = -1.56, p = .128, p = 0.28$ ), role ( $t(35) = -1.95, p = .128, p = .059$ ), ownership ( $t(35) = -1.837, p = .075, p = .075$ ), and stability identification ( $t(35) = -1.743, p = .090, p = .090$ ) on completion. However, the results demonstrated a difference in the right direction. Nurses who completed the program had more quotes about self-management (2.03 versus 1.00). Twenty-six of thirty-one nurses (84 percent) who completed the program wrote about self-management (Appendix B, Table 26). Sixteen percent of the nurses who completed the program had zero reflections about the self-management word or phrase. The themes included overwhelmed, time management, apprehension, imposter syndrome, insecure, frustration, safety, enculturation, role socialization, confidence, self-care, work-life balance, confidence, comfort, feedback, resource utilization, pride, self-evaluation, goals, identity, anxiety, nervousness, meals and breaks, normalization, expectations, disorganization, the valley of despair, strengths, abilities, pace, and wellness.

The Nurse 13, 1 and 19 quotes demonstrated adapting to doing, knowing and thinking to sort data for intervening, workload pressure and reality shock; commitment to enculturation, professionalism, role socialization, self-management, teamwork; strengths in assessment, the big picture, confidence, communication, determination of stability and risk, generalist and specialty-population practice, prioritization, psychomotor, time on task as described in the literature. Finally, the quote confirmed a connection to the framework with examples of adapting to trends by mobilizing resources that support resilience and minimize brittleness, developing resilience through lessons learned, goals to adjust to managing brittleness tradeoffs, improved responsiveness to unanticipated situations to resume safe practice and decrease risk, leveraging generalist experience and increasing specialty-population capacity.

During weeks 3-4, Nurse 13 who did complete the program wrote,

“I didn’t take my lunch until 1600 the first day and this was a BIG mistake for me. I recognized that I was having difficulty concentrating and unable to learn and did not feel safe as I wasn’t able to think clearly. This all contributed to me feeling overwhelmed, which then made it even more difficult to focus. I communicated this to my preceptor and now I know what my limits are and that I need to listen to my body especially during this period of processing a sometimes overwhelming amount of information. My brain is on overdrive with new information and I know that this is just the beginning, yet, on the other hand, I love learning and derive pleasure when I actually understand something or can come up with rationale on my own, which I’m starting to do more and more. I’m getting better at knowing my physical/mental limits and making sure to eat regularly throughout my shift even if I can’t take an actual break and deferring learning opportunities if I’m not in a space to actually learn from them.”

During weeks 11-12, Nurse 1 who did complete the program wrote,

“Feeling a bit apprehensive about moving to nights, especially since my last couple of patients were very challenging. Writing it now, it doesn’t seem too busy, but it took 2.5 nurses (I don’t count myself a fully functional ICU nurse yet) to get the patient going and stable. I have confidence that I will eventually be able to take more complicated patients, and everything will become easier as I get more confident and my flow is more fluid. I know it’s time for me to go to nights, it just seems like it crept up so fast! I excited to meet the night team and find out who my resources are.”

During weeks 17-18, Nurse 19 who did complete the program wrote,

“I had so many people doing things for me that sometimes I didn’t have a task role but I was making sure that the main interventions that we’re ultimately going to positively impact the patient was happening. I think just going forward I need to learn to be a little kinder on myself. I know we talked about this during the program but it is harder to practice. Especially as an experienced nurse from a different specialty. I was comfortable in my previous specialty and it will take a while and a lot more practice before I have that feeling again.”

Four out of the six nurses who did not complete the program wrote about self-management four times in their reflection, and one out of six nurses who did not complete the program wrote about self-management twice in their reflection (See Appendix B, Table 26). The Nurse 37 quote demonstrated concrete thinking with a focus on technology that led to missing the big picture and an inability to sort data to intervene and manage workforce pressure; gaps in assessment, clinical knowledge, critical thinking, delegation, determination of stability and risk, maturity, prioritization; lack of commitment to professionalism, role socialization, and self-

management; weak confidence and generalist and specialty foundation as described in the literature. Finally, the quote confirmed a connection to the framework with examples of exceeding the brittleness boundary resulting in an inability to manage tradeoffs and underperformance. During weeks 0-2, Nurse 37 who did not complete the program wrote,

“I realized how little I learned/remember from nursing school. My confidence level is very low. I am afraid to make mistakes, so I ask a lot of questions before I do anything. My lack of experience with equipment such as ventilators and Alaris infusion pumps makes me a little anxious.”

**Role.** Nurses who completed the program had more quotes about role (1.45 versus .17). Twenty-two out of thirty-one nurses (71 percent) who completed the program wrote about role (See Appendix B, Table 27). Twenty-nine percent of the nurses who completed the program had zero reflections about the role word or phrase. The themes included decision-making, patient-centered care, responsibility, accountability, interprofessional communication, self-management, confidence, comfort, safety, role socialization, delegation, resource utilization, self-direction, team dynamics, and tasks.

The Nurse 15, 3, and 13 quotes demonstrated adapting to doing, knowing, and thinking to sort data for intervening; commitment to enculturation, professionalism, role socialization, self-management and teamwork; and strengths in confidence, psychomotor, and technical skills. Finally, the quote confirmed a connection to the framework with examples of adapting to trends by mobilizing resources that support resilience and minimize brittleness, commitment to capacity development, developing resilience through lessons learned, and improved responsiveness to unanticipated situations to resume safe practice and decrease risk. During weeks 0-2, Nurse 15 who did complete the program wrote,

“I also noticed that there were some significant differences in responsibilities and access as a nurse, including the ability to access medications, sign off on medications with another nurse, acknowledge orders, and others. I asked questions to get a better understanding of my role, differences from being a student, and to start thinking through priorities and plans for patient care and workflow. I am feeling like I am aware of responsibilities but actually putting them into practice, balancing responsibilities, and responding to changes in patient condition (and subsequent changes in care and day planning) are areas I can focus on in the next weeks as I get more used to the unit.”

During week 3-4, Nurse 3 who did complete the program wrote,

“This was my first week practicing independently reporting my patient’s status during team rounding. The group can be a little intimidating but I’ve learned that everyone on the team is incredibly accommodating and if they feel you missed a piece of information they’d like to know about, they’ll just ask.”

During week 3-4, Nurse 13 who did complete the program wrote,

“Incorporating myself more into team discussions about my patients during rounds and beyond, getting to know providers more. Speaking up when I know something isn’t best practice. I’ve been doubting myself about certain best practices thinking that other nurses with more experience probably just know better than I do, but I can be more assertive in addressing behaviors that aren’t in line with our policies and best practices in a supportive and respectful way.”

One out of the six nurses who did not complete the program wrote about role once in their reflection (See Appendix B, Table 27). The Nurse 17 quote demonstrated an inability to sort data to intervene and missing the big picture; gaps in critical thinking, determination of

stability and risk; lack of commitment to professionalism; and weak communication, prioritization, and time on task as described in the literature. Finally, the quote confirmed a connection to the framework with examples of an inability to sort information or adapt to trends to mobilize resources to support resilience and minimize brittleness, and exceeding the brittleness boundary resulting in an inability to manage tradeoffs. During weeks 3-4, Nurse 17 who did not complete the program wrote,

“Planning out my day at the beginning of shift needs some work, especially when it comes to clustering care in the first two hours of my shifts. I feel as though instead of giving myself some time to read through the charts after report and prioritize and plan each patient’s day out, I tend to just jump right in. This causes me to ineffectively cluster care and has me constantly in and out of the patient’s room when I could’ve spent some time planning and just entered the patient’s room once and completed a multitude of different tasks. Working on this balance will benefit both the patient and myself as I am minimizing interrupting them during their restful times, but I am also decreasing my time spent back and forth between the patient’s rooms because I forgot to complete a task or do an assessment.”

**Ownership.** Nurses who completed the program had more quotes about ownership (1.55 versus .33). Twenty out of thirty-one nurses (65 percent) who completed the program wrote about ownership (See Appendix B, Table 28). Thirty-five percent of the nurses who completed the program had zero quotes about the ownership word or phrase. The themes included self-direction, learning from mistakes, feedback integration, resource utilization, decision-making, stability identification, self-management, interprofessional communication, fundamental and foundational knowledge development, and the scope of practice.

The Nurse 23 quote demonstrated a commitment to role socialization as described in the literature. Finally, the quote confirmed a connection to the framework with examples of improved responsiveness to unanticipated situations to resume safe practice and decrease risk. During weeks 0-2, Nurse 23, who did complete the program, wrote,

“An important experience or insight for me that day was my role socialization. It was easy to slip into the student nurse role and that is what I initially identified with. During rounds on a patient, my preceptor had to step away. It was time for the nurse to present the patient and all of a sudden, all eyes were on me. I realized my badge did not say “student nurse” but “RN” and that no one knows that I am “just orienting.” I was the nurse and everyone now sees me in that role no matter how new I am. I cannot hide behind my inexperience but need to step up into the role of the “RN” and develop my practice. I need to work on the balance of owning this role and the insight when I have reached the limit of my experience and need to ask for support. The rest of the day I practiced being proactive about the next steps in patient care”.

One out of the six nurses who did not complete the program wrote about ownership twice in their reflection (See Appendix B, Table 28). The Nurse 17 quote demonstrated an inability to sort data to intervene and missing the big picture; gaps in critical thinking and determination of stability and risk; lack of commitment to professionalism; and weak communication and prioritization. Finally, the quote confirmed a connection to the framework with examples of an exceeding the brittleness boundary resulting in an inability to manage tradeoffs; the gap in responsiveness to unanticipated situations to resume safe practice and decrease risk; inability to develop resilience through lessons learned, sort information or adapt to trends to mobilize



resources to support resilience and minimize brittleness; and lack of commitment to capacity development. During weeks 0-2 and 5-6. Nurse 17, who did not complete the program wrote,

“I learned that when a plan of care is not clear and I am left confused, it is okay to reach out to the team and express your concerns openly. Because I reached out to the team, I felt like we were able to appropriately implement a better plan of care with fewer unknowns and it made my day significantly less stressful, especially when balancing working with another patient.”

**Stability identification.** Nurses who completed the program had more quotes about stability identification (1.06 versus .17). Sixteen of thirty-one nurses (52 percent) who completed the program wrote about stability identification (See Appendix, Table 29). Forty-eight percent of the nurses who completed the program had zero reflections about the stability identification word or phrase. The themes included confidence, acuity, workflow, plan “B”, decompensation, assessment, monitoring, trends, documentation, alarms, decision-making, ethics, scope, delegation, and time-on-task.

The Nurse 8 quote demonstrated adapting to doing, knowing, and thinking to sort data for intervening; commitment to professionalism and role socialization; and strengths in assessment, big picture, confidence, critical thinking, delegation, determination of stability and risk, and prioritization as described in the literature. Finally, the quote confirmed a connection to the framework with examples of adapting to trends by mobilizing resources that support resilience and minimize brittleness, developing resilience through lessons learned, goals to adjust to managing brittleness tradeoffs, and improved responsiveness to unanticipated situations to resume safe practice and decrease risk. During weeks 7-8, Nurse 8 who did complete the program wrote,

“When receiving a report from the night nurse I noticed at least 3 data points that indicated the patient was getting worse (elevated PA pressures, hypotension, low CI, not tolerating BiPAP at times) and had an inclination that the patient would further decline during our shift. While assessing the patient that morning I noticed she seemed uncomfortable and asked if she felt like she needed to throw up, but she denied feeling sick to her stomach. Mentally, I added anti-emetics to my list of needed orders for rounds and continued my assessment. Shortly after, I was shooting cardiac numbers when the patient vomited into her bi-pap mask. I sat the patient up and suctioned her while the preceptor helped get the provider in the room. The team decided to intubate. I finally felt that my situational awareness was able to expand while caring for this particular patient. We had a lot of helpers and I was able to look around the room and ensure all tasks that needed to be completed were getting done while also delegating when the provider called out a new order.”

One out of the six nurses who did not complete the program wrote about stability identification once in their reflection (See Appendix, Table 29). The Nurse 17 quote demonstrated an inability to manage workload pressure and reality shock, and missing the big picture; gaps in assessment, critical thinking, delegation, determination of stability and risk and prioritization; lack of commitment to professionalism and role socialization; weak communication, generalist and specialty foundation, psychomotor, technical and time-on-task as described in the literature. Finally, the quote confirmed a connection to the framework with examples of exceeding the brittleness boundary resulting in an inability to manage tradeoffs, the gap in responsiveness to unanticipated situations to resume safe practice and decrease risk, inability to adapt to trends by mobilizing resources that support resilience and minimize

brittleness and development of resilience through lessons learned, lack of commitment to capacity development, and underperformance. During weeks 5-6, Nurse 17 who did not complete the program wrote,

“Sometimes when the day gets busy, it’s easier to forget to re-evaluate your patient’s pain who is nonverbal, isn’t on sedation but is in a deep sedative-like state and does not respond to such stimuli. Also, I’ve noticed I sometimes forget to chart bedside swallow exam even though the patient has an NG tube, especially in stroke patients, it is something I need to remember to chart on during my first assessment.”

**Table 30**

*Group Statistics for Statistically Significant Independent T-Test of Nurse Author Characteristics v. TTP Program Completion*

	TTP Completion	N	Mean	Std. Deviation	Std. Error Mean
Self-Management	No	6	1.00	.632	.258
	Yes	31	2.03	1.581	.284
Role	No	6	.17	.408	.167
	Yes	31	1.45	1.588	.285
Ownership	No	6	.33	.816	.333
	Yes	31	1.55	1.567	.281
Stability Identification	No	6	.17	.408	.167
	Yes	31	1.06	1.237	.222

**Table 31**

*Statistically Significant Independent T-Test of Nurse Author Characteristics v. TTP Completion*

		t-test for Equality of Means						
		t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
							Lower	Upper
Self-Management	Equal variances assumed	-1.56	35	.128	-1.032	.661	-2.375	.310
Role	Equal variances assumed	-1.95	35	.059	-1.285	.659	-2.624	.054
Ownership	Equal variances assumed	-1.84	35	.075	-1.215	.662	-2.558	.128
Stability Identification	Equal variances assumed	-1.74	35	.090	-.898	.515	-1.944	.148

#### **Content Analysis 4**

There were no significant differences for risk identification ( $t(35) = -1.42, p = .165$ ), task ( $t(35) = -.898, p = .376$ ), scope of practice ( $t(35) = -1.19, p = .243$ ), and decision-making ( $t(35) = -.791, p = .434$ ) between nurses who completed the program and nurses who did not complete the program.

**Risk identification.** Nurses who completed the program had more quotes about risk identification (1.39 versus .50). Nineteen of thirty-one nurses (61 percent) who completed the program wrote about risk identification (See Appendix B, Table 32). Thirty-nine percent of the nurses who completed the program had zero reflection about the risk identification word or phrase. The themes included bedside report, hand-off, continuity of care, the big picture, plan “B”, goals, priorities, safety, trends, decision-making, resource utilization, rounds, self-direction,

role socialization, care plan, pattern recognition, care coordination, pace, alarms, safety check, and chain of resolution.

The Nurse 10 and 14 quotes demonstrated adapting to doing, knowing and thinking to sort data for intervening, workload pressure and reality shock; commitment to professionalism, role socialization and stability and risk; and strengths in assessment, analyzing data and underlying causes to sort information for intervention, the big picture, clinical knowledge, confidence, critical thinking, delegation, knowledge, generalist foundation to develop specialty practice and prioritization. Finally, the quotes confirmed a connection to the framework with examples of adapting to trends by mobilizing resources that support resilience and minimize brittleness; commitment to capacity development, developing resilience through lessons learned, goals to adjust to managing brittleness tradeoffs, and improved responsiveness to unanticipated situations to resume safe practice and decrease risk. During weeks 0-2, Nurse 10 who did complete the program wrote,

“I am trying not to get too sucked down into my blinders and be able to participate in the plan of care on a big picture level as well-what are the major concerns for each patient, risk assessments, and keeping my safety checks in mind. Go over the major risks for each patient for today, goals of care, and safety issues before diving into the workflow for the day.”

During weeks 5-6, Nurse 14 who did complete the program wrote,

“I told my preceptor I felt responsible for the extravasation because I didn’t advocate for a central line. In the future I will at least bring it to the provider’s attention, that norepinephrine is running peripherally, to really assess risk/benefit. Is it more beneficial to put in a central line for someone on vasopressors for several hours, or is it riskier? It’s

also hard to know how long someone will need vasopressors for, despite how healthy they are at baseline. I filled out a PSI for this; if there are systems in place that are putting patients at risk, we should be doing something about it. I think another factor that contributed to the patient's norepinephrine needs was our inability to give him fluids. He was randomly selected for a study, which prevented us from giving him more fluid. I think that's what he really needed and could have gotten off of vasopressors sooner and perhaps avoided the extravasation all together. It was a good learning experience, but in reflecting on this situation, both the use of PIV for norepinephrine and study seems like the system and patient safety issues."

One out of the six nurses who did not complete the program wrote about risk identification once in their reflection and twice in their reflection (See Appendix B, Table 32). The Nurse 4 quote demonstrated an inability to manage reality shock and workload pressure, missing the big picture; gaps in assessment, critical thinking, delegation, determination of stability and risk and prioritization; lack of commitment to professionalism, role socialization; and weak communication, generalist and specialty foundation psychomotor, technical and time-on-task. Finally, the quote confirmed a connection to the framework with examples of exceeding brittleness boundary with the inability to manage tradeoffs, failure to adapt to trends, lack of commitment to capacity development, and underperformance. During weeks 5-6, Nurse 4 who did not complete the program wrote,

"My opportunities for growth: Taking a step back and looking at the big picture, learning abbreviations, communicating my thinking in the blog, time management, identifying risks, collaborating/participating more in interdisciplinary rounds, and taking earlier

breaks. LTM reflection from feedback: I will recognize potential risks and interventions that I will take to mitigate them.”

**Task.** Nurses who completed the program had more quotes about tasks (1.55 versus 1.00). Twenty-three out of thirty-one nurses (55 percent) who completed the program wrote about tasks (See Appendix B, Table 33). Forty-five percent of the nurses who completed the program had zero reflections about the task word or phrase. The themes included pace, the chain of resolution, self-direction, self-evaluation, interprofessional communication, the big picture, feedback, improvement, target fixation, delegation, situational awareness, prompting, knowing limitations, resource utilization, stability, acuity, psychomotor, comfort, confidence, clustering care, care coordination, mistakes, time-on-task, and goals.

The Nurse 6 quote demonstrated commitment to professionalism and role socialization; strengths in big picture, confidence, communication, critical thinking, determination of stability and risk, prioritization, psychomotor, and technical as described in the literature. Finally, the quote confirmed a connection to the framework with examples of adapting to trends by mobilizing resources that support resilience and minimize brittleness, commitment to capacity development, developing resilience through lessons learned, and goals to adjust to managing brittleness tradeoffs. During weeks 17-18, Nurse 6 who did complete the program wrote,

“Although my time-on-task is not perfect, it continues to improve, giving me more time to focus on the greater picture of the patient's situation. I need to continue to work on utilizing help when I am getting behind on tasks so that I make sure I’m taking the moments to pause and see the whole situation.”

One out of the six nurses who did not complete the program wrote about task twice in their reflection and four times in their reflection (See Appendix B, Table 33). The Nurse 4 and

17 quotes demonstrated concrete thinking with a focus on technology that led to missing the big picture; inability to manage reality shock and workload pressure; gaps in assessment, critical thinking, delegation, determination of stability and risk and prioritization; lack of commitment to professionalism, role socialization, self-direction; and weak communication and generalist and specialty foundation. Finally, the quotes confirmed a connection to the framework with examples of exceeding brittleness boundary with the inability to manage tradeoffs, failure to adapt to trends, the gap in responsiveness to unanticipated situations to resume safe practice and decrease risk, lack of commitment to capacity development, and underperformance. During weeks 5-6, Nurse 4 who did not complete the program wrote,

“Several things came up that I was asked to work on: First, I will delegate some tasks to my preceptor. Second, I will take a step back from being task-oriented, and look more at the big picture of my patients. Opportunities: Delegating some tasks to my preceptor. During the shift, I took the time to look at the big picture and had delegated some tasks to my preceptor, such as checking CBGs and providing pain medication. Overall it was a good day, and I was able to implement some of the feedback that I had received from the leadership team.”

During weeks 3-4, Nurse 17 wrote,

“Clustering care is still a struggle of mine. While I know some of these are time-sensitive and I cannot always cluster care, I seemed a little too task-oriented at times and missed opportunities to check regularly. Instead, I seemed to sit down and remember-oh yeah I should've while I was in there or I hear the ventilator beeping because my patient is coughing and thinking-hmm I probably should've suctioned him earlier while I was in there anyway because of his consistently large, thick secretions. I just feel like I was



running around at times and could've more effectively utilized my time and kept my patient more comfortable by clustering certain non-time sensitive tasks with my time-sensitive ones.”

**Scope of practice.** Nurses who completed the program had more quotes about scope of practice (.94 versus .33). Fifteen out of thirty-one nurses (52 percent) who completed the program wrote about the scope of practice (See Appendix, Table 34). Forty-eight percent of the nurses who completed the program had zero reflections about the scope of practice word or phrase. The themes included comfort, interprofessional communication, plan of care, knowledge transfer, care coordination, the chain of resolution, SBAR, goals of care, patient education, patient-centered care, resource utilization, and assessment.

The Nurse 8 quote demonstrated adapting to doing, knowing and thinking to sort data for intervening; commitment to professionalism and role socialization, and strengths in assessment, analyzing data and underlying causes to sort information for intervention, the big picture, confidence, clinical knowledge, critical thinking, delegation, determination of stability and risk, prioritization, psychomotor, and time on task. Finally, the quote confirmed a connection to the framework with examples of adapting to trends by mobilizing resources that support resilience and minimize brittleness, developing resilience through lessons learned, goals to adjust to managing brittleness tradeoffs, and improved responsiveness to unanticipated situations to resume safe practice and decrease risk. During weeks 5-6, Nurse 8 who did complete the program wrote,

“The big picture for this patient was to maintain her trajectory on the Whipple pathway. Ways I can do this within my own independent scope of practice include; communicating/coordinating with all the teams, mobilizing the patient, encouraging

incentive spirometer use, offering non-pharmacological methods for pain/nausea relief, advocating for nutrition and repositioning to help protect the skin, offering oral hygiene, and providing education. Some ways I progressed the patient's care with my dependent scope of practice included; discontinuing Foley and central line and pharmacological intervention for pain/nausea management.”

Two out of the six nurses who did not complete the program wrote about the scope of practice once in their reflection (See Appendix, Table 34). The Nurse 37 reflection demonstrated concrete thinking with a focus on technology that led to missing the big picture, an inability to sort data to intervene and manage of workload pressure; failure to analyze data and underlying causes to sort information for intervention; gaps in assessment, clinical knowledge, critical thinking, delegation, determination of stability and risk, maturity and prioritization; lack of commitment to enculturation, maturity, professionalism, role socialization and self-management; and weak generalist and specialty foundation. Finally, the quote confirmed a connection to the framework with examples of exceeding the brittleness boundary resulting in an inability to manage tradeoffs, the gap in responsiveness to unanticipated situations to resume safe practice and decrease risk, inability to adapt to trends by mobilizing resources that support resilience and minimize brittleness and development of resilience through lessons learned, lack of commitment to capacity development, and underperformance. During weeks 0-2, Nurse 37 who did not complete the program wrote,

“Despite his condition, the patient was fairly bossy and kept insisting on things he wanted such as to sit up, or lay back, etc. At one point, he looked at me and asked me to sit him up more. I asked the support nurse if that was ok at the time, and he said that in situations when we try to keep people alive, their requests are secondary to us if they contradict the

treatment plan. I had a little “aha” moment. In nursing school, it is drilled into us that we need to listen to our patients’ needs and that patients know their bodies best, so listen to what they tell you and act on it. This was a completely different situation though. In this situation, the patient did not know what was best for him and his requests would have aggravated his condition, so the support nurse explained it to the patient that we cannot sit him up more because we have more serious tasks at hand and sitting up would make things worse for him. I will not let the patient’s comfort needs sway me or distract me from life-saving tasks.”

**Decision-making.** Nurses who completed the program had more quotes about decision-making (1.10 versus .67). Seventeen out of thirty-one nurses (55 percent) who completed the program wrote about decision-making. Forty-five percent of the nurses who completed the program had zero reflections about the decision-making word or phrase. The themes included prioritization, clinical judgment, assessment, documentation, stability and acuity, confidence, care coordination, mistakes, preceptor relationship, resource utilization, tasks, interprofessional communication, bedside report, handoff, zooming out, the big picture. The Nurse 13 quote demonstrated adapting to workload pressure and reality shock; commitment to enculturation, professionalism, role socialization, self-management, teamwork; strengths in assessment, big picture, confidence, communication, determination of stability and risk, and prioritization. Finally, the quote confirmed a connection to the framework with examples of nearing brittleness with decision making and failure to respond to unanticipated disturbances which lead to underperformance but recognizing the importance of adapting to trends to mobilize resources to minimize risk. During weeks 0-2, Nurse 13 who did complete the program wrote,

“Though both patients had multiple requests early on, I tried to eventually reorient myself to an organized method of reviewing their charts and determining their priority nursing problems for the day. Incorporate academic and practical knowledge into the development of sound clinical judgments and effective decision making. I’ve been instructed so many times the importance of using an interpreter when caring for non-English speaking patients, and this thought occurred to me several times, but I obviously relied too heavily on the report given to me at handoff instead of seeing for myself whether an interpreter changed her assessment and our communication with her. I feel that I failed in caring for this patient because I did not give her an ideal opportunity to communicate with us and I think about how frustrating that would be if I were in her place, sitting in a hospital bed with a tracheotomy, already unable to physically speak and then being left with caregivers who speak in a foreign language. This was a lesson to me to be more proactive in the future about utilizing interpreter services, no matter my unfamiliarity with it or the increased time that it takes.”

One out of the six nurses who did not complete the program wrote about decision-making once and three times in their reflection (See Appendix B, Table 35). The Nurse 4 and 17 quote demonstrated inability to sort data to intervene and missing the big picture, manage workload pressure and reality shock; gaps in assessment, critical thinking, delegation, determination of stability and risk, prioritization; lack of commitment to professionalism, teamwork; and weak communication, and time on task. Finally, the quote confirmed a connection to the framework with examples exceeding the brittleness boundary resulting in an inability to manage tradeoffs; the gap in responsiveness to unanticipated situations to resume safe practice and decrease risk; inability to adapt to trends by mobilizing resources that support resilience and minimize

brittleness and development of resilience through lessons learned; lack of commitment to capacity development; and underperformance. During the weeks 3-4, Nurse 4 who did not complete the program wrote,

“My preceptor encouraged me to take on both patients, and so I did and quickly realized how many tasks, prioritization decisions, interruption management decisions, assessments, and charting that I had to do all at once.”

During weeks 7-8, Nurse 17 wrote,

“While I understand the general overview of some vasoactive drugs, I feel as though I don’t fully understand the difference between some (choosing one over another). When a dopamine drip was ordered versus epinephrine, I realized I didn’t entirely understand at a microscopic level what receptors these drugs target, specifically dopamine and want to spend more time understanding the differences between the various drugs as well.”

**Table 36**

*Group Statistics for Statistically Significant Independent T-Test of Nurse Author Characteristics v. TTP Program Completion*

	TTP Completion	N	Mean	Std. Deviation	Std. Error Mean
Risk Identification	No	6	.50	.837	.342
	Yes	31	1.39	1.476	.265
Task	No	6	1.00	1.673	.683
	Yes	31	1.55	1.312	.236
Scope	No	6	.33	.516	.211
	Yes	31	.94	1.209	.217
Decisions-Making	No	6	.67	1.211	.494
	Yes	31	1.10	1.221	.219

**Table 37**

*Statistically Significant Independent T-Test of Nurse Author Characteristics v. TTP Completion*

		t-test for Equality of Means						
		t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
							Lower	Upper
Risk Identification	Equal variances assumed	-1.418	35	.165	-.887	.626	-2.157	.383
Task	Equal variances assumed	-.898	35	.376	-.548	.611	-1.789	.692
Scope	Equal variances assumed	-1.188	35	.243	-.602	.507	-1.631	.427
Decisions-Making	Equal variances assumed	-.791	35	.434	-.430	.544	-1.534	.674

**Outcomes*****Comparison of Findings to Literature and Expected Results***

In summary, the purpose of this project is to improve the transition to practice by conducting a content analysis of existing nurse reflections through a resilience engineering framework to identify early indicators of maximizing or exceeding limits of resilience and underperformance for practice readiness. The aims were to (1) describe the early indicators of nurse resilience and underperformance, and (2) compare themes of resilience and underperformance risk based on variation in eleven nurse author characteristics. Nurses who completed the program demonstrated higher knowing, owning and performing professional role based on the O2P nurse leader evaluation, clinical specialty-population knowledge based on the BKAT-9r, reflective practice based on a higher count total reflection entries and the total tally of quotes with the nine words or phrases based on professional standards, self-direction, and cost-

effective orientation hours. Nurses who did not complete the program demonstrated preparation to practice and practice readiness gaps based on the nurse author characteristics and content analysis.

The findings are in alignment with the literature for the transition to practice, preparation-practice gaps, and practice readiness. Nurses who completed the program demonstrated higher orientation to professional role (O2P) nurse leader evaluations, BKAT-9r scores, the total count of reflections entries, the total tally of quotes with the nine words or phrases based on professional standards, the tally of quotes for the self-directed word or phrase, and higher orientation hours which were components of the TTP Program. The findings confirm these six variables were discriminating. Additionally, cohort, external or internal hire, interview score, words or phrases of ownership, role, self-management, and stability identification were not statistically different but demonstrated differences in the right direction. These findings could also be early indicators for maximizing or exceeding limits of resilience and underperformance for practice readiness with a larger sample.

The project findings about nurse completion confirm the description of preparation to practice as described in the literature. Nurses who completed the program demonstrated more skill and commitment to preparation to practice indicators compared to the nurses who did not complete the program, endorsing early indicators for maximizing or exceeding limits of resilience and underperformance for practice readiness. Preparation to practice indicators include skill in assessment, clinical knowledge, communication, critical thinking, delegation, leveraging concrete thinking with a focus on technology to avoid missing the big picture, prioritization, psychomotor, technical and time-on-task; and commitment to enculturation, professionalism,

quality improvement, self-management to manage reality shock and workload pressure, sorting data to intervene based on early warning signs of patient decompensation and teamwork.

The project findings about nurse completion also confirm the description of practice readiness as described in the literature. Nurses who completed the program demonstrated more skill and commitment to practice readiness indicators as compared to the nurses who did not complete the program, endorsing early indicators for maximizing or exceeding limits of resilience and underperformance for practice readiness. The nurse quotes with the nine words or phrases based on professional standards, inconsistently described aspects of generalist practice and lacked depth in demonstrating specialty-population practice capabilities of adapting to doing, knowing, and thinking. The nurses who completed the program demonstrated more skill and commitment to clinical practice, cognitive, clinical and professional capability with self-efficacy, data analysis, identification of underlying causes, information sorting to intervene with appropriate responses, maturity, and role socialization compared to the nurses who did not complete the program endorsing early indicators for maximizing or exceeding limits of resilience and underperformance for practice readiness.

The findings are in alignment with the framework. The resilience engineering framework was effective in analyzing the results and appears to successfully differentiate nurse completion. Nurses who completed the program demonstrated more skill and commitment to adapting to trends to mobilize resources to support resilience while minimizing brittleness, commitment to capacity development, developing resilience through lessons learned, improved responsiveness to unanticipated disturbances that lead to underperformance to resume safe practice and decrease risk, recognized their performance was nearing or exceeding its limits, and set goals to adjust to unpredictable situations while managing to avoid trade-offs that are observed as variation in



practice endorsing early indicators for maximizing or exceeding limits of resilience and underperformance for practice readiness.

### ***Differences between Expected and Observed Results***

**Nurse author characteristics.** The variability in the interview scores and onboarding assessment components were unexpected. The increased variability with the interview scores may be related to gaps in interrater reliability. The variability in the onboarding assessment components may be related to variation in validated tools. However, BKAT-9r and Gregorc are both validated tools and only the BKAT-9r demonstrates a significant difference for nurse completion.

**Reflections entries and quotes.** Although the results demonstrated a difference in the right direction, it was not expected that self-management would not make a significant difference to nurse completion, especially as the most frequent word or phrase used in the reflections. It was not expected that the task phrase would be one of the highest words or phrases based on professional standards in the reflections because it is not as heavily weighted in the curriculum. The low frequency of stability identification and scope of practice was also not expected due to how highly the concepts are weighted in the curriculum.

### ***Impact of Project on System Including Costs***

The impact of the project is identifying early indicators of maximizing or exceeding limits of resilience and underperformance for practice readiness based on nurse author characteristics and commitment and skill in reflection and professional practice. Maximizing the integration of the literature, framework and findings could have an impact for training nurse leaders and the transition to practice team on recruiting new hires for specific strengths around knowing, owning, and performing professional practice, fundamental and foundational

knowledge, reflection, self-direction, stability and risk identification, decision-making, and scope of practice. Furthermore, identifying early indicators for nurses at risk or with strengths for practice readiness could also save the organization costs in orientation hours, benefits, human capital, and overhead expenses. The organization could evaluate a nurse at risk and decide to invest additional resources or terminate based on findings.

### **Practice Related Recommendations**

#### **Limitations**

The smaller nurse sample size may have limited statistical power. The sample was one specialty-population in the organization. Three interview scores (8 percent) were missing from the data set, potentially misrepresenting the findings.

#### **Conclusion**

The project results are promising to determine practice readiness to sustain and optimize transition to practice. The project identified key characteristics that discriminate practice readiness to sustain organizational recruitment, hiring, practice evaluation development, practice measurement tools, transition to practice costs, academic and practice partnerships, retention and turnover, patient safety, workforce resilience and wellness, and standards for practice readiness.

### **Summary of Next Steps**

The first next step would be to disseminate the findings to the organization. This would facilitate a dialogue with nurse leaders and stakeholders about developing a strategy on professional development for evaluating potential nurse recruits, new hires, and employee skills skill and commitment to knowing, owning, and performing professional practice, fundamental and foundational knowledge, reflection, self-direction, stability and risk identification, decision-making, and scope of practice. Secondly, the organization should identify the best tools to

evaluate recruits and candidates during the hiring process. Thirdly, the organization should apply these measures to discriminate successful completion through progressive practice evaluation for early readiness and warning signs as an outcome for the transition to practice. Lastly, the organization should consider the implications of the results for the current and future transition to practice programs.

## Appendix A

The TTP Program roadmap for expansion of tracks from 2014-2021. Each of these tracks includes a combination of the three possible programs (1) Residency Program, (2) Specialty Fellowship Program, and (3) Fellowship Program.

1. TTP Critical Care – Adult (CCA) Track
  - Intensive Care Unit (5 units) = Launched 2014
  - Emergency Department (1 unit with 4 care areas) = Launched 2017
  - PeriAnesthesia (2 units with 3 care areas each) = Launched 2017
2. TTP Operating Room - Adult & Pediatric (ORAP) Track
  - Operating Room – Adult (2 units) = Launched 2018
  - Operating Room – Pediatric (1 unit) = Launched 2018
3. TTP Multi-Procedural Care Unit – Adult (MSPUA) Track
  - Procedural Care Unit (2 unit) = Launched 2018
  - Recovery Float Pool (6 units) = Launched 2019
  - Catheterization Lab (1 unit) = Partial Launch 2019
  - Interventional Radiology (1 unit) = TBD
  - GI Procedural Area (2 units) = TBD
4. TTP Acute Care, Intermediate Care & Emergency Department Observation – Adult (AIEA) Track
  - Emergency Department Observation (2 units) = Launched 2019
  - Cardiovascular Intermediate Care (2 units) = Launched 2019
  - General Surgery (2 units) = Proposed 2020
  - Orthopedics (1 unit) = Proposed 2020

- Neurosciences (2 units) = Proposed 2020
  - Medicine (3 units) = Proposed 2020
  - Oncology (2 units) = Proposed 2020
  - Trauma (2 units) = Proposed 2020
  - Float Pool = Proposed 2020
  - Ambulatory (1 units) = Proposed 2020
5. TTP Critical Care – Pediatric (CCP) Track
- Neonatal Intensive Care Unit (1 unit) = Proposed 2020
  - Pediatric Intensive Care Unit (1 unit) = Proposed 2020
  - Emergency Department (1 unit with 3 care areas) = Proposed 2020
  - PeriAnesthesia (1 unit with 3 care areas) = Launched 2017
  - Sedation (1 unit) = Launched 2019
6. TTP Acute Care & Intermediate Care – Pediatric (AIP) Track
- Medicine, Surgical & Oncology (3 unit) = TBD
  - Float Pool = TBD
7. TTP Obstetrics (OB) Track
- Labor & Delivery (1 unit) = TBD
  - Mother-Baby (1 unit) = TBD
8. TTP Ambulatory – Adult (AA) Track = TBD
9. TTP Ambulatory – Pediatric (AP) Track = TBD
10. TTP Ambulatory – Oncology (AO) Track = TBD

## Appendix B

**Table 1**

*Crosstabulation of Nurse Author Characteristic O2P Leader Evaluation v. TTP Completion*

	Count	TTP Completion		Total
		No	Yes	
O2P Evaluation	Plus/Plus = 1	0	20	20
	Plus/Minus = 2	0	7	7
	Minus/Plus = 2	6	4	10
Total		6	31	37

**Table 2**

*Crosstabulation of Nurse Author Characteristic BKAT-9r Score v. TTP Completion*

		TTP Completion		Total
		No	Yes	
BKAT	60-65	1	0	1
	66-69	1	4	5
	70-75	3	10	13
	76-79	1	4	5
	80-85	0	7	7
	86-90	0	3	3
Total		6	28	34

**Table 3**

*Descriptive Statistics for Frequency of Nurse Author Characteristic Orientation Hours v. TTP Program Completion*

TTP Completion		Frequency	Percent	Valid Percent	Cumulative Percent
No	450	2	33.3	33.3	33.3
	500	2	33.3	33.3	66.7
	600	1	16.7	16.7	83.3
	800	1	16.7	16.7	100.0
	Total	6	100.0	100.0	
Yes	500	2	6.5	6.5	6.5
	550	2	6.5	6.5	12.9
	600	10	32.3	32.3	45.2
	650	5	16.1	16.1	61.3
	700	5	16.1	16.1	77.4
	750	5	16.1	16.1	93.5
	800	2	6.5	6.5	100.0
	Total	31	100.0	100.0	

**Table 6**

*Crosstabulation of Nurse Author Characteristic Cohort (Quarter) v. TTP Completion*

Count	TTP Completion		Total
	No	Yes	
Summer 2018 = 1	1	10	11
Cohort (Quarter) Winter 2019 = 3	1	13	14
Spring 2019 = 4	4	8	12
Total	6	31	37

**Table 7**

*Descriptive Statistics Comparing Nurse Author Characteristic Interview Score v. TTP Completion*

TTP Completion		Number of Nurses	Minimum	Maximum	Mean	Std. Deviation
No	Interview Score	5	12.60	15.70	14.18	1.36
Yes	Interview Score	29	11.00	18.00	15.18	1.82

**Table 8**

*Crosstabulation of Nurse Author Characteristic External or Internal Type v. TTP Completion*

Count	TTP Completion		Total
	No	Yes	
Type External = 1	6	22	28
Internal = 2	0	9	9
Total	6	31	37

**Table 9**

*Group Statistics for Non-Statistically Significant (Right Direction) Independent T-Test of Nurse Author Characteristics v. TTP Program Completion*

	TTP Completion	N	Mean	Std. Deviation	Std. Error Mean
Cohort (Quarter)	No	6	3.33	1.211	.494
	Yes	31	2.61	1.202	.216
Interview Score	No	5	14.18	1.355	.606
	Yes	29	15.18	1.829	.340
External or Internal Hire	No	6	1.00	.000	.000
	Yes	31	1.29	.461	.083

**Table 11**

*Crosstabulation of Nurse Author Characteristic Unit v. TTP Completion*

Count	TTP Completion		Total
	No	Yes	
7A MICU = 1	2	6	8
7N NSICU = 2	2	8	10
8C TSICU = 3	0	8	8
12K CVICU = 4	2	9	11
Total	6	31	37

**Table 12**

*Crosstabulation of Nurse Author Characteristic Level of Experience v. TTP Completion*

Count	TTP Completion		Total
	No	Yes	
New Graduate Nurse = 1	3	14	17
Experience Nurse = 2	3	17	20
Total	6	31	37



**Table 13**

*Crosstabulation of Nurse Author Characteristic School of Nursing Geography v. TTP Completion*

Count	TTP Completion		Total
	No	Yes	
OHSU = 1	1	8	9
University of Portland = 2	0	8	8
School of Nursing Geography Linfield = 3	2	2	4
Out of State = 4	3	12	15
International = 5	0	1	1
Total	6	31	37

**Table 14**

*Crosstabulation of Nurse Author Characteristic School of Nursing Program Type v. TTP Completion*

Count	TTP Completion		Total
	No	Yes	
Baccalaureate = 1	1	13	14
School of Nursing Program Type Accelerated Baccalaureate = 2	4	16	20
RN to BSN = 3	1	1	2
International = 4	0	1	1
Total	6	31	37

**Table 15**

*Crosstabulation of Nurse Author Characteristic Onboarding Assessment Gregorc Self-Evaluation v. TTP Completion*

Count	TTP Completion		Total
	No	Yes	
Concrete Sequential = 1	3	16	19
Concrete Random = 2	0	1	1
Abstract Sequential = 3	1	5	6
Abstract Random = 4	2	6	8
Total	6	28	34

**Table 16**

*Crosstabulation of Nurse Author Characteristic Onboarding Assessment Gemstone Self-Evaluation v. TTP Completion*

Count	TTP Completion		Total
	No	Yes	
Diamond = 1	3	16	19
Sapphire = 2	2	4	6
Gemstone Turquoise = 3	1	5	6
Emerald = 4	0	2	2
Opal = 5	0	1	1
Total	6	28	34

**Table 17**

*Group Statistics for Non-Statistically Significant Independent T-Test of Nurse Author Characteristics v. TTP Program Completion*

	TTP Completion	N	Mean	Std. Deviation	Std. Error Mean
Unit	No	6	2.33	1.366	.558
	Yes	31	2.65	1.112	.200
Level of Experience	No	6	1.50	.548	.224
	Yes	31	1.55	.506	.091
SON Geography	No	6	3.17	1.17	.477
	Yes	31	2.68	1.33	.238
SON Program Type	No	6	2.00	.632	.258
	Yes	31	1.68	.702	.126
Gregorc	No	6	2.33	1.51	.615
	Yes	28	2.04	1.29	.244
Gemstone	No	6	1.67	.816	.333
	Yes	28	1.86	1.18	.223

**Table 23**

*Crosstabulation Word or Phrase Self-Directed v. TTP Completion*

Count	TTP Completion		Total
	No	Yes	
0	5	8	13
1	0	7	7
2	1	9	10
3	0	3	3
4	0	1	1
5	0	1	1
6	0	2	2
Total	6	31	37

**Table 26**

*Crosstabulation Word or Phrase Self-Management v. TTP Completion*

Count	TTP Completion		Total
	No	Yes	
0	1	5	6
1	4	10	14
2	1	5	6
3	0	3	3
4	0	6	6
5	0	2	2
Total	6	31	37

**Table 27**

*Crosstabulation of Word or Phrase Role v. TTP Completion*

	Count	TTP Completion		Total
		No	Yes	
Role	0 Reflections	5	9	14
	1 Reflection	1	11	12
	2 Reflections	0	5	5
	3 Reflections	0	4	4
	5 Reflections	0	1	1
	7 Reflections	0	1	1
	Total	6	31	37

**Table 28**

*Crosstabulation Word or Phrase Ownership v. TTP Completion*

	Count	TTP Completion		Total
		No	Yes	
Ownership	0 Reflections	5	11	16
	1 Reflections	0	6	6
	2 Reflections	1	6	7
	3 Reflections	0	4	4
	4 Reflections	0	2	2
	5 Reflections	0	2	2
Total	6	31	37	

**Table 29**

*Crosstabulation Word or Phrase Stability Identification v. TTP Completion*

	Count	TTP Completion		Total
		No	Yes	
Stability Identification	0	5	15	20
	1	1	5	6
	2	0	6	6
	3	0	4	4
	4	0	1	1
Total	6	31	37	

**Table 32**

*Crosstabulation Word or Phrase Risk Identification v. TTP Completion*

Count	TTP Completion		Total
	No	Yes	
0	4	12	16
1	1	7	8
2	1	4	5
3	0	5	5
4	0	2	2
5	0	1	1
Total	6	31	37

**Table 33**

*Crosstabulation Word or Phrase Task v. TTP Completion*

Count	TTP Completion		Total
	0	1	
0	4	8	12
1	0	9	9
2	1	6	7
3	0	5	5
4	1	3	4
Total	6	31	37

**Table 34**

*Crosstabulation Word or Phrase Scope v. TTP Completion*

Count	TTP Completion		Total
	No	Yes	
0	4	16	20
1	2	7	9
2	0	3	3
3	0	4	4
4	0	1	1
Total	6	31	37

**Table 35**

*Crosstabulation of Word or Phrase Decision-Making v. TTP Completion*

Count	TTP Completion		Total
	No	Yes	
0 Reflections	4	14	18
1 Reflections	1	6	7
2 Reflections	0	6	6
3 Reflections	1	4	5
4 Reflections	0	1	1
Total	6	31	37

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