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### Implementing A Workload Tool To Increase Float Nurses' Job Satisfaction And Reduce Intent To Leave The Workplace

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**Implementing a workload tool to increase float nurses' job satisfaction and reduce intent to leave the workplace**

A Project Submitted to the Doctor of Nursing Practice Faculty of  
Yale University School of Nursing

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

Lisa Czaplinski MSN, RN, CMSRN

May 22, 2023

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This DNP Project is accepted in partial fulfillment of the requirements for the degree Doctor of Nursing Practice.

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Dr. Joan Kearney PhD, APRN, FAAN

Date here \_\_\_\_\_

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## Abstract

### **Implementing a workload tool to increase float nurses' job satisfaction and reduce intent to leave the workplace.**

Float nurses report frustration and dissatisfaction with their patient assignment distribution on a continual basis; citing that they often receive the highest workload and most acute patients. This experience is closely related to nurses' job satisfaction with an established association between perception of unfair patient assignment and intent to leave the workplace. This project aims to utilize a workload score to create a balanced and transparent nursing assignment. With the imminent nursing shortage, float nurses have the ability increase overall satisfaction for in-patient hospital nurses and reduce nurse burnout throughout the in-patient areas. This project will address equitable patient care assignments with direct implications for nurse retention and cost savings. Findings provide strong support for the use of the workload tool as a means to systematically bolster job satisfaction in this sector of our already stressed nursing workforce and address the urgent problem of nursing retention.

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## **Part 1**

### **Creation of the Float Nurse Assignments and its Effect on Job Satisfaction**

Float nurses report increased frustration and dissatisfaction with their patient assignment distribution on a continual basis; citing that they often receive the highest workload and most acute patients (Al-Dweik & Ahmad, 2019). Nursing assignments in medical/surgical in-patient hospital units are created by the charge nurse on each unit for the oncoming shift. Charge nurses have a full patient assignment in addition to their regular charge duties. Consequently, they do not always have the time needed to fully assess each patient on the unit in order to distribute assignments fairly based upon patient acuity. Therefore, assignments are often determined based on room proximity, mandated nurse-to-patient ratios, and the ability to maintain continuity of care (Meyer et al., 2020). This causes some nurses to have a perceived increased patient workload in comparison with other nurses on the unit. At times, there is a known patient outlier with high workload needs that float nurses are commonly assigned to.

Float nurses are specialized staff that are able to work in all medical/surgical in-patient units, along with specialty and overflow units. The concept of utilizing float nurses in a hospital setting was first created in 1981, to address the various patient populations and fluctuating staffing needs (Straw, 2018). These nurses use resource sharing to rectify the staffing shortages created by variability in patient census, nurse sick calls, family emergencies, vacations, leave of absences and turnovers. They have additional training and education to maintain the credentialing in order to work in these various specialty units; which lengthens their orientation period and increase orientation costs. The float nurses are also educated and up to date with the current implementation pilots that are initiated on each unit, along with the specific documentation needs and standards of operating procedures used in specialty areas. When patients with multiple comorbidities are assigned to a unit based on their admitting diagnosis, unit nurses may not be familiar with the care plan to safely care for the patient as a whole. The float nurses are able to use their education and broad knowledge base to assist with the plan of

care for the patient's diagnosis, along with the special needs that the patient may have. They can also assume the patient assignment safely with the knowledge that they obtain from working in various units.

When census surges and there are no longer hospital rooms available in conventional locations, the float nurses expand patient care into non-conventional areas of the organization. The float nurses use their knowledge to ensure that these new areas are fully stocked with the necessary supplies to maintain patient safety, while procuring high patient care in a new unfamiliar location. Their flexibility allows for a continual flow of patients from the emergency room to an in-patient setting, without causing a backup of patient's waiting to be seen. When patients are held in the emergency room due to the inability of an in-patient room, it restricts the capability to see and treat additional patients.

### **Problem Statement**

Actualizing the workload of a patient assignment is currently unavailable on the medical/surgical units in an automated way. Instead, nursing workload is calculated based on nursing ratios rather than measuring the variables that contribute to the time needed to care for each patient. Float nurses are equating their assignments based on their perceptions and how busy the other nurses seem in comparison to their own assignment. Receiving a perceived unfair assignment based on traditional methods has a negative impact on satisfaction with their work-life balance and increases the float nurses' intent to leave their workplace (Holland et al., 2019). In 2016, there was a 40% float pool turnover which exceeded \$1 million in organizational costs (Straw, 2018). Hospital nurse staffing averages a 9% vacancy rate with an average of 3 months to recruit an experienced nurse (Nursing Solutions, Inc, 2020). By 2025, it is estimated that there will be a projected nursing shortage of 260,000; which will have a significant effect on providing safe patient care (Phillips, 2020).

In the first year of employment, new nurse turnover rate is currently between 35% and 60% (Reinsvold, 2008). When a nurse leaves a position within the first year of employment, it is

a financial loss equal to approximately the full amount of the nurse's annual salary (Pilcher, 2011). Additionally, losing a float nurse impedes the ability to cover staffing needs on high demand units. It also hinders the ability to allow for the opening of overflow areas to accommodate increased census. This DNP project developed a protocol for use of an existing workload tool: "Workload Score", to implement balanced and transparent nurse assignments on two medical/surgical units in a large urban healthcare system. The purpose of the project was to increase float nurse satisfaction and reduce intent to leave.

### **Significance of addressing the problem**

Unit nurses are acquainted with the routine of their area and the continuity that day to day work life brings them. The practice of floating unit staff creates a negative experience for them with 73% of nurses disliking or even resenting being floated (Dziuba-Ellis, 2006). A dedicated pool of float nurses assists in reducing the amount of time that unit nurses are required to float to another unit (Lebanik & Britt, 2015). In the United States, nurse job satisfaction is a considerable indicator for intent to leave with high job satisfaction reducing turnover (Nantsupawat, 2017). With the imminent nursing shortage, float nurses have the ability increase overall satisfaction for in-patient hospital nurses and reduce nurse burnout throughout the in-patient areas. The cost implications for bedside nurse turnover averages \$44,400 with a range from \$33,300 to \$56,000 per nurse, costing a hospital \$3.6 -\$6.1 million annually (Nursing Solutions, Inc, 2020).

Float nurses reduce the need for using High Incentive Pay (HIP) along with overtime pay to encourage staff to pick up additional shifts; a savings of between 2%-5% of labor costs (Lebanik & Britt, 2015). The hospital employs approximately 330 in-patient medical/surgical nurses with an average annual salary of \$75,000 per nurse. This equates to labor cost savings of \$495,000 - \$1,237,500 annually. Float nurses are also a cost-effective means of addressing fluctuating patient census while reducing the need of per diem staff and the use of costly temporary staff via an agency (Dziuba-Ellis, 2006). Utilization of travel nurses cost an

organization an average of \$4,203,680 annually for every 20 nurses (Nursing Solutions, Inc, 2020). Nurses acquired through agencies also do not have an investment in the organization and therefore do not uphold the organizations missions, visions and value; whereas float nurses are employees of the hospital and adopt to their organization's standards. This allows for a unified nursing and organizational workforce that will ensure the standards are upheld to produce a care signature for patient care in the hospital. Therefore, increasing float nurse satisfaction has critical workforce, financial and organizational impact.

## **Background**

### **Search Strategy**

A literature search was conducted utilizing the following electronic databases: PubMed, Cumulative Index for Nursing and Allied Health (CINHL) and Medline. Google scholar was used as a secondary source to obtain pertinent literature related to the study topic. The following search terms were used: workload tool, tool, nurse satisfaction, nurse burnout, nurse intent to leave, and nurse turnover. All search results were than narrowed to focus on medical/surgical in-patient units and literature published between the years 2010 to 2021, producing a total of 1,101 articles.

Inclusion criteria incorporated articles that implemented a workload tool for the creation of nursing assignments. Literature pertaining to workload and patient acuity combined with nursing outcomes, including satisfaction and intent to leave, were included. Duplicate articles were excluded, along with those published prior to 2010 and non-English language publications. Titles and abstracts were reviewed for relevance and 1,088 articles were then excluded.

The remaining 16 articles were reviewed in detail. The title, purpose, sample, study design, findings and conclusions were meticulously scrutinized to determine articles for inclusion. 5 articles were eliminated due to insufficient data and results being documented elsewhere. See Appendix A.

## **Synthesis of Literature**

Upon careful examination, 8 articles were selected due to their contents and relevance to the projects' aim. The articles retrieved were a mix of qualitative, quasi-experimental and correlation studies. They addressed patient's workload and the nursing outcomes associated with the perceptions of an increased workload. Nurse's intent to stay at their profession was also an outcome of the some of the studies. Four studies implemented a workload tool in a hospital setting and evaluated the effectiveness of the implementation to nursing outcomes.

## **Literature Findings**

### ***Patient Acuity.***

Patient acuity is terminology used throughout the literature results. Patient acuity is defined as the amount of time dedicated to care for a patient which varies based on patient-specific needs and the complexity of patient care (Ageiz & Abd El-Mageed, 2020; Meyer et al., 2020). Patients on a medical/surgical unit can range from alert, oriented and independent individuals to those who require total care. Patient diagnosis, co-morbidities, along with their ability to complete activities of daily living play a factor in the patient's acuity. Workload is a sub-category of patient acuity and is described as a measurement of the nurses' time required to meet the patient's needs (Brennan & Daly, 2009). In order to support nursing staff, patient acuity and workload should be understood and utilized (Firestone-Howard et al., 2017). Ageiz & Abd El-Mageed 2020 mention that utilizing a patient's acuity allows for an assignment that is balanced between staff members.

### ***Assessment of Patient Acuity.***

In order to create an equitable nursing assignment, the time required to care for each patient should be considered (Ageiz & Abd El-Mageed, 2020; Firestone-Howard et al., 2017). Actualizing workload in a balanced and standardized manner requires determining how nurse workload is measured. Workload measurements were first used in 1973, by a group of experts, primarily focused on physiological aspects of patient care (Swiger et al., 2016). This method

was unreliable due to the inability to predict patient care needs. In 1980's, systems focused on patient diagnoses which failed to consider nursing specific needs (Swiger et al., 2016). A workload tool should numerically classify patients by utilizing the patient's assessment and nursing care requirements along with patient needs (Al-Dweik & Ahmad, 2019). Al-Dweik & Ahmad 2019, used a patient acuity tool that assigns patients based on their assessments and needs. In Ageiz & Abd El-Mageed's 2020 study, they used a tool that viewed both clinical and patient criteria for scoring patients based on their acuity level using a numerical value from 1-4. In the Firestone-Howard et. al. (2017) study, an acuity tool was created that incorporated the Harper and McCully Scale (Harper & McCully, 2007) to determine patient acuity based on social and intellectual criteria along with the medical needs of the patient. Meyer et. al. (2020) used an acuity tool comprised of 9 areas to determine a patient's acuity. These areas included assessments, medications, lines/drains/airways, risks wounds, orders, and activities of daily living, admission and transfer/discharge orders. Development and implementation of a workload acuity tool can assist in the creation of a fair and balanced nursing assignment (Ageiz & Abd El-Mageed, 2020). In the studies by Al-Dweik et. al. (2019), Ageiz et. al. (2020) and Firestone-Howard et. al. (2017), a paper acuity tool was utilized to determine the patient's workload while Meyer et. al. (2020) used an electronic acuity tool incorporated in the organization's electronic health record. This automation allowed for changes in the acuity levels to be generated seamlessly based on nursing documentation; ultimately ensuring an accurate and up to date workload score. This contributed to a more accurate workload assessment.

### ***Nurse Satisfaction.***

Float nurses consistently report dissatisfaction with their workload due to the inequality of patient assignment allocation. Utilizing a workload measurement tool to determine the complexity of nursing care when creating nursing assignments creates a more equitable assignment (Al-Dweik & Ahmad, 2019; Meyer et al., 2020). Nurses report satisfaction when their

patient assignment is deemed fair and balanced (Ageiz & Abd El-mageed, 2020; Al-Dweik & Ahmad, 2020, Al-Dweik & Ahmad, 2019; Meyer et al., 2020).

In Ageiz & Abd El-mageed's, 2020 study, they sampled 178 nurses and 33 first line managers in a hospital setting to assess nurses' satisfaction related to implementation of a patient acuity tool for the creation of patient assignments. A questionnaire containing 25 items was used to determine nurses' satisfaction with their assignments (Ageiz & Abd El-mageed, 2020). Nurse Managers utilized a Likert scale containing 10 items to determine their opinions of implementing an acuity tool to create nurse assignments (Ageiz & Abd El-mageed, 2020). The results showed significant improvement ( $p=0.001$ ) in nurses' satisfaction with the use of an acuity tool. The highest rate of nursing satisfaction was found in those nurses between the ages of 30 and 40 years old with more than 10 years' experience (Ageiz & Abd El-mageed, 2020). The validity of the tools used were assessed by five experts in nursing management (Ageiz & Abd El-mageed, 2020). Prior to the actual data collection, a pilot feasibility study was conducted in an alternate clinical area which allowed for modifications prior to the full implementation (Ageiz & Abd El-mageed, 2020). Conducting a longitudinal study would be necessary to determine duration of these results associated with the use of the tool (Ageiz & Abd El-mageed, 2020).

Al-Dweik & Ahmad (2020) conducted a qualitative study on a medical/surgical unit to determine nurses' perspectives on the nursing assignment process following implementation of a patient acuity tool. A total of 13 participants were selected (Al-Dweik & Ahmad, 2020). 7 were nurse managers and the remaining 4 were registered nurses (Al-Dweik & Ahmad, 2020). Results of the study were reached once there was data saturation: validating the creation of fair and balanced nursing assignments (Al-Dweik & Ahmad, 2020). The tool allowed nurses to visualize the workload that each nurse had, eliminating the perception of unbalanced assignments (Al-Dweik & Ahmad, 2020). Rigor was maintained throughout the study by utilizing experts in the field (Al-Dweik & Ahmad, 2020). Along with staff satisfaction, usage of the acuity

tool led to a decrease in medication errors, patient falls, and conflict with patients (Al-Dweik & Ahmad, 2020).

Unbalanced nursing assignments lead to frustration and perceived lack of equality leading to a decrease satisfaction (Al-Dweik & Ahmad, 2019). Al-Dweik & Ahmad (2019) created an earlier experimental study that determined the nurse satisfaction with workload after implementing a patient acuity tool in a medical/surgical unit. They used a convenience sample of 64 nurses who maintained a minimum of a bachelor's degree in nursing (Al-Dweik & Ahmad, 2019). A 3-phase process was completed for this study which included a completed socio-demographic sheet, and a 2-hour training on the acuity tool (Al-Dweik & Ahmad, 2019). The final phase assessed the outcomes using 20 question, five-point Likert scale administered after 3 months of using the tool (Al-Dweik & Ahmad, 2019). Each nurse assessed the same patient and documented the acquired acuity level for comparison purposes (Al-Dweik & Ahmad, 2019). A paired T-test established a significant increase ( $p=0.012$ ) in the nurse's satisfaction after the acuity tool was implemented (Al-Dweik & Ahmad, 2019). A longitudinal study would be beneficial to determine if the results were maintained over a longer period of time (Al-Dweik & Ahmad, 2019).

Determining if a workload tool can assist in a fair and consistent practice when creating a nursing assignment was studied by Meyer et. al. (2020) in a retrospective and prospective study at a 400-bed tertiary care medical center. A large number of records ( $n=26,985$ ) were reviewed over a 12-month period (Meyer et al., 2020). The study confirmed the ability to generate a balanced and fair nursing assignment using an acuity tool while maintaining the nurse-to-patient ratios depicted by the organization (Meyer et al., 2020). The assignments created were not only approved by the participants; they also met the standards of quality of care (Meyer et al., 2020). Due to the automation of the acuity tool, the patient acuity scores uploaded four times a day to allow for real-time documentation (Meyer et al., 2020).



Creation of a nursing assignment that is not transparent can lead to the perception of an unfair assignment. Nurses' perception of an increased workload leads to a decrease in job satisfaction (Firestone-Howard et al., 2017; MacPhee et al., 2017). Firestone-Howard et al. (2017) conducted a study using a sample of 35 nurses from a pulmonary unit to determine the relationship between workload, nurse satisfaction and the work environment. A 5-item survey was used to evaluate nurses' satisfaction with their assignments (Firestone-Howard et al., 2017). The five items included the ease of use, frequency and opportunity to use an acuity tool (Firestone-Howard et al., 2017). Results showed a significant positive relationship between nurses' perceived workload and their intent to leave (Firestone-Howard et al., 2017). Additionally, there was a negative association between perceived workload and nurse satisfaction (Firestone-Howard et al., 2017). Results also showed a 20.84% increase in nursing satisfaction when utilizing the acuity tool (Firestone-Howard et al., 2017).

A cross-sectional correlation study was conducted by MacPhee et al. (2017) to understand the effects of workload factors on nurses' emotional exhaustion and job satisfaction. In the study, a stratified random sample of 354 nurses and 118 LNP's, across several hospitals, were analyzed using a web-based survey to understand nurses' perception of their work environment and nurse outcomes (MacPhee et al., 2017). Nurses who experienced an increased workload were 3.5 times greater to report high emotional exhaustion and decreased job satisfaction (MacPhee et al., 2017).

### ***Nurse intent to leave.***

Nurse turnover is an issue that is compounded in the medical/surgical areas where nurses work in stressful conditions (Phillips, 2020). The stress of heavier workloads and increased patient acuity contribute to burnout, ultimately leading to nurse turnover (Brooks Carthon et al., 2020). The inability to retain staff will lead to an imminent shortage in nurses (Holland et al., 2019). Understanding the relationship between perceived workload and float

nurse's intent to leave will assist in producing workflows to reduce workload, burnout and modify inaccurate perceptions.

In Phillips (2020) descriptive correlational study, the perception of high workload significantly predicted a nurse's intent to leave the workplace. In the study, 58 medical/surgical nurses were selected based on the studies criteria of being in direct patient care for a minimum of two years. A large percentage (84.5%) of the nurses were female and 43.1% were between the ages of 25-34 (Phillips, 2020). A 38-item workload perception scale was utilized to measure the nurses' perception of workload and their intent to leave (Phillips, 2020). The study determined that 56% of respondents believed their workload demands were unreasonable and 43% of participants stated that they would leave their current position with 52% planning to leave their position within the next year (Phillips, 2020).

The cross-sectional correlation study by Holland et. al. (2019) concluded that an increased workload is positively associated with nurses contemplating leaving their profession. Members of the Australian Nursing and Midwifery Federation, (n-2984), 98 % of which were nurses, participated in two surveys to determine the relationship between perceived workload and intent to leave the organization (Holland et al., 2019). There was a significant positive relationship in the nurses' perceived workload and their intent to leave (Holland et al., 2019). Validity was established by conducting a factor analysis and sample demographics were evaluated to confirm that they are reflective of a wider population (Holland et al., 2019).

Throughout the literature, nurse satisfaction, nurse burnout and intent to leave are common themes plaguing organizations. Acuity tools used in the studies have rendered a positive impact on nurse satisfaction and their intent to leave the workplace.

## **Project Model and Supporting Theoretical Frameworks**

### ***Project Model***

The PDSA Cycle (Plan, Do, Study and Act), also called the Deming Cycle, was utilized in this DNP project to implement the workload tool on the medical/surgical units. The PDSA is a

cycle of continually learning and making improvements as deemed necessary for the ongoing success of the project. See Appendix B. The project utilized a workload score, automatically generated based on physician orders and nursing documentation, to determine the workload of each patient. The number is then used to ensure an equitable workload for each nurse is distributed in the nurse assignment.

This DNP project began with the Plan phase of the PDSA Cycle where goals or purposes were identified, and plans were created to move the process into action. Pre-implementation surveys were issued to the float nurses to determine staff satisfaction with their workload. Managers and assistant nurse managers, of the two selected units, were educated on the project and the expectations by the Project Manager (PM). Education on accessing and using the workload tool were conducted for the nurses on the two units along with the float pool nurses. Education was expanded to all the nurses on the two units as staff nurses may become charge-abled by the end of the project implementation. Education was conducted through zoom to offer everyone the same educational experience for the day, evening and night staff. The duration of educational sessions was approximately 30 minutes total. Education of all unit nurses, charge nurses and float nurses from both units was completed within 3 weeks. Zoom educational sessions were scheduled on multiple days during each week and at different times during day and evening shifts to capture all unit and float nurses. Managers and assistant nurse managers assigned nurses to these mandatory educational zoom sessions. Nurses were educated on accessing the workload tool and how to utilize the workload score to create a balanced nursing assignment. Educational plans for the workload tool and how to use it were reviewed by the hospital system's IT informatics experts. A list of nurses, including the unit nurses and charge nurses, for each pilot unit and the float pool were provided to the PM by the unit managers. This list assisted in validating that all nurses had been educated on accessing and utilizing the workload score.

During the Do phase, implementation begin simultaneously on the two selected units and occurred for 3 months. The workload score was used by the charge nurse when creating the nurse assignments daily. Higher workload patients were paired in the assignment with those patients with a lower workload score. All nurses would have comparable cumulative workload scores upon the completion of the nurse assignments. The PM along with the unit manager and assistant nurse manager ensured that charge nurses were using the workload tool. A visual scan of the daily assignment sheets indicated if the workload scores were being utilized and that the assignments were balanced based on the total patient workload scores entered on the assignment sheets. Bi- weekly meetings between PM, unit manager and Asst. nurse manager were held to review progress.

After three months of implementation, the Study phase began. The outcomes of the process were monitored and validated to determine if any areas improvements were required. The float nurses were asked to complete a post survey to evaluate their job satisfaction. Pre and post implementation satisfaction scores on questions 1-6 of the pre and post job satisfaction surveys were compared using a paired t-test. A brief program evaluation survey was also given to charge nurses and evaluated descriptively. Feedback was analyzed to determine if any modifications to the implementation were required.

During the Act phase, the data collected during the Study phase, was utilized to make appropriate modifications to the implementation for future implementation throughout the medical surgical units.

### ***Supporting Theoretical Framework***

The supporting framework for this DBP project is the Adam's Theory of Equality, developed by John Stacey Adams. This theory suggests that a correlation exists between the input and outcome of an employee's performance at work based on their perception of equitable or inequitable behavior (Maharjan, 2018). One assumption of the equality theory is that

employees demand fair treatment from their organization (Maharjan, 2018). The float pool nurses verbally denounce the perceived unfair assignments that they receive with the expectation that the organization should uphold equitable assignments for all staff. A second assumption is that employees who feel they are being treated unequally, will reduce their disparity by either balancing their performance or by leaving the company (Maharjan, 2018). Conceptualizing this theory will increase float pools nurse's intent to leave the organization in order to rid themselves of the imbalanced workloads that they receive on a daily basis.

### **Organizational Assessment**

The large urban hospital is a non-profit, acute care facility that cares for patients of all ages from pediatric to adult to geriatric. It provides a full range of inpatient and outpatient services in cardiology, surgery, cancer treatment, orthopedics, radiology, emergency medicine, women's health services, family services, behavior health along with a collection of specialized services. The hospital's vision strives for employee satisfaction. This environment and culture are conducive to the implementation of the workload tool.

The hospital's system float pool comprised of approximately 200 nurses. Within this system float pool are single deploy nurses and full deploy nurses. The single deploy nurses only float to the different units within one delivery network. The full deploy nurses float to four delivery networks within the system. The organization encompasses 4 delivery networks and has approximately 35 single deploy medical surgical nurses that work solely at this urban hospital. The full deploy float nurses are assigned to each delivery network based on the felt vacancy on each unit. All float nurses cover sick calls, PTO, and leave of absences.

The leadership at the hospital are focused on staff satisfaction and retaining nurses. Biannually, leaders meet with staff to discuss concerns and areas of improvements. A common complaint for the float nurses are the inequality of the nurse assignments. Float nurses voice their concerns that they receive the highest workload, the most patients on isolation

precautions, and the patients known to the unit as a difficult patient due to their consistent calls for needs and attention. Initiating a workload tool will rectify this concern.

### ***Strengths, Weaknesses, Opportunities and Threats***

A graphic representation of the SWOT is located in Appendix C.

**Strengths.** This hospital has several strengths that help in supporting the float nurses. The float nurses are highly trained and skilled in caring for patients. They endure a rigorous orientation process that is longer compared to the unit staff. This includes training to care for patients in specialty units including: the angio suite, geriatric psychology, women's care, burn unit and the emergency room.

Nursing Professional Governance allows float nurses the opportunity to join a council and become accountable for change within the organization. These councils engage staff and allow their input to be brought forward for collaboration in decision-making. Nursing Professional Governance councils will be used to assist in the educational and ongoing support for the implementation of the workload tool.

Float nurses have access to a SWAT nurse (named after the Los Angeles Police Department; Special Weapons and Tactics), which is a critical care nurse, dedicated to the medical/surgical areas. They monitor patients and receive alerts when a patient is deteriorating and quickly assists the primary nurse to determine the next steps in the patient's care plan. The SWAT nurse is also used as support and education when a patient's condition requires further clarity and assessment.

The hospital has also recently implemented a coach role. The coach is a senior single deploy float nurse who assists all medical/surgical nurses once they are off orientation. The coach receives a list of staff that are on during their shift and the units that they are working on. The coach seeks out the new nurses to ensure that they are up to date on policies, any changes that have recently occurred or assists with new procedures that may not have been experienced

during orientation. The coach can also be reached via a paging system if the new float nurse has a question or needs assistance.

All new graduate float nurses are enrolled in the hospital's residency program. The residency program is a yearlong program where the float nurse meets once a month in a cohort and learns a specific nursing topic each class. These meetings not only allow for supplemental education, but also allows the new float nurse the ability to meet new nurses hired throughout the in-patient areas.

Recently, the hospital has had a compensation review and all nurse wages were increased to be competitive to the area hospitals. We also have a clinical ladder program called SPIRE (Scholar, Practitioner, Innovator, Researcher, and Educator) that allows float nurses to advance their career for a monetary increase.

The hospital offers a generous benefits package which is attractive to new float nurses. The package includes health, dental and vision insurance that starts on the day of hire. Employees can take advantage of furthering their education with the hospital's tuition reimbursement which also starts on the day of hire. They also provide prescription drug assistance, and employee and family support: including educational support for children of employees.

The hospital is part of a larger, well-known system, which attracts employees. Individuals want to join this hospital for the name recognition and opportunities that the hospital can afford them.

**Weaknesses.** Due to the extended orientation process, the ability to hire new float nurses and have them available to work undependably takes a longer period of time. During high census periods, these vacancies place a strain on the float nurses to provide adequate staffing throughout the in-patient units.

The hospital's infrastructure does not allow for expansion to accommodate the growing patient demands. Therefore, overflow areas are opened in unused portions of the hospital

where patient census is decreased allowing to care for additional patients. These areas are staffed by the float nurses.

This hospital does have a higher nurse to patient ratio versus other hospitals which is less desirable for nurses. It also does not adhere to a patient ratio mandate. Nurses can be assigned a higher number of patients in order to properly care for the increased census; preventing patients from waiting in the emergency room while open beds remain in the inpatient units.

**Opportunities.** Covid-19 pandemic required vaccination and testing sites to open; registered nurses left the bedside to work in these clinics where they administered Covid tests and vaccines. Covid vaccine and testing sites are starting to close, decreasing the needs of nurses at these locations.

Traveler pay, which was exponentially increased during the Covid Pandemic is now beginning to subside. Nurses left area hospitals to join travel agencies where they benefited from the gross inflation of their salary. With the reduction of traveler pay, more nurses may want to return to a local hospital.

**Threats.** Several local hospitals in the area compete with the available nursing applicants. This urban hospital is located near a larger city. Due to the relative closeness, compensation wages are notably higher in and around that city. Although compensation has been adjusted to the local hospitals, traveling a short distance outside the local area will deliver higher wages not considered in the recent compensation increase.

Many of the local hospitals also have sign on bonuses for experienced nurses. Therefore, float nurses who are currently working in the float pool and maintain the minimum years needed for a transfer to one of these other hospitals are attracted by the monetary enticement. Float nurses are highly regarded candidates for their knowledge base gained in a short period of time.



With the current COVID pandemic, travel nursing has become glorified. The flexibility and knowledge that a float nurse possesses allows them to be the perfect candidate for a travel position. They are used to floating to different areas of the hospital and having new patient assignments. Their flexibility can be carried to a travel position where they change their assignments and the hospitals that they work in after a few weeks.

### **Goals and Aims of the Project**

This DNP project developed a protocol for the use of an existing workload tool: “Workload Score”, to implement balanced and transparent nurse assignments on two medical/surgical units in a large urban healthcare system. Epic Wisconsin provided the foundational build for the Workload Score. The health system took the foundational build and created the current rules and scores that make up the Workload Score. This was a collaborative build with Adult Bedside Nurse Leaders across the Health System, Nursing Informatics, and Epic/ITS Clinical Analysts. Through systematic use of this tool, the project aimed to increase float nurses job satisfaction on these units and thus reduce their intent to leave the organization. It is a foundational project for future application in other inpatient units.

The aims of the project are:

- 1) Development of a protocol for nurse assignments on inpatient medical/surgical units utilizing the workload tool.
- 2) Implementation and evaluation of the protocol.
- 3) Recommendations were made for scaling and sustainability of the protocol throughout the healthcare system.

## Part 2

### Methods

#### Overview of Methods

This process improvement DNP project developed a protocol for use of an existing workload tool: “Workload Score”, to implement balanced and transparent nurse assignments on two medical/surgical units in a large urban healthcare system. This was a collaboratively developed tool with adult bedside nurse leaders across the Health System, Nursing Informatics, and Epic/ITS Clinical Analysts and was implemented on two units undergoing workload stress with respect to float nurse assignments. Through testing of this tool, the project aimed to increase float nurses job satisfaction on these units. All nurses and managers on these units took part in the project as these units served as models for this roll out.

#### ***Aims of the Project are as Follows:***

1. Development of a protocol for nurse assignments on inpatient medical/surgical units utilizing the workload tool.
2. Implementation and evaluation of the protocol.
3. Recommendations were made for scaling and sustainability of the protocol throughout the healthcare system.

#### **Aims and Associated Methods**

***Aim #1.*** Development of a protocol for nurse assignments on inpatient medical/surgical units utilizing the workload tool.

A protocol for the use of the workload tool was created.

- The workload score is generated automatically by physician orders and nurse documentation consisting of the following categories: Assessment, ASL’s, Test Treatments and Restrictions, Wounds, Neurological/Behavior/Social Rules. The workload scores for patients range from approximately 40-350 based on patient

workload demands: the higher the workload score, the higher the nursing workload. The workload score is updated by a batch job that runs on the server every 60 minutes.

### **Recruitment**

- Participants included approximately 35 float nurses, along with the charge-abled unit nurses on two medical surgical units consisting of approximately 28 beds each at a major inner-city hospital, part of a large healthcare system. These two units were selected units after running a report for the month of November 2021 to determine where float nurses were assigned. These two units utilized float nurses with the highest frequency. This report and findings were discussed with the hospital's CNO for input and selection of units.
- The nurse managers and assistant nurse managers of the selected units were enlisted as key stakeholders in this project. These unit leaders were responsible for ensuring that workload tool was utilized in the creation of nurse assignments and were closely involved in the tracking and implementation of the project. They were educated by the PM on the problem statement and the goal and aims of this project. In addition, a schedule of bi-weekly meetings were scheduled with these nursing leaders and the PM to monitor the project for fidelity and any problems that may arise.

### **Development of Pre and Post Surveys and Program Evaluation Tool**

- Two surveys, a pre-implementation employee satisfaction and a post-implementation employee satisfaction, were developed using Qualtrics XM Survey Application. Both surveys remained confidential, participant's names were not utilized. However, due to the surveys being issued to the float nurses, their identity is known to the PM only for purposes of survey distribution. To de-identify this data, a Master Contact List will be used to list employee identifiable

information along with an assigned project code number which is the float nurse's year of birth plus their first 4 digits of their employee ID number. The project code number was used on all data collection tools. The Master Contact List was stored electronically on an encrypted laptop accessible only to the PM.

- The pre-implementation employee satisfaction survey was a 6 question Likert Scale survey to determine float nurses' job satisfaction with three additional questions to obtain the nurses' demographics. 5 of the Likert questions were retrieved from Cox's (2003) Individual Workload Perception Survey. The additional 6<sup>th</sup> Likert question was self-created and asks if the respondent feels their workload is comparable to other nurses on the unit. Survey answers range from *strongly disagree* (1) to *strongly agree* (5). The post-implementation employee satisfaction was the same survey as the pre-implementation employee satisfaction excluding the three demographic questions. The post-implementation employee satisfaction survey used the same project code number assigned in the pre-implementation employee satisfaction survey. This allowed the post-implementation employee satisfaction survey to be linked to the same respondent that completed the pre-implementation employee satisfaction survey: which allowed results to be evaluated on a respondent-to-respondent basis.
- The program evaluation survey was a 4-question descriptive survey created in Qualtrics XM Survey Application. The survey was confidential and did not have a project code. Each question was answered with a Yes or No and requested that the respondent adds a comment for each question. The questions ranged from how easy is the workload tool to use, how accurate do you feel the workload tool is, is the workload tool helpful in creating a balanced assignment and does the tool assist with reducing perceptions of an unbalanced assignment. A free form

allowed respondents the ability to add comments for further information regarding the usage of the workload tool. The program evaluation survey was not linked to the respondent and was be emailed confidentially to the unit nurses: which included the charge nurses. Unit and charge nurse names and email addresses were known to the PM only and were be stored electronically on an encrypted laptop accessible only to the PM.

***Aim #2.*** Implementation and evaluation of the protocol.

### ***Implementation***

- Approximately one month prior to the intended unit implementation date, float nurses were emailed a survey link and QR code produced by Qualtrics which allowed recipients access to the confidential pre-implementation employee satisfaction survey. Float nurses were prompted to enter their year of birth and the first 4 digits of their employee ID to access the survey.

### **Education**

- The PM assisted the float nurses and charge nurses with formatting their electronic Medical Record (EMR) profile to display the workload for each patient. This allowed transparency of workload for each nurse. The workload scores were visual for all patients and allowed staff to highlight the score to determine the assessments that comprised that score.
- Charge, unit and float nurses were educated on utilizing the workload tool over a three-week period. Unit nurse were included in this education as they may become charge-able within the three-month implementation period. Float nurses are also educated as they could be a charge nurse when needed and to ensure they have the ability to view patient workload scores to provide transparency in the nurse assignments. A 30-minute Zoom education session was conducted by

the PM utilizing a PowerPoint workload tool education. The PM educated the nurses by creating a nurse assignment exemplar utilizing the workload scores to create balanced assignments. The workload score was used by the charge nurse when creating the nurse assignments. Higher workload patients were mixed in the assignment with those patients with a lower workload score. All nurses had comparable cumulative workload scores upon the completion of the assignment. Nurses were also educated that charting should be completed throughout the shift as the Workload Score is updated based on nursing documentation and is updated every 60 minutes.

- During this time, the PM presented key evidence showing that when float nurses perceive that they are receiving unbalanced assignments it leads to a decrease in nurse satisfaction and an increase in their intent to leave the organization. Unit managers and assistant nurse managers worked to ensure attendance at the mandatory Zoom educational sessions.
- Following the education period, charge nurses on the two selected units completed nurse assignments utilizing the workload tool to maintain comparable workload cumulative numbers for each nurse.
- The PM rounded on the units weekly to assist with the charge nurses with utilization of the workload scores to create the nurse assignments.
- Bi-weekly meetings were held by the PM with nursing leadership on the units to check for fidelity and to monitor progress of the project. Feedback was elicited, and all problems were reviewed. A record of these meetings was kept as an audit trail for final review and to make recommendations for improvement upon completion of the project.

- Managers and assistant nurse managers of the two pilot units verified that charge nurses were utilizing the workload tool by visualizing the workload score for each patient on the daily nurse assignment sheets.
- Duration of the project implementation on units was 3-months.

### ***Evaluation***

- Post surveys and program evaluations were completed upon conclusion of the 3-month implementation.
- Upon completion of the 3-month implementation period, the PM emailed a survey link and a QR code provided by Qualtrics to float nurses' work email addresses. The email contained a request to complete a confidential post-employee satisfaction survey to evaluate their workload satisfaction via Qualtrics. The post survey contained the same 6 questions as in the pre-survey without the demographics section. Upon accessing the survey, float nurses were asked to enter a code made up of their year of birth and first 4 digits of their employee ID. This numeric identifier was authenticated the float nurse and allow the pre and post surveys to be linked to the respondent for evaluation purposes.
- A brief program evaluation survey was also emailed by the PM to the charge and unit nurses and evaluated descriptively. This evaluation survey was given to all unit nurses as they are involved in the workload tool education and may become charge enabled during this 3-month implementation period. This program evaluation was emailed through a survey link and a QR code produced by Qualtrics to all nurses on the two units via their work email addresses provided by the unit managers. The survey was sent both as a link and a QR code to allow user preference for accessing.

- A systems' statistician was consulted to run a paired T test utilizing R Core Foundation Statistical Programming tool to compare Pre and Post satisfaction surveys to evaluate float nurse satisfaction with their workload after use of the workload tool. The program evaluation surveys were analyzed qualitatively.

**Aim #3.** Recommendations were made for scaling and sustainability of the protocol throughout the healthcare system.

### ***Sustainability***

The findings of this project were be presented to hospital leadership. This included a number of recommendations:

1. The IT department will continue to work with the Electronic Medical Records (EMR) team to update the workload tool as needed to ensure that the workload scores are up to date and referencing the appropriate assessment rules.
2. Managers and assistant nurse managers will be responsible to ensure that their charge nurses are utilizing the workload scores when creating nurse assignments.
3. A workload wizard tool is available in the EMR that utilizes the workload scores to automatically create nursing assignments with the charge nurse input and upon determining charge nurses ease of using the workload scores, the workload wizard can be introduced to assist in creating assignments in a fraction of the time.

### ***Scaling***

Upon successful implementation, recommendations were made to hospital leadership for scaling up by implementing on similar units in the delivery network and throughout the health care system.

### ***Dissemination***

Successful implementation results were shared by the PM during manager meetings in the local delivery network. The PM presented findings in a poster presentation at two regional



conferences and will submit abstracts to the Journal of Nursing Administration and the MedSurg Nursing Journal. The CNO will hold a Zoom meeting with the CNO's at each delivery network to allow the PM to disseminate the successful implementation. The PM will be invited by the delivery network's CNO's to disseminate the implementation results to the unit managers throughout the health system at a monthly manager meeting.

***Project Timeline***

This DNP project took place over a 5-month time period (See Appendix D).

***Statement related to human subjects***

This DNP project was deemed a Quality Improvement project by the Yale University IRB. It poses minimal risk to participants.

## **Part 3**

### **Systems, Policy and Business Implications**

#### **Systems Overview: Leadership, Business, Policy**

The health system recently underwent a systemization of their float pools from a singular delivery network float pool to the current system float pool. Prior to the change, float nurses would only assist the delivery network where they were hired. With the systemization, we now have two groups of float nurses; single deploy and full deploy float nurses. Single deploy float nurses were hired as singular delivery network float nurses prior to the systemization. They are grandfathered into this new system float pool and will continue to assist only the delivery network that they were originally hired into. The full deploy float nurses are assigned to all delivery networks in the health system to assist with staffing needs on the inpatient units. All new nurses hired into the system float pool are assigned as full deploy nurses. This will allow the organization the ability to move staff to delivery networks where staffing needs are the greatest.

The health system is in agreements for an acquisition of additional health systems. The float pool will become vital in sustaining the nursing support for all of the health system delivery networks including these new hospitals. This increase of staffing support will facilitate the expansion of the system float pool. Float pool nurses job satisfaction will be paramount to ensure we retain and grow our department of nurses ensuring sufficient available resources.

#### **The Business Case and Leadership Engagement**

##### ***Leadership and Stakeholder Engagement***

The Director of Nursing Excellence was the scholarly mentor for this Project. The Director of Patient Care Services was the site preceptor. The student assumed the role of the PM for this DNP workload tool implementation. The PM is the Clinical Program Director of the system float pool. The health system's IT experts reviewed the educational PowerPoints prior to educating the staff. The PM collaborated with the managers and assistant nurse managers of

the two units selected by the hospital's Chief Nursing Officer. The managers and assistant nurse managers provided the unit staff contact information and assign the education to the unit staff. The PM held bi-weekly Zoom meetings with the managers and assistant nurse managers to determine any barriers to the implantation of the workload tool on their units. The Executive Summary was presented to both the hospital's leadership along with the health systems nursing leadership with suggestions for expansion throughout the system and for the sustainability moving forward.

### ***Business / Financial Considerations***

The financial implications for initiating the workload tool on medical surgical units indicates an initial cost of training of approximately \$3,245. This value denotes training approximately 90 nurses, which includes 40 float nurses, plus all nurses on the 2 pilot units. This will allow the unit nurses the ability to use the workload tool to create the nursing assignments and the float nurses the ability to see that all assignments are balanced. For year 1, an additional \$5,040 in training costs will incur to train all the nurses on the remaining 7 medical/surgical units. After year 1, no further training costs will incur as train the trainer will be implemented; all new staff will be trained to use the workload tool by their preceptor during their orientation.

The workload tool has already been created in our electronic medical record application, Epic. There are no additional costs related to the creation or purchase of the tool. Minor upgrades to the workload tool may be necessary to ensure accuracy of the tool. The average programmer salary in Connecticut is \$70,775 as of December 27, 2021 (Salary.com, n.d). This equates to \$34 per hour. An average of 40 hours per year may be necessary to keep the application up to date. This equates to \$1,360 per year for application maintenance and support.

Literature review denoted a 20.87% increased satisfaction rate using a workload tool (Firestone-Howard et.al., 2017). With approximately 40 float nurses, this equates to 8 nurses that will express an increased job satisfaction. Nurse job satisfaction is a considerable indicator

for intent to leave; with high job satisfaction reducing turnover (Nantsupawat, 2017). Nursing Solutions, Inc, (2020) estimates an average nurse turnover cost is \$33,000. Therefore, by increasing 40 float nurses job satisfaction by 20.84% we can see an indirect benefit of \$277,589 per year. For this budget purpose to remain on the conservative side, the PM will factor that 1 float nurse will have an increased job satisfaction which will prevent their resignation from the delivery network; a savings of \$33,300 per year.

Float nurses reduce the need for using High Incentive Pay (HIP) along with overtime pay to encourage staff to pick up additional shifts; a savings of between 2%-5% of labor costs (Lebanik & Britt, 2015). The hospital employs approximately 330 in-patient medical/surgical nurses with an average annual salary of \$75,000 per nurse. This equates to labor cost savings of \$495,000 - \$1,237,500 annually. The lower average has been used to remain conservative in this budget.

Float nurses are also a cost-effective means of addressing fluctuating patient census while reducing the need of per diem staff and the use of costly temporary staff via an agency (Dziuba-Ellis, 2006). Utilization of travel nurses cost an organization an average of \$4,203,680 annually for every 20 nurses (Nursing Solutions, Inc, 2020). In 2021, the hospital utilized 10 medical/surgical travel nurses for an average cost of \$706,000. Although they hope to eventually be traveler free, this process will occur over a period of time. A 15% reduction in the hospital travelers' usage is captured on this budget for year 1, with an increase of 15% savings per year for a 60% reduction in traveler usage in year 4 and a savings of \$423,600.

Implementing the workload tool throughout the hospital medical/surgical units has a conservative ROI direct benefit of 17048% with a payback timing of 0.2 months. The hospital system has already incurred the cost to purchase and configure the tool for the hospital's usage. Refraining from implementation will waste the funds used for the adopting the tool and configuring it to our practice. Implementation will produce a benefit to their staff and their bottom line.

### ***Risk Assessment and Risk Mitigation Plan***

The risk assessment for this DNP project, see Appendix E, denoted a high risk with high probability and impact for charge nurse defiance in utilizing the workload scores to create a balanced nursing assignment. The other areas of high impact with a medium risk and probability are the unit managers commitment to encourage their staff to use the workload tool when creating nursing assignments. To assist with mitigating these risks, the PM met with the unit managers and their director to discuss the implementation, along with the benefits of a successful implementation. increased float nurse job satisfaction will assist their units by reducing the risk of float nurses leaving the organization. Float nurses assist the units when they are short staffed due to schedule holes or sick calls. Without the float nurses, their units would be working short staffed. Once the buy-in from the unit managers was achieved, they were inclined to require their staff to comply with using the workload tool to create the nurse assignments. The PM met with the unit managers bi-weekly to review the staffing sheets to validate that the workload tool is being used. The PM also met with the charge and unit nurses bi-weekly to determine any barriers with utilizing the workload tool, answer any questions, and encourage the usage of the workload tool.

## Part 4

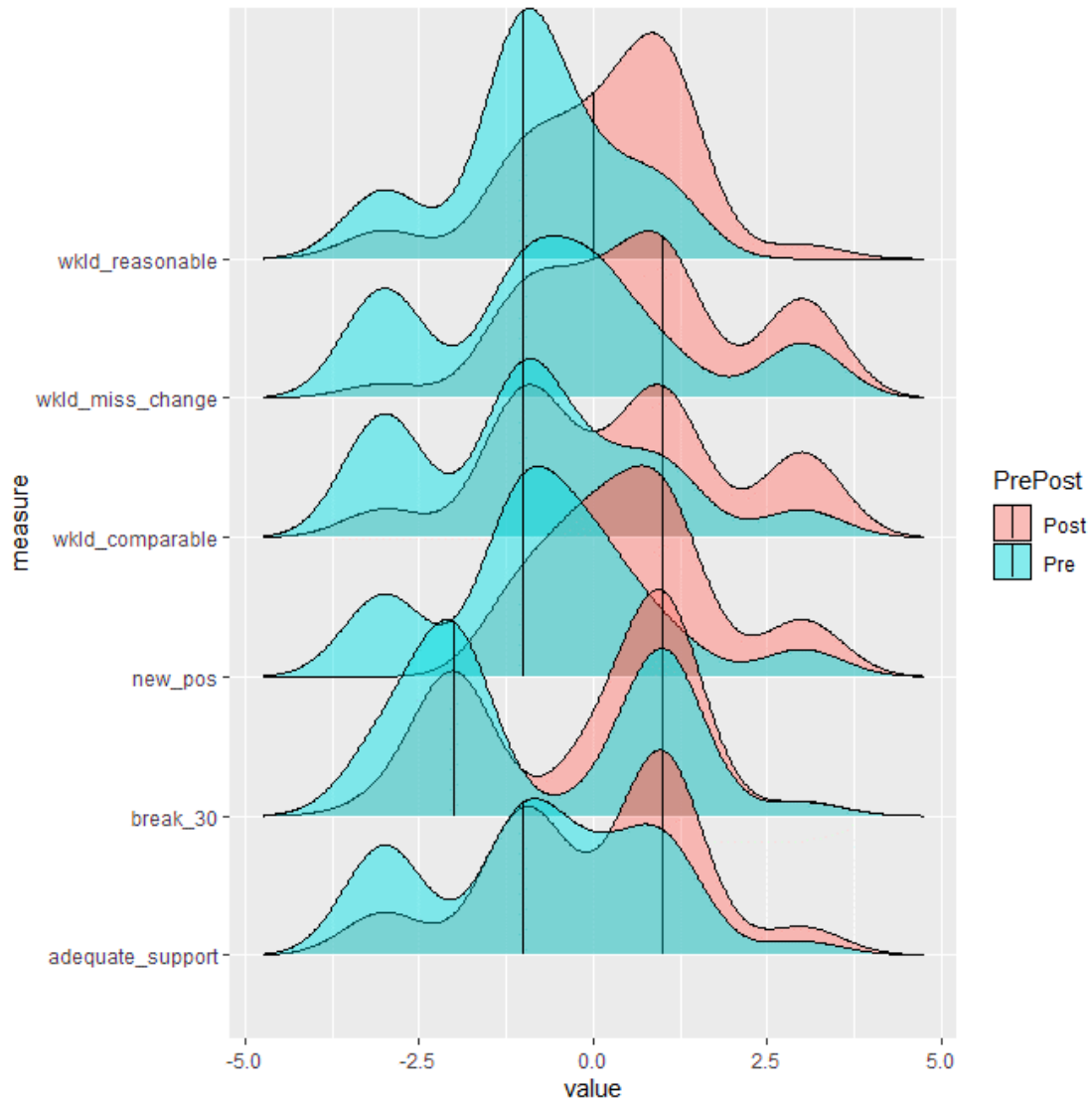
### Results

Of the 35 float nurses, 30 nurses completed both the pre and post implementation surveys (N=30). Two questions were reversed, “My current workload will cause me to look for a new position” and “There have been times when the size of my workload caused me to miss an important change in a patient’s condition.” This was done, to streamline positive survey answers. Pre and post test results were analyzed using a paired T test conducted with the R Core Foundation Statistical Programming tool. Each of the six survey questions were statistically significant in a positive direction (See Table 1). The two most relevant findings with respect to the project goals were: perceived comparable workload  $t(30) = 3.5002$ ,  $p = 0.001476$ , and reduced their desire to look for another position  $t(30) = 4.4877$ ,  $p = 0.00009852$ . Figure 1 depicts a visualization of the results from the pre and post implementation survey.

**Table 1.** R Core Foundation Statistical Program Results.

Question	N	Mean Diff	t (30)	p-Value	95% confidence interval of the Difference	
					Lower	Upper
I am able to take a 30-minute meal break during my shift?	30	0.7741935	2.1788	0.03733	0.0485187	1.4998683
My current workload will cause me to look for a new position.	30	1.322581	4.4877	0.000098	0.7207026	1.9244587
Most days, I feel my workload is reasonable.	30	1	3.4981	0.001484	0.41618	1.58382
There have been times when the size of my workload caused me to miss an important change in a patient’s condition	30	1.290323	3.7796	0.000697	0.5931168	1.9875284
I am able to provide adequate physiological/ emotional support to patients assigned to me.	30	0.8064516	3.1025	0.004158	0.2755845	1.3373187
I feel that my patient workload is comparable to other nurses on the unit.	30	1.290323	3.5002	0.001476	0.5374464	2.0431988

**Figure 1.** Comparison of pre and post implementation survey.



The program evaluation survey was completed by 22 out of the 50 charge and unit nurses. Three out of the 22 felt the workload tool reflected the workload required for the patient. Twelve out of 22 felt the workload tool was easy to use. Ten out of 22 felt that the workload tool helped to create a balanced nursing assignment and 16 out of 22 felt that visualizing the workload reduces the perception of having an unbalanced assignment. Common responses regarding whether the workload tool reflected the actual workload required focused primarily on

patients that had behavioral needs or those needing constant interventions. Respondents felt that those patients' workload scores did not actualize the accurate workload. Charge and unit nurses felt that if the workload score was more accurate for these patients, it could assist with creating a balanced nursing assignment. Staff felt that last minute staffing changes made the workload score time consuming. In regard to the workload score reducing the perception of having an unbalanced assignment, one staff member stated it would give "peace of mind" while another felt staff would "continue to complain even if assignments were balanced".



## Part 5

### Discussion and Conclusion

#### Discussion of findings

The workload tool was piloted on two medical / surgical units in an urban hospital to determine if it could assist in creating a balanced nursing assignment for the float nurses while increasing their job satisfaction. Statistically significant findings were achieved for each of the 6 pre and post implementation survey questions demonstrating an increase in float nurses' satisfaction. With the direct link between job satisfaction and turnover, utilizing the workload tool addresses equitable patient care assignment for float nurses, with direct implications for float and unit nurse retention, with concomitant cost savings to the organization. The current nursing shortage is a financial burden to the organization, utilizing the workload tool will assist in retaining staff and reduce the use of costly travel nurses and incentive pay to encourage staff to pick up additional shifts.

#### *Modifications for Sustainability*

The evaluation from the unit and charge nurses favored the workload tool to assist in reducing the perception of having an unbalanced assignment. However, a majority of the unit staff felt that the workload score was not accurate due to patients with non-compliant behavioral issues who needed increased reassurance through in-person rounding. Although education was emailed to unit nurses with tips on how to document in the EMR to capture these patients, it was not sufficient. Therefore, the Workload Score was not accurately depicted for these patients. For future sustainability, a tip sheet and Workload Score Video training will be available for all nurses on how to document on patients with behavioral challenges to properly calculate the appropriate workload for these patient populations. As this implementation is expanded throughout the hospital and organization, all nurses will need to be educated on using the Workload Score. At this time, nurses will also be educated regarding documentation on non-compliant behavioral patients.

Unit nurses also mentioned that the Workload Score does not capture patients scheduled for discharge which causes an increase in the nurse's workload. Discharge orders are not entered until the physician sees that patient which occurs during a nurse's shift. EPIC now has the ability to capture 24-hour discharges and IT has incorporated this into the Workload Score. Nurses will now observe a higher Workload Score for patients that will be discharging within 24 hours.

Using the Workload Score was also mentioned as time consuming to manually add the Workload Score for each patient. If there was a last-minute staffing change, the assignments would need to be changed and the Workload Scores would need to be recalculated. All education for the Workload Wizard has already been created and will be forwarded to the education department for dissemination to the unit staff. Additional educational material will be created by the IT team to address non-compliant patients and where to document to capture the workload score applicable for these patients. Any application concerns will be forwarded to the IT team to address.

### ***Recommendations for Scalability***

This implementation will be expanded by utilizing the Workload Wizard to assist charge nurses in automatically creating a balanced workload assignment. Using the Workload Wizard, charge nurses will no longer need to take the time to manually add up each patient's Workload Scores. The Workload Wizard will make suggestions on which nurse should be assigned to which patient based on continuity of care and room proximity while ensuring a balanced Workload Score. The Workload Wizard will also assist with assigning new admissions to the nurse with the lowest Workload Score. After implementation at this one urban hospital, expansion throughout the system will ensue by first disseminating the project results and successful implementation to the Chief Nursing Executive of the healthcare system. Strategic planning will then take place to roll it out to the other hospitals in the system. Adaptation of the workload tool will comply with the organization's care signature.

### ***Broader Healthcare Systems Implications***

Staffing shortages across the United States have a large impact on safe patient care and causes a financial burden to organizations. Utilization of the Workload Score has shown to increase float nurse satisfaction and reduce their intent to leave the workplace. This reduces the need to hire costly travel nurses along with increased overtime and incentive pay to encourage staff to pick up additional shifts. Across the healthcare system, implementation of this project will save the organization increased staff expenses.

### **Conclusion**

Float nurses report increased frustration and dissatisfaction with their patient assignment distribution on a continual basis; citing that they often receive the highest workload and most acute patients (Al-Dweik & Ahmad, 2019). Receiving a perceived unfair assignment based on traditional methods has a negative impact on satisfaction with their work-life balance and increases the float nurses' intent to leave their workplace (Holland et al., 2019). Utilizing a workload tool to assist in creating a balanced nursing assignment has shown a statistically significant improvement on float nurses' perception of their nursing assignment and has reduced their desire to look for a new position. With the imminent nursing shortage, float nurses have the ability increase overall satisfaction for in-patient hospital nurses and reduce nurse burnout throughout the in-patient areas. This project addresses this issue directly. Findings provide strong support for the use of the Workload Tool as a means to systematically bolster job satisfaction in this sector of our already stressed nursing workforce and address the urgent problem of nursing retention. Upon implementing the Workload Tool across the health system, a Workload Wizard tool can be introduced to assist in creating a nursing assignment in a fraction of the time. The Workload Wizard is available in the EMR that utilizes the workload scores to automatically create nursing assignments with the charge nurse input.

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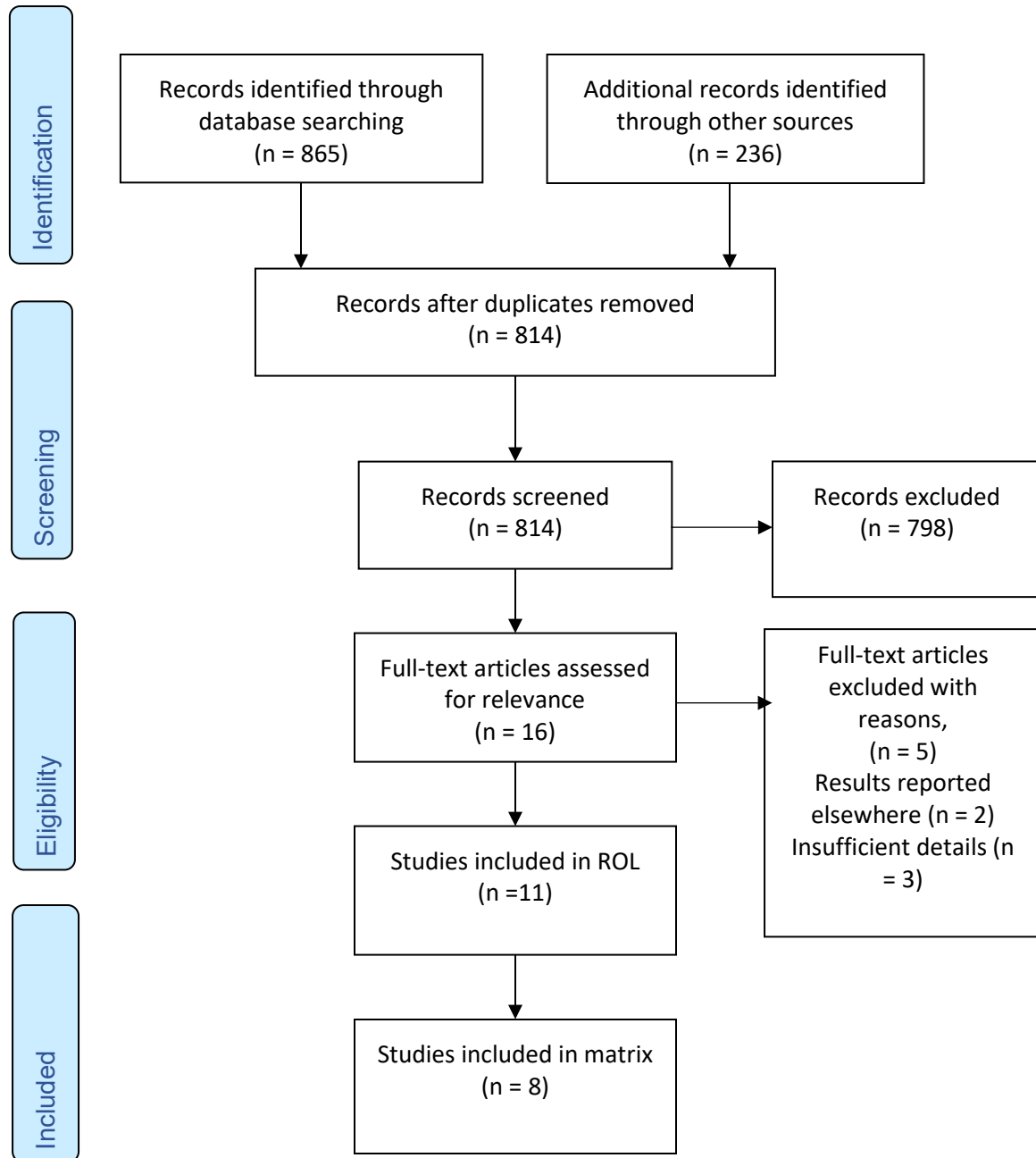
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The W. Edwards Deming Institute. (2021) PDSA cycle. <https://deming.org/explore/pdsa/>

## Appendix A

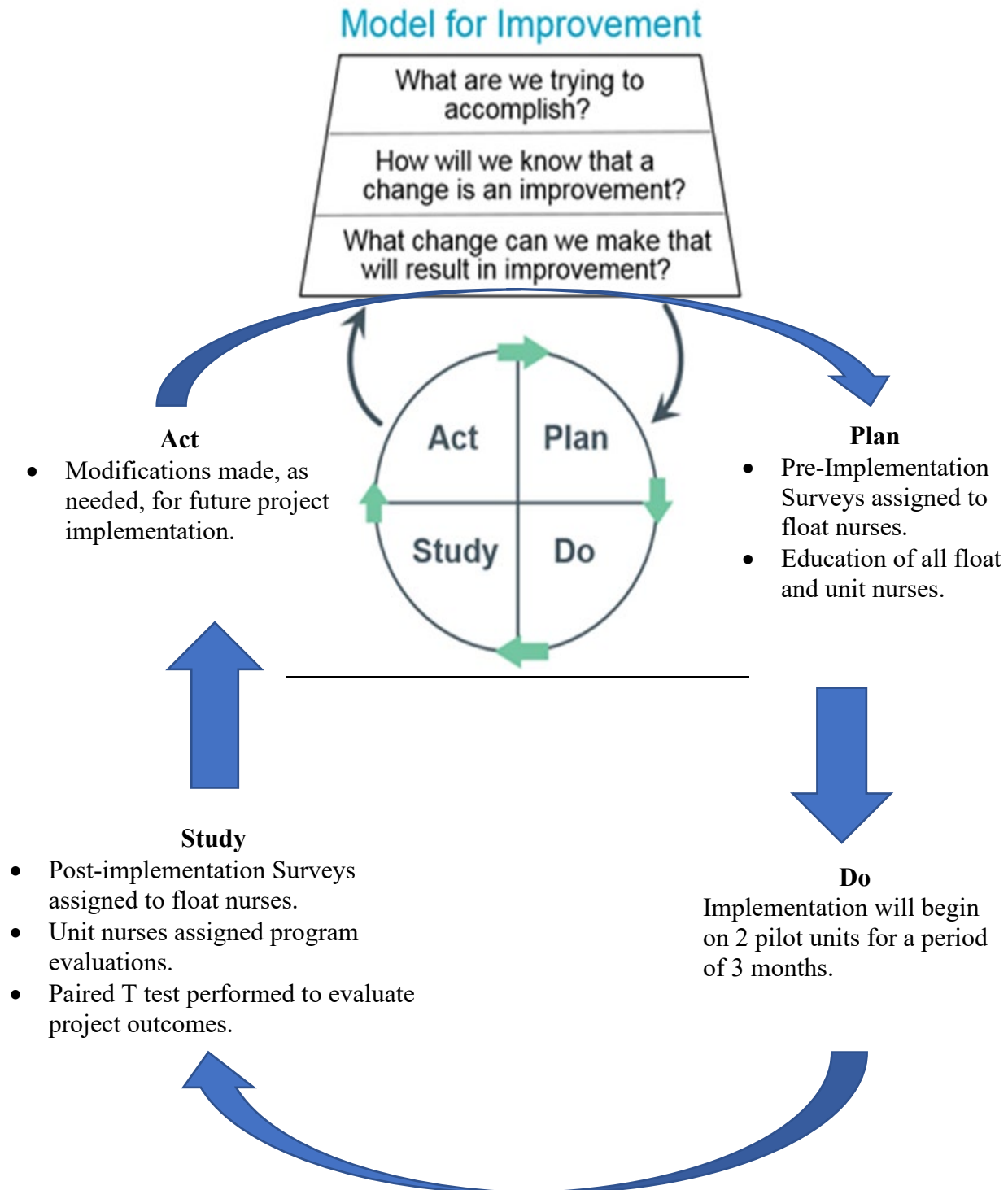
### Adapted PRISMA Study Flowchart



Adapted from: Moher et al.: Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015 statement. *Systematic Reviews* 2015 4:1.

## Appendix B

### Project Model



Institute for Healthcare Improvement (2021). [PDSA Model for Improvement Logo]. Retrieved from <http://www.ihl.org/resources/Pages/HowtoImprove/ScienceofImprovementTestingChanges.aspx>



## Appendix C

### SWOT Diagram

<b>Internal Factors</b>	<p style="text-align: center;"><b>Strength</b></p> <ul style="list-style-type: none"> <li>• Highly-skilled nurses.</li> <li>• Nursing Professional Governance</li> <li>• SWAT nurse</li> <li>• Coach program</li> <li>• New nurse residency program</li> <li>• Recent compensation increase</li> <li>• Benefits package</li> <li>• Part of larger system</li> </ul>	<p style="text-align: center;"><b>Weakness</b></p> <ul style="list-style-type: none"> <li>• No ability to expand inpatient areas</li> <li>• High nurse to patient ratio</li> <li>• Inability to hire and orient nurses quickly</li> </ul>
<b>External Factors</b>	<p style="text-align: center;"><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• Reduction in Covid-19 Testing and Vaccine clinics</li> <li>• Reduction in traveler pay.</li> </ul>	<p style="text-align: center;"><b>Threats</b></p> <ul style="list-style-type: none"> <li>• Local hospitals with sign on bonuses</li> <li>• Competitive salaries.</li> <li>• Glorification of travel nursing.</li> </ul>
	<b>Helpful</b>	<b>Harmful</b>

## Appendix D

### Gantt Chart

