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Retention of the Newly Licensed Registered Nursing Workforce Post-Coronavirus (COVID-19): Establishing a Trauma-Informed Wellness Program,
*The Registered Nurse Residency Script for the Future (RNRx)*
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Submitted to the Faculty
Yale University School of Nursing

In Partial Fulfillment
of the Requirements for the Degree
Doctor of Nursing Practice

MaryEllen Hope Kosturko, MAHSM, BSN, R.N., CENP
May 20, 2022
Retention of the Newly Licensed Registered Nursing (NLRN) Workforce Post-COVID-19

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Retention of the Newly Licensed Registered Nursing (NLRN) Workforce Post-COVID-19

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To my mom for your unending support and to my family, friends, advisors, and many colleagues who assisted me along the way, thank you for being my village.

To my children, Danielle and Ryan, I cherish you for your love, encouragement, and the faith you place in me. You are my inspiration(s)!

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I dedicate my doctoral studies to the loving memory of my dad, who remains a significant influence and role model in my life.
Retention of the Newly Licensed Registered Nursing (NLRN) Workforce Post-COVID-19

Abstract

Retention of newly licensed registered nurses (NLRNs) is crucial to the future success of a thriving nursing workforce. It is well-established that most NLRNs experience stress as they transition from school to work environments leading some to leave the workforce or nursing altogether within their first two years post-graduation. The novel Coronavirus virus (Covid-19) pandemic exacerbated this problem as NLRNs experienced increased stress, fear, exhaustion, uncertainty, and dissatisfaction, further threatening the future of the nursing workforce. The aim of this project was to develop and implement a trauma-informed wellness program in an acute care inpatient hospital, *The Registered Nurse Residency Script for the Future (RNRx)*, to support the NLRNs well-being post-exposure to the traumatic experience of caring for patients with the novel Covid-19 virus. The 6-week RNRx program consisted of three program elements: (1) a Nurse-peer Buddy System; (2) Wellness Check-ins/Decompression huddles and; (3) Celebration/Compassion Circles. Thirty six participants completed the Secondary Traumatic Stress Scale at the beginning and immediately following the end of the 6 week program. Pre and post program results for the overall STSS score were compared using a Welch one-tailed unpaired t test on the R foundation Statistical tool. The results show a statistically significant improvement in the overall well-being of all NLRN participants immediately after RNRx program completion (p= 0.004). The RNRx program can be easily and cost-effectively scaled across this large New England academic health system of five acute care hospitals and in other inpatient environments to support nurse well-being post-trauma. As the program is scaled, long term measurement of program impact on nurse retention is recommended.
# Table of Contents

Abstract .................................................................................................................. iv

List of Abbreviations ............................................................................................... viii

**Chapter 1** ........................................................................................................... 1

Introduction ............................................................................................................. 1

Problem Statement ................................................................................................. 5

Significance ............................................................................................................. 7

**Chapter 2** ........................................................................................................... 9

Review of Literature and Search Strategy .............................................................. 9

Synthesis of the Literature .................................................................................... 10

Differing Needs Related to Work Satisfaction among Various Generations........ 11

Turnover Intent as it Relates to Work Satisfaction, Stress, and Wellness............. 12

Fundamental Concepts to Support NLRNs and Improve Retention.................... 15

Nurse Residency Program’s (NRPs) ....................................................................... 17

Nurse Stress and Novel Coronavirus (COVID-19) ................................................ 18

Project Model ........................................................................................................ 19

Supporting Theoretical Frameworks .................................................................... 21

Environmental Scan/Organizational (SWOT) Analysis ....................................... 22
Retention of the Newly Licensed Registered Nursing (NLRN) Workforce Post-COVID-19

Overall Goal and Aims

Chapter 3

Methods

Approach

Goals and Aims

Chapter 4

Results

STSS Scale Score Results

Qualitative Session Feedback

Chapter 5

Discussion and Conclusions

Limitations

Conclusions

Business and Financial Implications

Implications of the Project

Human Subject Institutional Review Board (IRB) Consideration

Project Timeline

Leadership Immersion
Retention of the Newly Licensed Registered Nursing (NLRN) Workforce Post-COVID-19

References ................................................................................................................. 47

Appendices .................................................................................................................. 59

A Prisma ..................................................................................................................... 59

B Evidence Table ....................................................................................................... 60

C1 Project Model ....................................................................................................... 61

C2 Nursing Theory Model(s) ..................................................................................... 62

D Strengths, Weaknesses, Opportunities, Threats (SWOT) Analysis Chart... 64

E1 Secondary Traumatic Stress Scale (STSS) .......................................................... 65

E2 Secondary Traumatic Stress Scoring (STS) .......................................................... 66
Retention of the Newly Licensed Registered Nursing (NLRN) Workforce Post-COVID-19

<table>
<thead>
<tr>
<th>List of abbreviations</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACSW</td>
<td>Academy of Certified Social Workers</td>
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<tr>
<td>AHRQ</td>
<td>Agency for Healthcare Research and Quality</td>
</tr>
<tr>
<td>AMC</td>
<td>Academic Medical Center</td>
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<tr>
<td>ANCC</td>
<td>American Nurses Credentialing Center (Magnet)</td>
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<tr>
<td>AONL</td>
<td>American Organization for Nursing Leadership</td>
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<tr>
<td>APRN</td>
<td>Advanced Practice Registered Nurse</td>
</tr>
<tr>
<td>ARDS</td>
<td>Acute Respiratory Distress Syndrome</td>
</tr>
<tr>
<td>BSL</td>
<td>Bedside Leader</td>
</tr>
<tr>
<td>CAUTI</td>
<td>Catheter Associated Urinary Tract Infection</td>
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<tr>
<td>CDC</td>
<td>Centers for Disease Control and Prevention</td>
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<tr>
<td>CEAP</td>
<td>Certified Employee Assistance Personnel</td>
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<tr>
<td>CHA</td>
<td>Connecticut Hospital Association</td>
</tr>
<tr>
<td>CISD</td>
<td>Critical Incident Stress Debriefing</td>
</tr>
<tr>
<td>CLABSI</td>
<td>Central Line Associated Blood Stream Infection</td>
</tr>
<tr>
<td>CMO</td>
<td>Chief Medical Officer</td>
</tr>
<tr>
<td>CMS</td>
<td>Centers for Medicaid and Medicare Services</td>
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<tr>
<td>CNE</td>
<td>Chief Nurse Executive</td>
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Retention of the Newly Licensed Registered Nursing (NLRN) Workforce Post-COVID-19

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<th>Acronym</th>
<th>Description</th>
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<tr>
<td>CNO</td>
<td>Chief Nursing Officer</td>
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<tr>
<td>CNTC</td>
<td>Clinical Nurse Transition-to-Practice Coach (Pilot Program)</td>
</tr>
<tr>
<td>Covid-19</td>
<td>Novel Coronavirus (COVID-19)</td>
</tr>
<tr>
<td>CT</td>
<td>Connecticut</td>
</tr>
<tr>
<td>CVI</td>
<td>Clinical Variance Indicator</td>
</tr>
<tr>
<td>CWO</td>
<td>Chief Wellness Officer</td>
</tr>
<tr>
<td>DN</td>
<td>Delivery Network</td>
</tr>
<tr>
<td>DNP</td>
<td>Doctoral of Nursing Program</td>
</tr>
<tr>
<td>DSM V criteria</td>
<td>Acute Stress Disorder</td>
</tr>
<tr>
<td>EFR</td>
<td>Employee Family Resource</td>
</tr>
<tr>
<td>GE HMA</td>
<td>General Electric Health Management Academy</td>
</tr>
<tr>
<td>HAC</td>
<td>Hospital Acquired Condition</td>
</tr>
<tr>
<td>HAI</td>
<td>Hospital Acquired Infection</td>
</tr>
<tr>
<td>HCAHPS</td>
<td>Hospital Consumer Assessment of Healthcare Providers and Systems</td>
</tr>
<tr>
<td>HPPD</td>
<td>Nursing Hours Per Patient Day</td>
</tr>
<tr>
<td>IAA</td>
<td>Intrusion, Avoidance, Arousal</td>
</tr>
<tr>
<td>IHI</td>
<td>Institute for Healthcare Improvement</td>
</tr>
<tr>
<td>IOM</td>
<td>Institute of Medicine</td>
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Retention of the Newly Licensed Registered Nursing (NLRN) Workforce Post-COVID-19

<table>
<thead>
<tr>
<th>Abbreviation</th>
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<tbody>
<tr>
<td>IRB</td>
<td>Institutional Review Board</td>
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<tr>
<td>LPC</td>
<td>Licensed Professional Counselor</td>
</tr>
<tr>
<td>MS</td>
<td>Master of Science</td>
</tr>
<tr>
<td>NCLEX</td>
<td>National Council Licensing Exam</td>
</tr>
<tr>
<td>NDNQI</td>
<td>National Database of Nursing Quality Indicators</td>
</tr>
<tr>
<td>NLRN</td>
<td>Newly Licensed Registered Nurse</td>
</tr>
<tr>
<td>NRP</td>
<td>Nurse Residency Program</td>
</tr>
<tr>
<td>OT</td>
<td>Overtime</td>
</tr>
<tr>
<td>PDSA</td>
<td>Plan-Do-Study-Act</td>
</tr>
<tr>
<td>PL</td>
<td>Project Lead</td>
</tr>
<tr>
<td>PPE</td>
<td>Personal Protective Equipment</td>
</tr>
<tr>
<td>PPM</td>
<td>Professional Practice Model</td>
</tr>
<tr>
<td>PSI</td>
<td>Patient Safety Indicator</td>
</tr>
<tr>
<td>PTSS</td>
<td>Post-Traumatic Stress Symptoms</td>
</tr>
<tr>
<td>PTSD</td>
<td>Post-Traumatic Stress Disorder</td>
</tr>
<tr>
<td>QI</td>
<td>Quality Improvement</td>
</tr>
<tr>
<td>R Project</td>
<td>R Project Software for Statistical Computing</td>
</tr>
<tr>
<td>RN</td>
<td>Registered Nurse</td>
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Retention of the Newly Licensed Registered Nursing (NLRN) Workforce Post-COVID-19

RNRx Registered Nurse Residency Script for the Future

ROI Return on Investment

S-B-A-R Situation-Background-Assessment-Recommendation

STS Secondary Traumatic Stress

STSS Secondary Traumatic Stress Scale

SWOT Strengths-Weaknesses-Opportunities-Threats

TO Turnover

US United States

VBP Value Based Purchasing

WELD ©Wellness-Engagement-Leadership-Development Program

WHO World Health Organization
Chapter 1

Introduction

Newly licensed registered nurses (NLRNs) are key to the future success of a thriving nursing workforce. The definition of NLRN varies by employer and in the literature but is typically noted to be one-to-two (1-2) years post-graduation (Nurse.com, 2010). Research shows that prior to the Pandemic of Novel Corona Virus 2019 (Covid-19) NLRN millennials represent approximately 30% of the United States (US) nursing workforce. Moreover 40%-60% of Registered Nurse’s (RNs) older than 40 will retire within the next 15 years adding work related stress on NLRNs. Lack of seasoned nurses for support and oversight, as well as staffing depletion, also add to the NLRNs workload (Apostolidis, et al., 2006; O’Hara, et al., 2019).

Before Covid-19 NLRNs experienced an inconsistency between their idyllic school setting and “real world” work conditions during their first 18 months post-graduation. Moreover, amid the pandemic, NLRNs may experience post-secondary traumatic stress. Secondary traumatic stress is defined as a constellation of symptoms comprising intrusion, avoidance and arousal related to the indirect trauma exposure of caring for traumatized patients (Jacobs, 2019). The term was first coined by Bride in 2004 in more general context, and is of interest here due to the presumed traumagenic impact of the recent Covid-19 pandemic on nurses and the healthcare system in general.

This secondary traumatic stress can add to and amplify outcomes such as stress and dissatisfaction, job turnover, or ultimately leaving the profession (Yu, et al., 2018). This correlates to current hospital baseline survey results of those nurses with the highest turnover in this NLRN population. For the purposes of this DNP Project Proposal, NLRNs are defined as
Retention of the Newly Licensed Registered Nursing (NLRN) Workforce Post-COVID-19

those RNs who passed the National Council Licensing Exam (NCLEX) for the first time and are practicing in an inpatient hospital setting one to two years post Covid-19.

Approaching the pandemic, The Institute of Medicine (IOM) report, “The Future of Nursing: Leading Change, Advancing Health” (Campaign for Action, 2013), recommends the implementation of a formal transition to practice program for NLRNs to support their competent development and to improve quality outcomes and patient satisfaction. Studies of such residency programs reinforce the IOMs recommendations (Church, et al., 2018). Turnover rate for the NLRN populations in the US ranges widely (17.2%- to- 40%) (Nursing Solutions, Inc., 2016). Those younger than 24 years old often leave their job in the first two years of work (Apostolidis, et al., 2006; Church, et al., 2018; Dols, et al., 2019), with an average cost of turnover of a RN ranging between $37,700 to $58,400. As a result, hospitals stand to lose $5.2 million to $8.1 million annually in NLRN turnover costs (NSI, National Staffing Report, 2016). A large New England healthcare system has preliminary findings from a recent employee engagement survey which reveal that resilience/wellness is lowest and turnover is highest in younger (ages 21-29 year old), least tenured (6 months-5 year) RNs, thus resembling national statistics.

Aside from these findings, the rapid descent of Covid-19 on healthcare workers with its ever-changing dynamics in patient care, patient safety, and mortality markedly increased job-related stress. Likewise, NLRNs experienced a further divide between graduating job ideals to this extreme reality. As a novel virus, there is little recorded case study data to show the stress-related outcomes of Covid-19 trauma on our NLRNs in the workforce. This pandemic is unlike anything experienced in recent times with its extensive reach, inconsistent severity profile, sudden onset of symptoms, and associated deaths. To compound the situation, the typical protective or ameliorating factors for this kind of stress are absent or severely limited as the
Retention of the Newly Licensed Registered Nursing (NLRN) Workforce Post-COVID-19

comforts of home and friends are replaced with isolation and social distancing in the case of Covid-19. Recent news reports a decline in mental well-being in the healthcare frontline workers and lives lost to suicide, as well as an increased incidence of Post-Traumatic Stress Disorder (PTSD) and secondary traumatic stress (Tend Academy, 2022). In examining the impact of other large traumatic events on frontline workers, such as Hurricane Katrina in the Gulf Coast region of New Orleans and a Turkish Tsunami, research shows the stress on nurses is real, damaging, and if not recognized, long-lasting. In the case of Hurricane Katrina, as far out as five years past the event, nurses could still feel the effects of PTSD (Park, 2011).

With respect to the unprecedented workforce strains brought on by the crisis, many retired RNs returned to the workforce to help aid in the Covid-19 surge. However, as quickly as the aging workforce came to aid in the emergency, they will depart once again leaving a nursing shortage in our foreseeable future (Flinkman, et al., 2013). Clearly, there is imminent need to take care of our NLRN workforce.

Connecting retention to outcomes, Hospital Acquired Conditions (HACs) Reduction Program (CMS.gov, 2020) supports hospitals work towards improving patient safety to decrease HACs, for example, pressure injuries, surgical site infections, medication errors, and infections. Nationally, the HAC Reduction Program saves Medicare, conservatively, $350M (CMS.gov, 2020). In conversation with the Interim Chief Medical Officer (CMO) of a New England hospital, (personal communication, February 14, 2020), there are approximately 5000 acute care hospitals in the US, and the HAC penalty is worth 1% of Medicare billing. For a 400-500 licensed bed, safety net hospital in Connecticut (CT), for example, the translation of that is an approximate penalty of $800K - $900K annually. One quarter of the nation’s hospitals receive the HAC penalty. Most hospitals are much smaller than 400-licensed beds, but the penalty is
Retention of the Newly Licensed Registered Nursing (NLRN) Workforce Post-COVID-19
disproportionately applied to larger, major academic medical and teaching centers. In comparing the data of all US hospital patient safety indicators (PSIs) from 2016-2018, affecting fiscal year 2020 budgets, a complicated PSI score is shared, stating whether the hospital lost dollars through the program. However, that dollar amount is not shared publically (Data.Medicare.gov, 2020). Utilizing the stated US-wide penalty at $350M, from CMS.gov, with CT caring for roughly 1% or 1.2% of the US population, the statewide total hospitals’ penalty might be estimated at $4M - $5M across the state. However, given that there are a number of large hospitals in the State of CT it may be up to twice that amount at $10M. Further, if one includes all “Pay for Performance” dollars from Medicare penalties, one could add up the Readmissions, HAC, and Value Based Penalties (VBPs). For the state of CT alone, this might be estimated between $20M - $30M annually (personal communication, February 14, 2020).

In discussions with the Executive Medical Director of Clinical Operations at a New England hospital, (personal communication, February 14, 2020), a critical variable in this equation and the correlation of concern is nursing turnover in hospitals. Deficiencies in safety and quality are seen through Clinical Variance Indicator’s (CVIs), namely, variations in patient care that lead to suboptimal outcomes and, therefore, increased cost and decreased revenue to hospitals. Examples of this include falls with fractures, hospital acquired pressure injuries, and diabetes (hypoglycemia and/or hyperglycemia). CVIs are unnecessary and just one variation from optimal outcomes that can incur an additional cost to the hospital of $2,400-$7,500 per stay, with a 5.4 day average length of stay increase. This can be related to nursing turnover and the resulting staff shortage. Variables exist when comparing nurse staffing and nursing hours per patient day (HPPD) to certain nursing sensitive indicators, such as pressure ulcers, catheter associate urinary tract infections (CAUTI), and patient falls. Much research exists on nurse
Retention of the Newly Licensed Registered Nursing (NLRN) Workforce Post-COVID-19

staffing relationship to mortality, yet findings with respect to the relationship between nurse staffing and the aforementioned nursing sensitive indicators have differed across studies, and in general, results are inconclusive (He, J., 2016).

Prior to arrival of the Covid-19 virus, creation of a Clinical Nurse Transition-to-practice Coach (CNCTC) Pilot Program was tailored for the needs and demographics of newly hired RNs within a large New England academic health system. The pilot program’s objective was a proposed solution for the issues of NLRN retention, quality of care, patient satisfaction, and savings to the healthcare system. The goal was to successfully transition NLRNs into practice with just-in-time coaching from a clinical expert/resource RN. The specific strategy was to foster NLRN socialization, work satisfaction and wellness to professional practice, while developing critical thinking skills with assistance. As a result of the heavy impact of the 2020 Covid-19 pandemic on NLRNs, the CNCTC Program alone will not be enough. This crisis has spurred an urgent need to construct a Trauma-Informed Wellness Program, i.e., the Registered Nurse Residency Script for the Future (RNRx), for all RNs, with a specific emphasis on NLRN well-being.

**Problem statement**

NLRN turnover is a significant problem for hospitals in the US, generating an imperative to improve retention of NLRNs at the hospital bedside. Currently NLRNs constitute 30% of the workforce and are experiencing high levels of burnout, stress and turnover (Apostolidis, et al., 2006; O’Hara, et al., 2019). NLRNs are turning over at rates of up to 40% within their first two years of employment which, in turn, is stressing our healthcare institutions in a multitude of ways inclusive of increased costs, decreased quality, increased mortality, and reduced employee
Retention of the Newly Licensed Registered Nursing (NLRN) Workforce Post-COVID-19

satisfaction because of inadequate staff-to-patient ratios (Church, et al., 2018). Understanding how to retain NLRNs will be vital to guarantee work and patient satisfaction, with optimal patient outcomes into the future (Dols et al., 2019; O’Hara, et al., 2019).

Given the reality shock for NLRNs entering the workforce during a global pandemic, unprecedented turnover rates, and upcoming large scale baby boomer retirements, creation of comprehensive programs, inclusive of critical thinking scaffolding, professional development and targeted support are essential (Medas, et al., 2015). The arrival of the Covid-19 virus and ensuing crisis placed emphasis on the stress of the frontline workers, including nurses and specifically, NLRNs. While there is data supporting the increased risk of post-traumatic stress in first responders participating in disasters, there is little-known data specific to trauma in nurses, including NLRNs (Park, 2011).

Resources supporting self-care are outlined by the Centers for Disease Control and Prevention (CDC) and World Health Organization (WHO), but the healthcare establishment must also include wellness programs to assist their NLRN workforce. Witnessing large numbers of Covid-19 viral patients in the already stressed frontline environment, of nurses, particularly, NLRNs, supports the addition of a wellness program to existing NLRN transition to care models. One model used for this is “Critical Incident Stress Debriefing” (CISD), which has long been provided for professionals, such as disaster workers, who are exposed to traumatic and high-stress events. CISD is considered an effective strategy to promote wellness and recovery.” (Harrison and Wu, 2017).

The trauma-informed wellness program, the Registered Nurse Residency Script for the Future (RNRx), proposed here aims to increase retention of the highly vulnerable and dwindling NLRN workforce in this current time of crisis.
Retention of the Newly Licensed Registered Nursing (NLRN) Workforce Post-COVID-19

This Doctor of Nursing Program (DNP) project developed a trauma-informed wellness program for NLRNs, *The Registered Nurse Residency Script for the Future (RNRx) Program*, in a large urban, New England inpatient hospital setting.

The program, while providing support, coaching, and oversight, placed a unique and newly constructed emphasis on the emotional well-being of NLRNs in the inpatient hospital practice setting. The long term goal is to improve the retention of NLRNs.

**Significance**

There is a link between high RN turnover and deficits in safe, quality care (Press Ganey Report, 2018). High nurse turnover also affects health systems’ financial status directly through recruitment and replacement costs and indirectly through decreased reimbursement rates associated with suboptimal outcomes (Press Ganey Report, 2018). With respect to recruitment and replacement costs (approximately $40,000-60,000 per nurse at an annual loss of approximately 5 and 8 million dollars a year to the nations’ hospitals), each percentage change in nurse turnover, based on those estimates, is worth approximately $335,000 in either direction (Press Ganey Report, 2018). Regarding the reimbursement impact of high RN turnover, increasingly complex payment models are driven by value-based outcomes which are negatively associated with high RN turnover and the associated decrease in quality of patient care.

Pre-pandemic, in response to this significant health care issue of stress-related turnover, retention concerns, and impending RN shortage, the Commission on Collegiate Nursing Education, the Joint Commission, the Institute of Medicine (now The National Academy of Medicine), and a report from the Carnegie Foundation recommend the development of nurse residency program to improve wellness (Sampson, et al., 2019). The Global 2020 Pandemic
Retention of the Newly Licensed Registered Nursing (NLRN) Workforce Post-COVID-19

brought the Covid-19 virus to CT and NY, as epicenters. There was little to no time to react to or plan how healthcare workers would care for individuals acquiring this disease. Within three-month’, the virus swept through our hospitals at a rapid pace, doubling the volume of patients that required care. There were no established protocols or known treatments for this unknown virus. Hospitals and the staff quickly became stressed and exhausted. Then, just as the crisis appeared to wane, a second wave of Covid-19 illness brought an increased volume of patients back to the inpatient setting. With this second wave, and now knowing the progression of the disease-state, nurses grew despondent. Residency programs, alone, would not be enough to safely transition the NLRN from their idyllic school environment to this unfamiliar reality and intensity of the new hospital environment. Newer programs were necessary, fortified with components that addressed the challenges these nurses faced.

While advances in NLRN residency programs may ensure higher levels of RN work satisfaction and preparation to meet increasingly complex and demanding professional duties and roles (IOM, 2011), the continued impact of the Covid-19 pandemic, supported the development of a trauma-informed wellness program to combat the significant emotional distress experienced by the nursing workforce. By instituting such a program, a prominent New England hospital stood to reduce this distress level and gain improvements in NLRN retention rates, along with supporting long-term metric impacts to patient satisfaction, quality of care, and reimbursement rates associated with superior quality outcomes (Press Ganey Report, 2018).
Chapter 2

Review of the literature

Search strategy

An electronic search conducted using Ovid MEDLINE (OVID) and the Cumulative Index to Nursing and Allied Health Literature CINAHL Plus with Full Text. Search strategy terms were initially chosen based on the concept of creating a nurse residency program to assist with retention issues seen in the NLRN. Other terms were chosen to encompass nurse’s response in disaster situations. Identified terms spanned across the following content areas: generational views related to resiliency and workplace expectations, stress and work satisfaction among younger, least tenured nurses, best practice programs for retention, vicarious trauma/secondary traumatic stress, and compassion fatigue or secondary trauma. Combinations of the following terms were searched: resilience OR attitude of health personnel AND young adult/millennial OR intergenerational AND job satisfaction OR personnel turnover AND nursing staff, hospital. Combinations of the following key words/phrases were utilized: staff turnover; newly licensed registered nurse; nursing staff, hospital; new nurses; mentors and nursing staff/hospital; and nurse residency program (NRPs). Other key words and phrases came from interest in: Newly Licensed Registered Nurse (NLRN); NLRN turnover; retention of NLRNs; resilience of NLRNs; reasons for NLRN turnover; impact of NLRN mentoring/residency programs; institute of medicine and NLRN goals; NLRNs and patient satisfaction; NLRNs and quality outcomes, combination of these, and limited to English language.

The searches yielded 817 articles. Duplicate removal and non-relevance by title, yielded 520 for abstract screening. An additional 444 were excluded for non-specific relevance providing
Retention of the Newly Licensed Registered Nursing (NLRN) Workforce Post-COVID-19

76 full-text articles screened for relevance and 56 included for final review (Appendix A, Prisma). 25 articles were included in the Evidence Table (Appendix B).

Synthesis of the literature

Each article provided data enabling categorization into themes: (1) differing needs related to work satisfaction among various generations; (2) turnover intent as it relates to stress, work satisfaction, and wellness in the Newly Licensed Registered Nurse (NLRN); (3) fundamental concepts to support NLRNs and improve retention; (4) Nurse Residency Program’s (NRPs) and their impact; and (5) nurse stress and novel coronavirus (Covid-19). A mix of studies reviewed included quantitative, qualitative, cross-sectional, longitudinal, retrospective correlational, and multiple regression, with various methods such as surveys, experiments, cohort focus groups, and levels of evidence between 2-to-5.

When reviewing studies on the retention of newly licensed registered nurses, there is significant variation across studies, including in quality, setting, sample, financial considerations, and practice parameters. When reviewing traumatic stress and related disorders, in nurses as it relates to disasters, there is little specific data.

Despite this variation in the literature, similarities and insight into the needs of NLRNs were revealed. These similarities include promoting improved wellness, decreasing stress, and assisting with reducing turnover. Additionally, multiple studies provide nurse administrators with evidence of the potential positive return on investment (ROI) of NLRN residency programs as they relate to decreased turnover, for organizations in the US, but little data thus far connects wellness programs to improved NLRN retention.
Retention of the Newly Licensed Registered Nursing (NLRN) Workforce Post-COVID-19

It is only in the past ten years that research and studies on the transition of NLRNs to the workforce, through utilization of NRPs, has become a focal point; and it is only in the past five years that research is beginning to look at nurse stress and turnover. There is a need to expand the literature on the topics of nurse stress and turnover, especially in light of the Covid-19 pandemic health crisis we have experienced most recently, and likely future pandemics or crises impacting health systems.

**Differing needs related to work satisfaction among various generations**

Five articles referenced the importance of appreciating and understanding the different needs of nurses within the various generations (Apostolidis, et al., 2006; Boychuk, et al., 2004; Dols, et al., 2019; O’Hara, et al., 2019; Yu, et al., 2018). Understanding these differences is a fundamental concept to assess stressors, workplace satisfaction, and potential best practice solutions to the healthcare issues of turnover intent and wellness in NLRNs. Dols (2019) emphasized recruitment and retention of RNs as the most significant challenge facing healthcare organizations. Dols (2019) utilized a descriptive, single-center survey study designed to identify factors influencing nurse retention or turnover from the view of different generations. Perceived inability to meet patient needs, which varied by generation, was significantly related to nurse satisfaction $P < .01$ (Dols, et al., 2019). Apostolidis (2006) agreed with Dols (2019) that generation(s) of employees with varying expectations must be understood. Further evidence suggests the need for more cohesiveness in the acute care workplace environment by understanding each generation’s needs (Apostolidis, et al., 2006; Boychuk, et al., 2004; Dols, et al., 2019). Boychuk Duchscher (2004) highlights that an added job stressor is the potential conflict of multiple generations working alongside one another and vying for unique professional
Retention of the Newly Licensed Registered Nursing (NLRN) Workforce Post-COVID-19

ccontributions and competing recognitions. Therefore, in understanding the NLRN generation, needs and values can be leveraged to activate an inclusive plan for ongoing communication and support among the ages (generations) of employees and their employer (Boychuk Duchscher, et al., 2004). For example, several studies found generational links between the need for professional growth, interaction among colleagues, autonomy in decision making, and having support from their supervisor (Bhatti, et al., 2018; Dols, et al., 2019; Fasbender, et al., 2019; O’Hara, et al., 2019). Additionally, these authors found that characteristics among these generations (veterans, baby boomers, generation Xers, and millennials), such as loyalty, optimism, skepticism, and realism, respectively, need to be understood when considering programs to support nurses. (Boychuk Duchscher, et al., 2004).

Results of many studies suggest transitional support, job satisfaction, leadership support, workplace characteristics, and individual factors were strongly associated with turnover intention (Apostolidis, et al., 2006; Boychuk Duchscher, et al., 2004; Dols et al., 2019). The research shows that NLRN millennials represent about 30% of the US workforce, while 40%-60% of RNs older than 40 will retire within the next 15 years, adding stress on the NLRNs (Apostolidis, et al., 2006; O’Hara, et al., 2019). Moreover, studies concur that baby boomer retirements and nurse turnover rates threaten efforts to maintain a stable workforce essential to quality patient care. Understanding how to retain NLRNs is vital to ensure work satisfaction and high-quality patient outcomes into the future (Dols et al., 2019; O’Hara, et al., 2019).

**Turnover intent as it relates to work satisfaction, stress, and resilience/wellness**

NLRNs experience a discrepancy from their ideal and actual work conditions during their first 18 months post-graduation, which can lead to dissatisfaction, turnover from their job, or
Retention of the Newly Licensed Registered Nursing (NLRN) Workforce Post-COVID-19

leaving the profession altogether if they don’t adjust well (Yu, et al., 2018). These NLRNs comprise 30% of the nursing workforce and are more likely to experience burnout, stress, high turnover, and less dedication to their workplace than other counterparts (Apostolidis, et al., 2006; O’Hara, et al., 2019). RN turnover has been relatively well-researched; however, it continues to present itself as a complex issue. The cost of RN turnover goes beyond financials. It leads to heightened pressure on staff to work beyond their contracted hours and often increases use of agency staff (Fasbender, et al., 2018). Despite these undesired effects, before 2004, there was little support for NLRNs within healthcare, leading to large numbers leaving their positions at the cost of $60,000-$96,000 per RN (Sampson, et al., 2019).

Moreover, as reported by Aiken (2002) and Gershon (2007), harmful and even dangerous working environments, including decreased personnel, 12-hour shifts, lack of support, and inadequate collegial nurse-physician relationships have been shown to increase burnout among nurses (Yu, et al., 2018). Evidence goes on to suggest that many NLRNs express dissatisfaction working harder and longer due to higher levels of responsibility and care, as well as the environment in which they deliver that care (Boychuk Duchscher, et al., 2004). Results from multiple research findings within this review indicate that high levels of work stress among NLRNs are linked to undesirable work-related behaviors. Examples include absenteeism, illness, injury, reduced productivity, burnout, and increased turnover intentions as a result of complex, high-acuity work environments (Boychuk, et al., 2004; Fasbender et al., 2018; Yu et al., 2018). Fasbender (2018) emphasizes that job stress has been conceptualized as a feeling of dysfunction due to perceived conditions in the workplace. Yu (2018), and Boychuk (2004) support Aiken et al., (2002) in finding that burnout is a critical factor in nurses’ intention to leave their job.
Significant attrition occurs when disillusioned NLRNs move on to other institutions or leave the profession altogether.

Similarly, in a large retrospective study of 1,500 NLRNs, Church (2018) found that during the NLRN transition into practice, the pressure to provide highly competent and quality care can lead to stress, burnout, and job turnover in the early years post-licensure. Recent surveyed turnover rate among all RN populations in the United States has risen from 16.8% in 2017 to 27.1% in 2022 (Nursing Solutions, Inc., 2022), with reports of up to 40% of NLRNs leaving their job within the first year of employment (Church, et al, 2018; Dols, et al., 2019). In contrast to these findings, Church’s (2018) study revealed that turnover intent at one year from the start of a NLRN residency was low, m=2/6 (SD = 1.36). At two years from the beginning of the residency, 91.7% (n = 1373) of the sample remained employed, whereas only 8.3% (n = 125) had resigned from their organization. Many of the other studies suggest initiatives be created that aim at recruiting and retaining critically thinking, top talent RNs, yet several factors continue to influence a quality workforce negatively (Boychuk Duchscher, et al., 2004; O’Hara et al., 2019). These factors include, but are not limited to, an aging RN workforce, inadequate nursing graduates to meet the workforce demand, and nursing work that is increasingly less satisfying and exhausting (Boychuk Duchscher et al., 2004). O’Hara’s (2019) research further links patient safety and quality outcomes directly to the professional practice environment and work satisfaction. O’Hara’s (2019) study was a secondary analysis utilizing the Professional Practice Work Environment Inventory survey. The average RN age was 29 years. The majority were millennial, females (93%, n=349), from a large Northeast U.S. Magnet hospital (O’Hara et al., 2019). Outcomes of this study, guided by Erickson’s Practice Environment Conceptual Framework (O’Hara, et al., 2019) consists of nine organizational characteristics believed to
enhance nursing practice and improve nurse satisfaction. Similar to other previously mentioned research studies, the generational outcome characteristics include, leadership, autonomy, nurse-physician relations, control over practice, communication, teamwork, conflict management, internal work motivation, and cultural sensitivity (O’Hara, et al., 2019).

**Fundamental concepts to support NLRNs and improve retention**

The concept of wellness or the ability to recover from a stressful situation is a process of returning to proper function and occurs through the support of protective factors post-stress exposure (Yu, et al., 2018). Studies reveal that individuals who overcome a stressful event through wellness, emerge stronger, perform better, and become more self-efficient and confident. Further, being resilient can enhance one's ability to transcend and improve overall job satisfaction (Yu, et al., 2018). Thus, wellness in nurses is expected to mediate the relationships among emotional labor, burnout, and turnover intention (Yu, et al., 2018). Yu (2018) and Perreira (2018) agree that wellness, as coping ability, improves job involvement and lowers stress. Job involvement is the positive attitude of an individual towards their job, which reduces stress, enhances job satisfaction and is assumed to be the positive antipode of burnout (Yu, et al., 2018). In the studies by Yu (2018), Perreira (2018), and Church (2018) results include reduced turnover rates, increased levels of job satisfaction, and increased organizational commitment. In the study by Sampson (2019) a two-group, cluster randomized control trial was conducted using the cognitive behavioral skills building program in a large, Midwestern Academic Medical Center (AMC), accredited nurse residency program (Sampson, 2019). The AMC consists of seven hospitals with greater than 1200 beds, and more than 250 NLRNs participate in the nurse residency program annually. The sample size, 105 NLRNs, of which 93 (89%) participated, most
between 21 and 50 years of age (m=24.5 years). Findings indicate that those who participated in
the residency program significantly improved perceived stress (p=0.022), and had lower anxiety
(p=0.002), and lower depressive symptoms (p=0.004) than participants in the group of NLRNs
who did not participate in the program (Sampson et al., 2019). These findings, coupled with
Church's (2018) results, support the Institute of Medicine's (IOM, 2011) Future of Nursing
report stating that the implementation of a formal transition to practice residency programs for all
NLRNs is recommended to support their competence and confidence while improving the
quality of patient care (Commission on Collegiate Nursing Education, 2015). While these factors
influencing organizational commitment have been studied individually, Church (2018) states a
comprehensive model has yet to be developed. These findings of NLRNs values and needs
provide a starting point for fundamental principles to promote retention, individual growth, and
work satisfaction.

Further, findings in O'Hara's (2019) study demonstrate that supportive leadership is the
primary factor contributing to NLRNs work satisfaction. Therefore, the outcomes suggest further
efforts to retain NLRNs should focus on developing supportive leaders who will need to
individualize efforts to retain an ethnically diverse and multigenerational nursing workforce
(O'Hara, et al., 2019; Dols, et al., 2019). Moreover, findings from all the above studies identify
four converging principles to support a best practice program addressing RN satisfaction,
wellness, and retention in the NLRN. The principles suggest a four-pronged approach
considering (a) professional growth and status, inclusive of career/job security; (b) training in
skill support, inclusive of communication and interaction with colleagues; (c) autonomy in
decision-making; and (d) support from supervisor, inclusive of pay, tasks, and organizational
policy. The findings suggest that administrative nurse leaders should create a four-pronged
Retention of the Newly Licensed Registered Nursing (NLRN) Workforce Post-COVID-19

intervention program aimed at strengthening NLRN wellness. The program must also provide formal training to leaders so that they are equipped to support NLRNs (Church, et al., 2018; O'Hara, et al., 2019; Yu, et al., 2018).

Nurse Residency Programs (NRPs)

NRPs have only become popular in the past 8-10 years, after the Institute of Medicine, along with the Robert Wood Johnson Foundation, came out with the 2010 Report on the Future of Nursing. Hospitals will rely on NLRNs to staff their organizations thus needing creative transition-to-practice programs (Bratt, et al., 2012; Friday, et al., 2015). Furthermore, hospitals and nurse leaders need creative and effective programs to onboard NLRNs and retain them. Hospitals must address increasingly high RN turnover rates, especially in the first year of NLRN employment, for financial reasons as well as diminished quality outcomes due to staffing shortages with direct impact on organizational reputation (Baggot, et al., 2005; Roberts, et al., 2004). Transition-to-practice, through residency programs, has long been a concept in the medical profession and, more recently, is gaining traction in the nursing profession. While Kramer (1974) and Benner (1984) published on Reality Shock and Novice to Expert for NLRNs with intent to improve internships and preceptors, it’s not been until the past 10-years with an impending nursing shortage on the horizon and a more intentional focus to decrease RN turnover, that NRPs have surfaced as a new initiative to recruit and retain NLRNs (Harrison, et al., 2014).
Retention of the Newly Licensed Registered Nursing (NLRN) Workforce Post-COVID-19

**Nurse stress and novel coronavirus (COVID-19)**

There has been increased attention to compassion fatigue and nurse burnout over the past few decades. The advent of the Covid-19 virus in healthcare settings brings with it a deeper need to understand the role secondary trauma plays on compassion fatigue (Kelly, 2020). For example, millions of nurses in the US, have cared for Covid-19 patients and endured the psychological trauma of watching these patients suffer on ventilators with little-known treatments and cures. Considerable stress was associated with alternate nursing care models, (for instance, a ‘buddy-system of nursing care in which a skilled ICU nurse was paired with a nurse reassigned from another area of expertise) and unfamiliar, multistep processes which replaced usual practice [for example, nurses communicating with erasable pens and erase-wipe pads on the insides of ICU glass doors, all while fully garbed in Personal Protective Equipment (PPE), to buddy-system nurses outside the rooms}. Nurse’s co-experienced patients’ suffering as they became intensely engaged with their patients. This stress and personal suffering by the nurse was further exacerbated through a combination of ‘visitor restriction’ policies, as well as, individual/community fear related to the unknown spread of viral transmission early on within the pandemic, necessitating that nurses and patients communicate with families using technology such as FaceTime. Many of these emotionally charged and difficult moments occurred at their patients' end-of-life. Nurses experienced feelings of helplessness as they held their patients’ hands and spoke to them through layers of PPE while patients died without family or loved ones at the bedside.

Professional challenges were posed as learning occurred through expert opinion and by trialing unproven treatments for the novel Covid-19 virus which had been used in similar diseases (such as Acute Respiratory Distress Syndrome, ARDS). To this point, Foli, in CNN
Retention of the Newly Licensed Registered Nursing (NLRN) Workforce Post-COVID-19

Health’s, The Conversation (2020), refers to a term, “insufficient resource trauma”, as a psychological injury that occurs when nurses don’t have the knowledge, supplies or staff to completely fulfill professional and ethical responsibilities as can be the case during a global pandemic or disaster.

All of this resulted in severe, unrelenting cumulative stress, comprising physical and cognitive fatigue from highly unfamiliar circumstances in an urgently threatening situation. This stress was characterized by emotionally arduous moments occurring throughout the day, including first-hand witnessing of severe illness and accompanying death in uncharted medical territory. This clustering of severe stressors in the context of intense or continuing threat, known as traumatic and secondary traumatic stress, renders nurses vulnerable to its related conditions. These conditions include post-traumatic stress symptoms, (PTSS) and frank clinical diagnoses such as Post Traumatic Stress Disorder (PTSD) and Acute Stress Disorder (DSM V criteria). The most commonly known of these, PTSD, is a complex trauma-induced disorder associated with symptoms such as sleep disturbances, “brain fog”, hypervigilance, intrusive thoughts and flashbacks (Foli, 2020). Longer term effects can be debilitating and include depression, anxiety, compassion fatigue and burnout, often causing nurses to leave the bedside and the profession all-together (Salmon, 2019).

**Project model**

The Plan-Do-Study-Act (PDSA) cycle for quick tests of change was utilized as the project was implemented allowing for any necessary modifications (IHI, 2020). The outcome supported NLRNs as they transitioned from the student to the graduate nurse role with individual as well as system implications for retention, cost savings and patient care. Data was collected on
the needs of the NLRN to determine what areas of focus require change. For example, in reviewing the CNTC pilot residency program early review of the data finds communication issues as one of the top reasons that NLRNs call their CNTC for support. Needing assistance on how to report-out to a physician using the ‘Situation, Background, Assessment, and Recommendation’ (S-B-A-R) method of communicating, is one such reason. Reviewing the number and reasons of calls on a weekly/monthly basis, allows the team to better understand the needs of the NLRN and incorporate the findings in coaching during ‘just-in-time check-in’s’ and rounding’s, all with the goal of delivering improvements in the quality and safety of care being provided. As changes are made to the coaching model, data, NLRN feedback and patient outcomes will continue to be monitored to inform program adjustments. Benefits to the NLRN, the patients, and the hospital can be maximized through a combination of best-practice programs.

As stress to the frontline NLRN ensued from the Covid-19 crisis, the PDSA model was utilized to assess required needs to supplement the residency programs. It became apparent that just-in-time coaching to develop critical skills and thinking, socialization, and attention to professional practice would not be enough to address the secondary traumatic stress faced during care of Covid-19 patients. Thus, attending to the NLRNs emotional well-being is an essential element towards retention (Appendix C1, Project Model).
Supporting theoretical frameworks

Two theoretical frameworks support this project: Transition Shock Theory, and Jean Watson’s Theory of Human Caring: The Caring Science. Marlene Kramer’s seminal work on the notion of reality shock for nurses informs this project. Reality shock theorizes four stages of transition that nurses new to the profession go through: honeymoon, shock, recovery and resolution (Guinan, K., 2016). Kramer began her work in the early 1970s on the experience of NLRNs with “reality shock”. She conceptualized it as the challenging experience of the transition into professional practice. Judy Boychuk Duchscher later studied the shock of transition related to the NLRNs roles, knowledge, relationships and responsibilities as they are motivated throughout their entry into practice. Feelings experienced through the transition are further illuminated as stages of transition: the journey of doing, being, and knowing (Duchscher, et al., 2018). Nurse Residency Programs (NRPs) assist with this transitional phase.
Creation of the RNRx program can be built off the core concepts of Jean Watson’s Nursing Theory of Human Caring Science. Practice through a loving-kindness with an authentic presence, cultivating wholeness of spirit/mind/body, being the healing-caring environment, while being open to life events (Wagner, 2010). Watson has ten caring factors for placing heart-centered caring practice into action. These ten factors are aligned with the values of this large New England academic health center, and the Nursing Professional Practice Model (PPM) at the organization utilizes Jean Watson’s Theory for Caring, creating a durable foundation for wellness and coaching of the NLRNs (Appendices C1 & C2, Nursing Theories).

Environmental scan/ organizational strengths-weaknesses-opportunities-threats (SWOT) analysis

This large New England academic health system, of five acute care hospitals and a physician led medical group all have strong ties to their unique communities. With greater than 26,000 employees, a 1,200 – member multispecialty physician group, over 6,600 physicians and greater than 8,000 RNs and access to the latest research and technology, this health system is a major contributor to the medical, nursing, and economic health of the region. The RNRx program was created for all specialties of nursing, post-Covid-19, with emphasis on the NLRNs.

Strengths: The organization has notable strengths in care signature, a nursing professional governance culture modeled from Magnet principles and a strong, cohesive leadership team. It is an organization that emphasizes system integration and efficiencies, utilizing shared resources and complementary strengths. The organization, its leadership and staff are guided by the vision to consistently deliver patient-centered care that is compassionate, culturally sensitive, collaborative and comprehensive. Magnet principles frame the relentless pursuit of excellence to
Retention of the Newly Licensed Registered Nursing (NLRN) Workforce Post-COVID-19

lead the world of nursing. Significant gains have been realized in patient experience and nursing quality indicators. Adjustments to the RN salary structure for market competitiveness and enhanced recruitment support the organization’s workforce strategy goals.

Weaknesses: Organizational challenges include workload associated with baby boomer workforce retirements requiring the use of agency nurses at higher expense to maintain nurse-to-patient ratios and to retain seasoned nurses in the workforce.

Opportunities: Opportunities occur as the organization continues to strengthen one care signature across the health system, decrease agency use and nurse turnover allowing a shift in financial resources toward nurse residency and wellness programs and the journey toward Magnet designation. While patient experience scores increased, over the years, they have recently grown stagnant presenting important opportunities to integrate the care signature, decrease variation and standardize care across the system and require consistent accountability. This improvement agenda provides an opportunity to increase employee morale and engagement, invest in employees as the most important resource, and ensure positive outcomes.

Threats: Competition from nearby Magnet-designated hospitals that utilize high sign-on bonuses to entice staff in order to counter the States’ high cost of living, present a challenge to NLRN recruitment. Other threats include nearby organizations merging with other large health systems creating newly added and ongoing competition for a limited supply of nurses within the same market. (Appendix D, SWOT).
Retention of the Newly Licensed Registered Nursing (NLRN) Workforce Post-COVID-19

Overall goal and aims

This Doctor of Nursing Program (DNP) project developed a trauma-informed wellness program for NLRNs, The Registered Nurse Residency Script for the Future (RNRx) Program, in a large urban, New England inpatient hospital setting.

The aims for this project were:

1. To develop a Trauma-informed Wellness (RNRx) Program for NLRNs in response to practice in the hospital setting during and after the Covid-19 crisis, which could then be modified for future crises.

2. To implement and evaluate the RNRx Program.

3. To make recommendations for scaling and sustainability of the RNRx Program throughout this New England urban healthcare system, with potential for regional and national scale.
Chapter 3

Methods

Approach

This Doctor of Nursing project applied a rapid cycle quality improvement approach to the development and implementation of a trauma-informed wellness, RNRx, program as a model for NLRN transition during and after the Covid-19 crisis.

The RNRx program, while providing support, coaching, and oversight, placed a unique and newly constructed emphasis on the emotional well-being of NLRNs in the inpatient hospital practice setting. The following outcomes were assessed: 1) nurses’ secondary traumatic stress experiences via total individual Secondary Traumatic Stress Scale (STSS) scores inclusive of intrusion, avoidance, and arousal symptom clusters, and 2) forthcoming NLRN retention at the inpatient bedside. The project goal, aims, and methods are described in this chapter.

Goals and aims

This Doctor of Nursing Program (DNP) project developed and implemented a trauma-informed wellness program for NLRNs, The Registered Nurse Residency Script for the Future (RNRx), Program, in a large urban, New England inpatient hospital setting.

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2. To implement and evaluate the RNRx Program.
3. To make recommendations for scaling and sustainability of the *RNRx* Program throughout this New England urban healthcare system, with potential for regional and national scale.

**AIM 1**

To develop a Trauma-informed Wellness (*RNRx*) Program for NLRNs in response to practice in the hospital setting during and after the Covid-19 crisis, which could then be modified for future crises.

1. The initial step in this process was a review of the hospital-wide Employee Engagement Survey. This survey captured voluntary employee feedback, post first wave of Covid-19, between 10/04-10/18, 2020 with a pulse survey repeated 05/10-05/23, 2021 to assess and utilize relevant results including data on nurse engagement and retention, throughout the Covid-19 crisis. This represents the voice of the nurses, providing important preliminary requisite data of their needs and current state of well-being, to inform the project and needs for quick tests of change.

2. Following the Employee Engagement Survey, a trauma scale Secondary Traumatic Stress Scale – STSS) was completed through use of Key Survey Software, to NLRNs on October 11, 2021. (STSS; Bride, Robinson, Yegidis, & Figley, 2004). The STSS was completed anonymously as no identifiers were used or could be traced. The STSS is designed to measure reactions of helping professionals, such as nurses, who have experienced traumatic stress through their working with traumatized patients (Jacobs, 2019).
• The participants were nurses (NLRNs), practicing in the hospital one to two years post-Covid-19, which correlates to current baseline survey results of those nurses with the highest turnover in this NLRN population.

• The STSS was developed and validated with 282 social workers from the southern United States who were routinely exposed to domestic crises and violent situations in the course of their work (α=0.93). The 17-item tool examines secondary traumatic stress (STS), (Appendix E1, STSS Tool). Each item is scored on a 5-point Likert scale. The STSS is a self-reported instrument designed to assess the frequency of the following common trauma symptom clusters:
  • Intrusion (re-experiencing recurring and intrusive images, disturbing dreams, intense flashbacks).
  • Avoidance (loss of interest, detachment, avoiding certain places associated with the traumatic experience).
  • Arousal symptoms (persistent anxiety, hypervigilance, difficulty falling/staying asleep, and irritability)

These symptoms are associated with STS, which result from working with traumatized populations (Bride, 2007). During psychometric testing high-sensitivity and specificity were found at 0.93 and 0.91 respectively. A score equal to or greater than 38 on the scale indicates risk for secondary traumatic stress (Appendix E2, STS Scoring) (STSS; Bride, Robinson, Yegidis, & Figley, 2004).

The STSS has demonstrated evidence of convergent, discriminant, and factorial validity, as well as high levels of internal consistency (Ting, 2005). In
addition to use with social workers, the STSS tool has become standard for assessing STS in nurses, midwives, pediatric care providers, and mental health workers (Jacobs, 2019).

Using the STSS results and evidence from the literature review, a consecutive 6-week comprehensive, RNRx program was designed to include mandatory Buddy System participation, with additional voluntary participation in Wellness Check-in’s/Decompression Huddles and Celebration/Compassion Circles:

- **Buddy System** – This component was mandatory and defined as active support from a self-selected peer (each participant was required to identify a buddy from within the participant project group, or choose to have one assigned to them) who checked-in, minimum of weekly-to-daily, on the NLRNs personal safety and well-being while communicating with the NLRN regularly to manage stress and prevent burnout (CDC, 2021, & NIOSH, 2020, & Yale, 2020). Participants were oriented using a detailed tip sheet which provided the suggested format for buddy meetings, suggested check-in questions, reflective questions, resources, and referrals (personal communication, July 9-30, 2021).

- **Wellness Check-in’s/Decompression Huddles** – This short session of 15-minutes was an extra, voluntary offering characterized by virtual ‘drop-in’ sessions guided by skilled clinicians (e.g., Master of Science, Certified Employee Assistance Personnel, Licensed Professional Counselor) to provide a safe, supported environment where individuals shared experiences among peers to not feel isolated. (YSOM, 2020). Open times, with flexibility were offered, three times per week, and the number of attendees was tracked for project purposes. These meetings began with prompt questions, for example, “in the last week, think about a challenging situation on your mind”.
Retention of the Newly Licensed Registered Nursing (NLRN) Workforce Post-COVID-19

- Celebration/Compassion Circles – This 1-hour virtual session was an extra, voluntary offering, hosted by a Chaplain with Academy of Certified Social Worker (ACSW) certification. This host met with a small group of peers (less than 20 per session) to maintain a feeling of being within a ‘safety net’ of trust. The host used the art of listening in an environment to allow reflection and sharing of thoughts and feelings about their experiences (Frameworks 4 Change, 2020). Open times, with flexibility were offered, three times per week, and the number of attendees were tracked for project purposes. Building Personal Resiliency, A Simple Book of Practice for Living a Life of Resiliency (Derr and Francek, 2018) were provided to each participant. Brief session content, tailored from the STSS questions, were provided at the beginning of each Circle, and followed by the art of listening.
  - Both the Wellness Check-in’s/Decompression Huddles and the Celebration/Compassion Circles, while voluntary, were strongly encouraged verbally during the opening, introductory meetings and through weekly e-mail/text reminders.
  - Both the Wellness Check-in’s/Decompression Huddles and the Celebration/Compassion Circles were held three sessions weekly for a total of 18-session offerings each.
  - All sessions, of both the Wellness Check-in’s/Decompression Huddles and the Celebration/Compassion Circles, followed a consistent format as described above. Content changed each week, building upon the previous week’s content for each of the six weeks.

3. Establishment of leadership and implementation teams:
  - Formation of Leadership team to inform on feasibility, allocate resources and ensure implementation. Individuals included the Chief Nurse
Executive (CNE) of the Health System, the hospital’s Chief Wellness Officer (CWO), Nurse Leaders and BSLs (bedside leaders).

- Identification of Implementation team members who conducted the program, e.g., Chaplains, ACSW, Master of Science Certified Employee Assistance Personnel, and Licensed Professional Counselor. Nurse educators responsible for the NLRNs, as well as the Vizient Nurse Residency and CNTC Programs were included in this team. Their assistance in convening the NLRNs and their input was used to develop a communication plan for all units/shifts.

AIM 2

Implement and evaluate the RNRx Program.

This aim included the following steps:

1. Recruiting ideal of 60 NLRN participants: the Project Lead (PL) and the lead educator met with the participants during nine informational sessions to provide program details, start date, possible benefits as well as requirements of participation, and schedules.

2. Scheduled training meetings with the implementation team.

3. Implementation and monitoring of the newly established RNRx program at the specified hospital.

- The program was six weeks in duration.

- The PL conducted weekly in-person (zoom) meetings with the implementation team to monitor the program's progress and fidelity to the project.
Retention of the Newly Licensed Registered Nursing (NLRN) Workforce Post-COVID-19

- Two meetings (pre- and post) were held with the Leadership team to discuss the progress of the program.
- The PL led pre- and post-program group discussions with nurse participants to get feedback.
- The PL provided as-needed monthly verbal reports, throughout the course of the project, to the Leadership team.

Evaluation:

1. The, de-identified participant, STSS scales were administered electronically to participants at the beginning and end of the 6 week program. Comparison of pre- and post-STSS score results were analyzed and interpreted utilizing descriptive and bivariate statistics. Total, and the 17-item pre- and post-scores on the STSS for all participants were analyzed using the R Foundation software for statistical computing. The Welch one-tailed unpaired t-test was used. R Core Team. (2021). R: A Language and Environment for Statistical Computing. R Foundation for Statistical Computing, Version 4.1.0. Vienna, Austria. URL https://www.R-project.org/

   The three dimensions of the STSS scores were examined using descriptive statistics.

2. Themes from discussions held between participants and the PL were analyzed qualitatively.

3. Meetings were held with the implementation team to receive feedback about the program.
AIM 3

To make recommendations for scaling and sustainability of the RNRx Program throughout this New England urban healthcare system, with potential for regional and national scale.

Scaling:

1. Recommendations for scaling included:
   - Future scaling to all NLRNs, in addition to those Registered Nurses (RNs) with greater than two-years of work experience, within the specified hospital within two to three years of the roll-out.
   - Potential future scaling to the NLRNs and RNs at the other hospitals within the Health System, currently five hospitals with planned growth due to acquisitions.
   - Further recommendations with potential to scale to the State of CT hospitals through membership in the Connecticut Hospital Association (CHA) and Connecticut’s Nursing Statewide Strategic Workforce Collaborative, with potential for regional and national scale.

Sustainability:

- In order to sustain the RNRx program, ongoing review of the RNRx program objectives and outcomes will be modified, as needed, using the Institute for Healthcare Improvement’s (IHI) Plan-Do-Study-Act (PDSA) quick tests of change model. Moving forward all NLRNs at the specified hospital will be enrolled in the program upon hire date (IHI, 2020).
• Internal Health System sustainability will be achieved through membership on the Health Systems newly established, post-COVID-19, WELD Committee (Wellness, Engagement, Leadership, and Development), (©YNHHS, WELD, 2020), and as Chairperson of the Wellness pillar of this committee.
Chapter 4
Results

Project implementation began August 5, 2021 with approval from two system based external experts: the President of the project-designated Hospital, a direct report structure for the Project Lead (PL), and the Chief Nurse Executive of the Health System, a dotted line matrixed report for the PL. The PL then gathered data on how many newly licensed registered nurses (NLRNs) were hired within the past two years (n=237), to assess potential participants, with a goal to recruit 60.

During the course of a month, a total of nine informational sessions were held to gather interest and commitment to the program with the invited participants from the NLRN list. Numerous meetings and multiple memos within this same timeframe were held with the intention to inform and convey the importance of this pilot program to the Nurse Manager group, asking these individuals to assist with recruitment efforts. Furthermore, this program was presented to the Leadership groups (Executive, Nursing Exclusive, all other Divisions, System Nurse Executive Council, Wellness-Engagement-Leadership-Development Committee, and Nursing Professional Governance) to comprehensively educate and inform.

The QR code and link, created through the organization’s approved Key Survey Software program, and developed specifically for this project, were offered during the nine informational sessions. Time was allotted for the participants to instantly commit to the 6-week program, ask additional questions, or opt out. This resulted in a total of 42 immediate responses with 40 firm commitments to the program. After committing, four nurses left the organization, leaving a total of 36 participants.
Retention of the Newly Licensed Registered Nursing (NLRN) Workforce Post-COVID-19

A welcome packet was sent to each participant prior to the kick-off including: a copy of the RNRx flyer, name and contact information of assigned/chosen buddy, guidelines for Buddy Check-in’s, schedule for Compassion/Celebration Circles and Wellness Check-In’s/Decompression Huddles, notebook and pen for optional journaling purposes, and a copy of the book, Building Personal Resiliency by W. Dennis Derr, Ed.D. & Jim Francek, MSW. To further the connection to the Buddy Program, each set of buddies received an introductory email with an additional copy of the buddy program outline.

Two go-live kick off times on October 11th and 12th welcomed the 36 participants and introduced the nurses paired as buddies. The Project Lead (PL) served as the host of these meetings. In addition to the PL, both social work experts who led the huddles, and onsite educational leads attended for introduction purposes and assisted with program details such as QR codes and survey needs. During these two days, 35 participants completed the initial stress survey.

Wellness Check-In’s/Decompression Huddles and Compassion/Celebration Circle sessions began on October 12, 2021 with two separate and distinct offerings centered on trauma-informed wellness and resilience. Main topics for discussion in these huddles included: vision of your best self, appreciative inquiry of life’s experience, resiliency model, radical acceptance based on reciprocity, tactics to maintain resilience and gratitude. Decompression huddles and Compassion/celebration circles occurred 3 times each, per week for a total of six sessions at various times to accommodate shifts.

There was a total of three participants involved in the huddles and 20 participants in the circles for the duration of the program. Weekly scheduled check-in meetings occurred with the facilitators to discuss participation, and feedback with praise and/or concerns. Additionally,
Retention of the Newly Licensed Registered Nursing (NLRN) Workforce Post-COVID-19

facilitators were encouraged, and made extra unscheduled contact each week, to address any immediate issues derived from the anonymous huddle conversation. This proved an important step to answer any questions participants may have had.

This program ran 6 weeks and ended with two wrap up sessions on November 22, 2021. The initial outcome of the closeout sessions resulted in 17 survey returns. A second survey question with separate QR code was created to gauge the buddy program participation resulting in 16 returns at the time of the close of the program. On November 23, 2021 another communication was made to the managers of participants who were unable to attend the first sessions to increase the rate of return on the surveys, resulting in a final response of 30 returns for the STSS survey and 29 for the buddy participation question.

Three program elements included: (1) a mandatory buddy system (87% of participants, n=31, made at least a weekly connection with their buddy) and 26% every day or up to six times/week, suggesting continued use; (2) weekly, voluntary, 1-hour Celebration/Compassion Circle sessions (55%, n= 20, participated); (3) weekly, voluntary, 15-minute Wellness Check-in’s/Decompression huddles (8%, n= 3 participated). The 6-week RNRx comprehensive trauma informed wellness program scored overall outcome results that were statistically significant.

**STSS scale score results**

The STSS was administered pre- and post- project with 97%, and 86% completion rates, respectively. The R foundation statistical software computing tool was used for analysis (R Core Team, 2021). Applying the Welch one-tailed unpaired t-test, the pre- and post-STSS scores (overall and individual questions) were analyzed following the 6-week program. An individual NLRN participant total score equal to or greater than 38 on the STSS scale indicates risk for
Retention of the Newly Licensed Registered Nursing (NLRN) Workforce Post-COVID-19

secondary traumatic stress (Appendix E2, STS Scoring) (STSS; Bride, Robinson, Yegidis, & Figley, 2004). Individual total scale scores showed a 22.4% drop in score post-RNRx program from approximate mean scores of 45 (pre-program survey) to mean scores of 36 (post-program surveys). Approximately two-thirds of the pre-program STSS surveys (65.7%) revealed a total score of 38 or higher, indicating elevated stress. Immediately post-program, 43.3% of returned STSS surveys showed a total score of 38, or higher, indicating a lower level of secondary traumatic stress. Comparison of these scores (adjusted $p=.004$) provided evidence that the 6-week RNRx program decreased the NLRN participants’ secondary traumatic stress levels. The questions with the largest improvements post-RNRx program were: *I felt discouraged about the future, I had trouble concentrating, and I was less active than usual.* Improvements in 14 of the 17 STSS items were statistically significant as well, with an average reduction in post-survey by a half point (0.54) per question. Improvements were further noted in all three domains (intrusion, avoidance, and arousal) of the STSS survey results. Two other questions ranking in the top five questions with significant improvements were: “*I wanted to avoid working with some patients*”, and “*I was easily annoyed*”.

The NLRN STSS survey scores which had the least impact and were not statistically significant included: ‘*I thought about my work with patients when I didn’t intend to*’; ”*I felt jumpy*”; and”* I noticed gaps in my memory about patient sessions*”. These results did not directly align with organizational outcomes noted in either of the recent (Fall 2021) pulse employee engagement survey (EES) or the NDNQI survey; however, some categorical cross-over similarities could be observed related to adequacy of staffing and interactions. Further, the scheduled 15-minute decompression huddles did not prove to be of added need or value for this particular program.
Qualitative session feedback

The nurses who joined the sessions commented that this is a much needed program and they looked forward to participation. They felt like the format fit an “older generation” and would appreciate a digital format if it would carry with it the same outcomes, as well as other activities outside of sessions, such as team building. They commented that had it not been for Covid-19 gathering restrictions, they would have liked in-person sessions in place of Zoom. Another recommendation was to have an application created for convenience of survey taking, in place of personal attendance at the program wrap up session, as well as an application that could send buddy reminder check-ins. Some participants found so much value in the compassion/celebration circles, that they made arrangements to continue them beyond the 6-week program.
Retention of the Newly Licensed Registered Nursing (NLRN) Workforce Post-COVID-19

Chapter 5

Discussion and conclusions

The purpose of this quality improvement project was to establish a trauma-informed wellness program, *The Registered Nurse Residency Script for the Future (RNRx)*, to support NLRNs well-being post-exposure to the traumatic experience of caring for patients with the novel Covid-19 virus. The overall, long-term goal of the RNRx program is to improve future retention of NLRNs at the inpatient bedside, as they are vital to the future success of a thriving nursing workforce.

The journey of nursing excellence striving towards zero patient harm, outstanding quality metrics, and patient experience lends itself to the value equation of lower cost of care. Excelling at the value equation requires a stable and engaged nursing workforce. The high percentage of turnover previously noted in the inpatient, frontline NLRNs pre-pandemic is continuing, and rising, post-Covid-19 pandemic, threatening this value equation. In addition, the secondary traumatic stress experienced by NLRNs who cared for patients during the Covid-19 pandemic may not be realized entirely for at least a few years. To ensure a stable and sustainable nursing workforce, strategic attention must be given to the well-being of the nursing workforce who have suffered post-care trauma in the work setting.

While the value of Nurse Residency Programs is well established, this project demonstrated the importance and positive results of extending NLRN support for secondary trauma arising from post-Covid-19 acute care delivery. In addition, this program has the potential for transferability and scalability beyond the NLRN population to all RNs who experience trauma due to the demands of care delivery during pandemics or other crisis events.
The difficulty of recruiting voluntary participants who were already experiencing stress and burnout post-Covid-19 argues in favor of prevention through more proactive initiatives. A better approach may be to launch such a program to support the well-being of NLRNs upon graduate hiring targeting not only the transition from school to the workplace but also to prepare the NLRN with coping skills for potential future traumatic job experiences. Of the three components within the established program, the buddy system and the compassion/celebration circles proved most advantageous. The data suggests that the program can be modified and streamlined to use the former interventions and reserving the latter intervention of wellness check-ins/decompression huddles only for just-in-time responses to stressful unit events.

The potential for another new and unknown illness or crisis affecting health care delivery and the workforce in the future, if not a certainty, is a high probability. This project identified gaps in the literature and the opportunity to extend knowledge to support the future workforce. Advancements in better understanding how the Covid-19 pandemic affected nurses' cognitive and physical fatigue needs to continue.

To ensure a stable nursing workforce, more attention to the topics of nurse stress and turnover in response to healthcare crises is needed. Such research may inform wellness programs of the future and importantly, affect policy changes at the organizational and governmental levels to increase resource allocations to this important need.

**Limitations**

The first limitation was in attaining a project participant number of 36, rather than the desired goal of 60. NLRN turnover, patient volumes from ongoing census surges, and pure exhaustion experienced throughout the Covid-19 pandemic was a factor in nurses not wanting to
Retention of the Newly Licensed Registered Nursing (NLRN) Workforce Post-COVID-19

participate in a 6-week commitment to the program. The second limitation, occurred as a result of maintaining anonymity of the survey questions with no participant identifiers and later receiving different return rates from the pre- to the post-survey questionnaires. This was resolved by utilizing the Welch one-tailed unpaired t-test pre- and post-survey and performing density plots within the R Foundation statistical computing tool which revealed normal distribution, justifying the unpaired t-test. The final limitation maintained the three domains, Intrusion, Avoidance, and Arousal (IAA), of the STSS survey tool, as out-of-scope for an in-depth analytical review. That said, all three domains showed a reduction in stress scores from pre- to post-survey numbers with an overall, combined, drop in score by 8.682 points.

This project proved to be of tremendous value to the overall well-being of the NLRNs post-Covid-19 pandemic, and scalability and sustainability of the program will be necessary to the retention of the future nursing workforce, particularly under stressful, traumatic conditions.

Conclusions

It is challenging enough to successfully transition the NLRN from the idyllic school setting to the real world setting, without adding to that a sudden and unknown novel virus which brought fear, uncertainty, stress, exhaustion, isolation, and high numbers of death. Arrival of the novel Coronavirus (Covid-19) pandemic brought with it disruption to the future of our nursing workforce, and increased dissatisfaction to the NLRNs. This stress created a noticeable rise in NLRN turnover. It became clear, quite quickly during the Covid-19 pandemic, that transition-to-practice nurse residency programs alone would not be sufficient to maintain NLRN well-being. In order to promote a healthy inpatient hospital environment and one that NLRNs could thrive in and would want to remain practicing in, a complimentary trauma-informed well-being program
Retention of the Newly Licensed Registered Nursing (NLRN) Workforce Post-COVID-19 would need to be established. The RNRx program with its statistically significant outcomes supports improvement to the overall well-being of the NLRN post-Covid-19 traumatic experience, and is a strong means to support NLRN retention.

**Business and financial implications**

The pilot RNRx program was funded by community donors and budget neutral. Preparation and facilitation of coaching session expenses included and may in the future include:

- Maximum of 20 RNs/class @ $175.00/class (x) three sessions/week = $525.00 x six weeks = $3,150 ($52.50 per RN)
- **Building Personal Resiliency** Handbooks: 60 books @ $10.00 each = $600.00 (3% annual cost increase of materials needed).
- RN time for sessions beyond worked hours orientation:
  $33/hour*1.5(OT)*60(initial)*6 weeks = $17820.
- Following the successful launch of the pilot the continuance of the program extends to all 1st-year RNs post-Covid-19 pandemic (began with 212 RNs hired in CY2020, minus the 60 enrolled in pilot study = approximately 152 RNs remaining). To capture all first year RNs, the plan is to increase the number of sessions offered for an additional 5 sessions, maintaining session size at a maximum of 20 NLRNs per session (adding an additional $45,144.00 maximum for the 152 RNs to go thru the 6-week course, if all are on overtime expense). For future new hires, RNRx coursework would be built into the NLRN work schedule.
Retention of the Newly Licensed Registered Nursing (NLRN) Workforce Post-COVID-19

while still in orientation thereby eliminating overtime expense and improving the financial sustainability of the program.

Anticipated long-term positive budgetary impact include expense reductions through decreased RN turnover, improved National Database of Nursing Quality Indicator (NDNQI) outcomes, and enhanced patient experience. Improved care outcomes and patient satisfaction impact reimbursement through value-based payment (VBP) of hospital acquired infections (HAIs), related to Centers for Medicaid and Medicare Services (CMS) penalties, and through Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) scoring. Additionally, better NLRN training, support, and engagement can improve attention to care and outcomes, leading to enhanced work satisfaction.

There are no financial risks in deploying the pilot program. There is a risk of non-achievement of long-term positive budget impact if the program is not sustained and scaled.

**Implications of the project**

The project provides potential for far-reaching positive outcomes and implications for nurse retention, nurse well-being, and improved quality and patient experience outcomes, extending into the community's overall wellness at large. Research shows how healthcare workers, including nurses, are cared for during acute stress times impacts their overall ability to cope and ultimately recover or not from the experienced crisis (AMA, 2020).
Retention of the Newly Licensed Registered Nursing (NLRN) Workforce Post-COVID-19

Program development and intentional actions taken to support nurse well-being after a crisis can decrease psychosocial strain, stress, and trauma, leading to improved individual thriving rather than merely coping (AMA, 2020).

This project stands to gain positive outcomes for the nursing workforce and health care organizations who depend on these professionals to continue their core business. Given the literature gaps specific to nurse well-being as it relates to post-traumatic experience outcomes, this project has the potential to inform much-needed future research of this important topic.

**Human subject Institutional Review Board (IRB) consideration**

Retention of the Newly Licensed Registered Nursing Workforce Post-Coronavirus (Covid-19) project was deemed a quality improvement (QI) project by both the Yale University IRB and Delivery Network (DN) Hospital IRB experts, and did not require further IRB review/approval. Due to the inclusion of the DN employees in the recruitment pool, the DN IRB requested a “record” of the protocol. This record is a completed IRB exemption form and the more detailed information was uploaded to AxiomMentor (IRB software) and approved requiring no further IRB review.

Both IRBs estimated this project to pose minimal risk to human subjects, but in the event the survey resurfaces any trauma to the nurses, the risk of harm will be mitigated through an immediate referral to our employee family resource (EFR) program with counselors (free of charge to employees and confidential), as well as, through proactive distribution of a resource page with EFR phone numbers, pre- and post-test.
Retention of the Newly Licensed Registered Nursing (NLRN) Workforce Post-COVID-19

Project timeline

The project timeline, comprised of pre-planning strategy, preparation to defend, development of a RNRx program, implementation and evaluation, with recommendation for scaling and sustaining the program, is outlined in a Gantt chart.

Leadership immersion

The project was successfully defended on June 30th 2021, implementation work with the NLRN population began striving toward continuing leadership commitment to their well-being and retention to the organization. The project was presented to selective health system Executive Cabinet members. Externally, collaboration with the President of the Connecticut Hospital Association (CHA) was pursued to obtain sponsorship for presentation to the statewide collaborative group of CNOs, and the Connecticut League of Nursing: Nursing Workforce Strategy Group and the University School of Nursing Dean's Group. Targeted national presentation forums include the American Organization for Nursing Leadership (AONL) and American Nurses Credentialing Center (ANCC) Magnet Recognition Program. Submission to the Nurse Executive fellowship cohort within the General Electric Health Management Academy/The Academy (GE HMA) and publishing for additional dissemination to targeted journals will be considered.

The National Database of Nursing Quality Indicators (NDNQI) survey is complete which ran from September 13-October 3, 2021. Subsequently, the Employee Engagement Survey (EES) administered October 4-24, 2021 is also complete. Any data from these two surveys that can be used to help inform the DNP project from a qualitative standpoint or from a turnover data
Retention of the Newly Licensed Registered Nursing (NLRN) Workforce Post-COVID-19

standpoint was investigated and compared to previous baseline survey results within the past two years.

Focus on this program and the outcomes of the pre- and post-STSS results of our NLRNs will ultimately improve the health and well-being of the community served. This DNP project provides a platform for a more sustainable and cohesive strategy to replace the current repetitive practice of filling nurse vacancies. Instead, by directing attention to the caregivers' well-being, particularly post-traumatic experiences, nurses can thrive, thereby enabling them to renew their mission of caring for complex and compromised patients.
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Retention of the Newly Licensed Registered Nursing (NLRN) Workforce Post-COVID-19


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Appendix A

Prisma

Identification

Records identified through database (OVID) searching (n = 792)

Additional records identified through other (CINAHL, Google) sources (n = 37)

Records after duplicates removed (n = 667)

Screening

Duplicates or non-English excluded (n = 40)
Non-relevant by title & abstract screening (n = 107)

Records excluded (n = 444)
Not specifically relevant to topic

Eligibility

Records abstract screened (n = 520)

Full-text articles reviewed for relevance (n = 76)

Included

Studies included in ROL References (n = 56)

Studies included in matrix (n = 25)

Appendix B

Evidence Table

Evidence Table is not included in this submission. Please contact primary author with any questions or requests.
Appendix C1

Project Model

Institute for Healthcare Improvement (IHI)

http://www.ihi.org/resources/Pages/HowtoImprove/default.aspx
Appendix C2

Nursing Theory Model(s)

Transition Shock Theory with Transition Stages Model


“Reality shock”, Kramer’s early 1970’s work, conceptualized the challenging experience of the transition into professional NLRN practice.
Appendix C2

Nursing Theory Model(s)

Jean Watson Theory of Human Caring Model


Retention of the Newly Licensed Registered Nursing (NLRN) Workforce Post-COVID-19

Appendix D

Strengths, Weaknesses, Opportunities, Threats (SWOT) Analysis Chart

**STRENGTHS**
- Strong/Cohesive Leadership
- Staff/Physician/Board Engagement
- Reward & Recognition Program
- Highly Reliable Organization
- Nursing Professional Governance
- Reputation/Systemness/Values/Culture
- Daisy Program, Nursing
- Vizient Nurse Residency Program
- CNTC Program
- Journey to Zero Travelers
- Competitive Salary Structure
- Improved Nursing Ratios

**WEAKNESSES**
- Stagnant Patient Satisfaction Scores
- Challenging Payer Mix
- Working at Census Capacity
- Maintain Control Over Staffing Ratios to Decrease Workload
- High Turnover Among NLRNs
- High % of Baby Boomers Close to Retirement
- Journey to Pathway to Excellence; Not Magnet Accredited
- Too many Travelers Utilized
- Stagnant NDNQI Measures

**OPPORTUNITIES**
- Continue Strengthening One Care Signature Across YNHHS
- Improve Patient Satisfaction Scores
- Improve NDNQI Measures
- Improve NLRN Turnover
- Dollar Savings to Organization vs/ Turnover
- Continue Evaluating Staffing Needs to Support Current Volume Growth
- Improve Use of Technology to Decrease Workload

**THREATS**
- Nearby Competitors Vying for NLRNs
- Resurgence of Nearby Competitor
- Dependent Upon New Ownership
- Nearby Campuses are Magnet Accredited
- Nearby Competitors Utilizing High Sign-on Incentives
- State of CT Cost of Living for the Younger Generation
- Becoming Too Lean
- Competition from Ambulatory Physician Groups
Appendix E1

Secondary Traumatic Stress Scale (STSS)

SECONDARY TRAUMATIC STRESS SCALE

The following is a list of statements made by persons who have been impacted by their work with traumatized clients. Read each statement then indicate how frequently the statement was true for you in the past seven (7) days by circling the corresponding number next to the statement.

NOTE: “Client” is used to indicate persons with whom you have been engaged in a helping relationship. You may substitute another noun that better represents your work such as consumer, patient, recipient, etc.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Never</th>
<th>Rarely</th>
<th>Occasionally</th>
<th>Often</th>
<th>Very Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I felt emotionally numb.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. My heart started pounding when I thought about my work with clients.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. It seemed as if I was reliving the trauma(s) experienced by my client(s).</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. I had trouble sleeping.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5. I felt discouraged about the future.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6. Reminders of my work with clients upset me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7. I had little interest in being around others.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8. I felt jumpy.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9. I was less active than usual.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10. I thought about my work with clients when I didn’t intend to.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>11. I had trouble concentrating.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>12. I avoided people, places, or things that reminded me of my work with clients.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>13. I had disturbing dreams about my work with clients.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>14. I wanted to avoid working with some clients.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>15. I was easily annoyed.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>16. I expected something bad to happen.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>17. I noticed gaps in my memory about client sessions.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

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Intrusion Subscale (add items 2, 3, 6, 10, 13)                                | Intrusion Score
Avoidance Subscale (add items 1, 5, 7, 9, 12, 14, 17)                      | Avoidance Score
Arousal Subscale (add items 4, 8, 11, 15, 16)                               | Arousal Score
TOTAL (add Intrusion, Arousal, and Avoidance Scores)                        | Total Score

Appendix E2

Secondary Traumatic Stress Scoring (STS)

Scoring Instructions

For each subscale below, add your scores for the items listed. Add the three scores in the right hand column for a total score.

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Items</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intrusion</td>
<td>2, 3, 6, 10, 13</td>
<td></td>
</tr>
<tr>
<td>Avoidance</td>
<td>1, 5, 7, 9, 12, 14, 17</td>
<td></td>
</tr>
<tr>
<td>Arousal</td>
<td>4, 8, 11, 15, 16</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
</tr>
</tbody>
</table>

Score Interpretation\(^{18}\)

<table>
<thead>
<tr>
<th>Little or No STS</th>
<th>Mild STS</th>
<th>Moderate STS</th>
<th>High STS</th>
<th>Severe STS</th>
</tr>
</thead>
<tbody>
<tr>
<td>27 or less</td>
<td>28-37</td>
<td>38-43</td>
<td>44-48</td>
<td>49+</td>
</tr>
</tbody>
</table>