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**Evaluation of nurse staffing, engagement and satisfaction in a South Carolina  
rehabilitation facility: Impact on patient outcomes**

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GPNS 961 Doctor of Nursing Practicum II

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A handwritten signature in cursive script that reads "Catherine Johnson".

7/20/21

### **Abstract**

An acute care rehabilitation facility in Horry County, South Carolina was the setting for this program evaluation of nurse staffing, engagement and satisfaction and if those factors had any effect on patient outcomes in the facility. Nursing department staffing, engagement and patient outcome data was evaluated for trends and themes. Through stakeholder meetings, data was collected, a qualitative and quantitative satisfaction survey was administered to nursing staff. Evaluation of the data occurred and revealed multiple factors that led to nursing department turnover between 2018 and 2020. During the increase in turnover, it was noted that patient falls, and catheter associated urinary tract infections increased. Satisfaction and engagement of nursing staff was evaluated through the annual facility satisfaction and engagement survey, a qualitative survey and quantitative survey based on Herzberg's two factor theory of motivation revealed specific factors related to turnover including staffing, scheduling, workload and supervisory leadership style. Recommendations for decreasing turnover, increasing engagement and satisfaction and ensuring positive patient outcomes have been included in this program evaluation.

*Keywords: Nurse staffing, nurse turnover, nurse retention, nursing engagement, nursing satisfaction, patient outcomes*

**Evaluation of nurse staffing, engagement and satisfaction: Impact on patient outcomes**

The nursing workforce in the United States is currently facing significant challenges including: Aging of the workforce, an aging population, lack of diversity, unequal distribution of nurses, and long-term impacts to the workforce created by the COVID-19 pandemic. In 2030 over 73 million people in the United States will be over the age of 65 which is 21% of the population. Comorbid conditions in this age group will place extraordinary stress on our nursing workforce, society and families (National Academy of Sciences, 2021).

Safe and adequate staffing is significant to ensure the delivery of safe, quality health care. Evidence validates that nursing care has a significant and direct impact on the overall delivery of services received by patients. When nurse staffing is appropriate, adverse events decline, quality of care is improved, and adverse events decline (American Nurses Association, 2020). Core components of appropriate nurse staffing include: Nurses functioning as full partners with other healthcare professionals in a collaborative manner, well developed staffing guidelines based on nurses-sensitive patient outcomes, collaborative staffing models that include input from nursing staff, staffing needs that are determined based on environment, patient acuity, competency, experience of staff and previous staffing patterns while abiding by federal and state laws and regulations, staffing cost should be balanced with patient care needs and reimbursement frameworks should not influence staffing decisions (American Nurses Association, 2020).

Healthcare-associated infections are sensitive to nursing care and can potentially lead to several healthcare outcomes, including increased length of stay, complications, infections, patient falls, pressure ulcers, quality of care and mortality (American Nurses Association, 2020). Size of the health care workforce in the United States is associated with patient outcomes associated with length of stay, complications, patient falls, pressure ulcers, quality of care and

mortality. Healthcare-associated infections (HAI) are sensitive to nursing care and nurse turnover. It is estimated that approximately 25% of HAI are related to indwelling devices (Van et. al., 2020).

The Institute of Medicine published *Keeping Patients Safe: Transforming the work environment of nurses* nearly two decades ago which focused on implementing system changes at the bedside and the work environment to increase quality and safety of patients in health care systems. A joint effort between the Robert Wood Johnson Foundation and the Institute of Healthcare Improvement resulted in the development of the *Transforming Care At The Bedside (TCAB)* initiative which sought to empower nurses at the bedside to collaborate with leadership and administration to develop processes to identify issues surrounding safety and quality. The *Transforming Care At The Bedside (TCAB)* was the first initiative that challenged traditional top-down models and sparked a grass roots bottom-up process to addressing the challenges surrounding quality and patient safety in nursing and healthcare.

*The Future of Nursing: Leading change, advancing health* was published by the Robert Wood Johnson in collaboration with the Institute of Medicine in 2010 which set a vision for the next ten years for the profession of nursing. The report explored the role, responsibility and education of the more than 3 million nurses in the United States which makes up the largest portion of the health care workforce. Goals were set to unfold over the next ten years that would transform nursing practice through decreasing scope of practice barriers, decreasing turnover rates, easing difficulties in transitioning from education to practice and implementation of strategies to address demographic challenges of the workforce (Institute of Medicine, 2010). Costs associated with nursing turnover rates are significant and workplace environment plays a

major role in nursing turnover. Nursing shortages increase workload and create inefficient work processes which lead to burnout (Institute of Medicine, 2010).

The Future of Nursing 2020-2030 report was released by the National Academies of Sciences on May 11, 2021. Recommendations to increase the number of nurses available in the workforce to meet the healthcare needs of the population, distributing nurses to where they are needed most in the country and overcoming long-term workforce capacity barriers are addressed.

### **Setting**

This program evaluation took place in a 75-bed rehabilitation hospital in South Carolina. Prior to 2018 rehabilitation services were located on one floor of an acute care community hospital. In June 2018 rehabilitation services were sold to a national company but services remained in the acute care setting. A secondary free-standing site was built to accommodate an increasing number of patients and opened in June 2018. The rehabilitation hospital remains one entity functioning as a 75-bed rehabilitation hospital but includes both locations. All data is aggregated from both sites.

### **Community Assessment**

Horry County lies on the Eastern Shore of South Carolina with a total population of 344,147 and a median per capita income of \$48,279. Race demographics reveal the top three percentages of Horry County residents are 82% white, 13% Black or African American and 6.1% identify as Hispanic/Latino. Horry County veterans comprise 27,893 residents in the county. (South Carolina County Health Rankings, 2019). Population statistics from 2019 census data estimate 5,148,714 people reside in the State of South Carolina. Race demographics reveal the top three populations in the state are 68% white, 27% percent as Black or African American and

5.8% as Hispanic or Latino. Veterans comprise 366, 862 persons (United States Census Bureau, 2019).

Horry County is largely a rural, farming county. Myrtle Beach is Horry County's largest city which lies in the middle of the county on eastern shore. Horry County's largest city is Myrtle Beach, a large tourist destination. The influx of out-of-state travelers impacts the revenue of the hospital positively in the Spring and Summer months, while the population in the fall and winter months significantly decline affecting hospital usage and revenue. Tourism is the largest industry in Horry County which makes the population very transient. Retirees make up a large majority of the population. Age related medical needs of this population influence the type and amount of healthcare resources are used. Population statistics from 2019 census data reveals poverty rates for Horry County is 14.3%. Seventeen percent of residents in Horry County have no health insurance (SC Health Rankings, 2019).

### **Literature Review**

The Johns Hopkins Nursing Evidence-Based Practice Model was chosen to guide the review of literature and appraisal of evidence. The model contains three interrelated elements: Inquiry, practice and learning used to act as a catalyst to standardize processes through adoption of evidence and adoption of a common language (Dang & Dearholt, 2018).

A literature search from years 2018 to 2021 was conducted using PubMed, Ovid, ProQuest, Google Scholar and CINAHL. Literature searches yielded 90 Level I to Level IV articles including both research and non-research articles including systematic reviews and meta-analysis articles. Relevant articles chosen numbered 23. Key search terms included: Nurse staffing, nurse turnover, nurse retention, nursing shortage, nursing engagement, nursing

satisfaction, and patient outcomes. The American Nurses Association Principles for Nurse Staffing (2020) was also included as a relevant article.

### **Nurse Staffing and Retention**

Appropriate nurse staffing links the needs of the patient with the expertise of the nurse and leads to safe, quality driven outcomes and must be contemplated in terms of quality and safety rather than just a cost factor. When registered nurse staffing is measured and executed correctly, adverse events decline, and outcomes will improve (American Nurses Association, 2020).

Appropriate staffing is vitally important to ensure the delivery of safe and high-quality patient care. Developing strategies that build safer patient environments must utilize staffing models that include patient acuity, licensed nurses, unlicensed assistive personnel, skills, education and training to deliver care (Shimp, 2017). Relationships between nurses and providers, the physical environment of the workplace, lifelong learning opportunities, staffing and scheduling committees and leadership recognition can collectively impact the decision of a nursing employee to leave the organization (Shimp, 2017).

Current strategies to determine staffing in healthcare facilities continues to be based on the ratio and supply-and-demand strategy with patient ratios being the dominant approach to staffing with many models driven by financial targets without consideration for evidence-based strategies using workload and time variables (Olley, Edwards, Avery & Cooper, 2019).

### **Nurse Turnover**

Nursing turnover impacts healthcare organizations as it is expensive to recruit and train new nurses. A 2017 survey of 136 organizations in the United States indicated an average registered nurse turnover of 14.9% resulting in a \$5.13-\$7.86-million-dollar financial loss with



over 80% of hospitals reporting a registered nurse vacancy rate greater than 5% (Brook, Aitken, Webb, MacLaren & Salmon, 2019).

Turnover in the first year of practice during the transition from student to nurse is high. Focus placed on early career stage nurses using six categories of initiatives and help to support the transition of the new nurse. These initiatives include: Preceptorship, mentoring programs, residency programs, internships, externships, transition and orientation to practice programs and clinical ladder programs (Brook et. al., 2019).

A combined preceptorship and mentorship program were successful at negating turnover and had a significant effect on new nurse confidence. Developing a strong relationship between the mentor, preceptor and new employee through training and peer support is crucial to retaining nurses. Nurses will seek employment from organizations that have established internship, residency, preceptor and mentor programs. Positive impacts on retention and turnover leads to a longer length of employment and increased competence. Increased competence leads to enhanced job satisfaction which is linked to lower turnover (Brook et. al., 2019).

Aging of the nursing workforce is a contributing factor to the retention of nursing staff. Aging workforce combined with the location of this facility in a retirement and resort area make recruitment of full-time nursing staff difficult.

### **Satisfaction and Engagement**

An integrative review was conducted by Al Zamel et. al. (2020) revealed that job satisfaction was the most severe factor influencing intent to leave an organization but pay, work environment, workload, peer support, work life quality, leadership style, organizational commitment and security were also influential in the decision to leave.

Job satisfaction correlates with quality of care and is a critical component to the successful functioning of the healthcare organization and to patient outcomes. Improving job satisfaction, employee well-being, retention and patient outcomes is the responsibility of the organization to design interventions that focus on education, mentoring, interpersonal interactions and evidence-based nursing practices to build a professional work environment that fosters job satisfaction (Niksala, et. al., 2020).

Incivility involves blaming, gossiping, cursing, making ethnic or sexual jokes and physical intimidation and can manifest from individuals or groups and has a negative influence on job satisfaction. Workplace incivility has a negative effect on the organization including: Voluntary turnover, low job performance and negative patient outcomes. Positive leadership in the way of role modeling, fostering open communication, exhibiting honesty, compassionate and empathetic leadership affects civility. Organizational commitment to civility and promotion of transformation leadership styles are effective in cultivating civil work environments. Strong leadership is needed to stop uncivil behavior through the use of policies and performance evaluations to hold offenders accountable for their behavior (Phillips et. al., 2018).

Nursing engagement factors include: Self-governance, professional development, access to effective leadership, responsiveness, positive interpersonal work relationships, quality nursing care, access to resources, appropriate staffing and effective teamwork and collaboration among nursing staff (Dempsey, 2018). Recruiting and retaining an engaged nursing workforce, organizational leaders must ensure that the intrinsic aspects of the job such as saving lives, helping patients and families, compensation, and benefits outweigh the stresses of the job including: Productivity requirements, responsibility and workload. Staff engagement takes place

when rewards of the job outweigh the stress. Burnout occurs when stressors outweigh the rewards (Dempsey, 2018). “Working in an environment that enhances teamwork, with an engaged workforce, will help to reduce errors, improve quality outcomes, and provide a healing atmosphere for true patient-family-centric care.” (Sohal, 2020).

### **Patient Outcomes**

Identifying the impact of nursing care on patient outcomes has been ameliorated by the development of nursing sensitive patient outcome indicators (falls, pressure sores or hospital acquired infections). Adequate nurse staffing has a great impact on patient outcomes. Decreasing the number of nurses per patient in the facility patient outcomes worsen (Coster, Watkins & Norman, 2018). Higher levels of nurse staffing decrease avoidable complications such as pressure ulcers and urinary tract infections. Staffing levels carry both a patient outcome impact and economic cost. It is estimated that increasing the number of Registered Nurses per patient was valued of \$60,000 annually in medical cost savings and the increase in productivity accounted for 72% of total labor costs (Coster et. al., 2018).

Long term acute care hospital (LTACH) patients who are critically ill are often admitted to the facility with an indwelling urinary catheter from the acute care facility and are the dominant source of infection in health care facilities (Zurmehly, J. 2018). Catheter associated urinary tract infections are the leading cause of infections that lead to hospitalization. Catheter associated urinary tract infections occur at an estimated annual rate of 720,000 resulting in 13,000 deaths with a cost of \$340 to \$450 million per year (Zurmehly, 2018).

Patients in long-term acute care hospitals are at higher risk for CAUTI related to lack of clear removal orders and misunderstanding of their necessity resulting in the catheter remaining in place longer than necessary. It is estimated that over 50% of hospitals did not identify and monitor patients that were catheterized and over 75% did not monitor duration and need for discontinuation of the catheter (Zurmehly, 2018). Patients who have an indwelling urinary catheter are at increased risk for CAUTI if the catheter is in place longer than two days. Nursing staff is responsible for optimal catheter care to control infection and keeping current with best practices to decrease the risk of catheter associated urinary tract infections (Zurmehly, 2018).

### **Evaluation Framework**

The W.K. Kellogg Foundation (WKKF) Step by Step Guide to Program Evaluation was used to guide the program evaluation, planning. The purpose of evaluation is to advance learning and improve strategies through a process of collecting and summarizing evidence to gain knowledge that guides organizational change to improve processes (WKKF, 2017).

### **Patricia Benner's Novice to Expert Model**

Patricia Benner's Novice to Expert Model will be used as a framework to evaluate the transition of the newly hired nurse from novice to knowing as they advance through the orientation and mentoring process Figure 3. Benner's model consists of five distinct stages: Novice, advanced beginner, competent, proficient, and expert (Ozdemir, 2019). "In the competent stage, nurses will devise new procedures and develop new clinical knowledge along with learned procedures for managing patient care while learning ethical behaviors" (Ozdemir, 2019).

Utilizing Benner's model of novice to expert model to develop structured professional development programs will assist the new employee with skill acquisition and appropriate advancement into the professional role from beginner to expert.

### **Herzberg's Two Factor-Theory**

Herzberg's two-factor theory is a theory based on two assumptions: First is that satisfaction and dissatisfaction are two overlapping concepts on the same continuum and are associated with several factors that motivate or demotivate employees Figure 2. The second assumption includes two motivation factors. Intrinsic motivators which are related to the content of the job such as achievement, recognition, responsibility, advancement and growth. The second motivator are described as extrinsic factors which Herzberg calls hygiene factors. Hygiene factors are focused on job content such as company policy, administration, supervision, working conditions, interpersonal relationships, salary and security (Bustalic & Mujabasic, 2018). Herzberg used the two-factor theory model to explain achieving job satisfaction requires satisfiers and dissatisfiers to be synchronized to achieve job satisfaction at work (Alrawahi et. al., 2020). Motivation is described as the force inside the individual that directs behavior. The ability to measure motivation is important to understand the response of the worker to the ever-changing demands of the health care environment (Baljoon et. al., 2018).

### **Description of Project**

The purpose of this program evaluation is to analyze the staffing, engagement, and satisfaction in a 75-bed rehabilitation facility to identify opportunities to improve processes to decrease turnover, increase satisfaction and engagement of nursing staff and determine the impact of nursing turnover on patient outcomes.

**Project AIMS**

1. Examine the pattern of nurse staffing to identify patterns and compare turnover rates with national benchmarks.
2. Evaluate nurse satisfaction to identify themes and trends related to satisfaction and Engagement.
3. Compare staffing trends between June 2018 and December 2020 with trends in patient outcomes and compare with national benchmarks.
4. Recommend strategies to decrease turnover and increase engagement and satisfaction.

**Project Objectives**

1. Examine staffing and turnover data and retention practices.
2. Evaluate nurse satisfaction and engagement data to identify trends and themes.
3. Examine patient outcomes and compare to staffing and turnover trends.
4. Present evaluation findings to stakeholders, make recommendations on interventions that impact nurse staffing, retention, satisfaction, and engagement, decrease turnover and have a positive impact on patient outcomes.

***Logic Model***

A logic was developed to outline the program evaluation and guide it toward intended results. Stakeholders in the facility were involved in the communication regarding nursing turnover and current processes at the facility which helped to guide the development of the logic model Figure 1.

**Overview of Methodology**

Employing the The W.K. Kellogg Foundation (WKKF) Step by Step Guide to Program Evaluation the project was rolled out in three phases: Planning, implementation, and

communication and presentation of findings. During the planning phase, stakeholders were identified, an evaluation plan, timeline and logic model were developed and included: Resources, activities, outputs, audiences, short, intermediate and long-term outcomes of the project. In the implementation phase, data collection from stakeholders, development and implementation of a qualitative and quantitative survey's. Collection of data post survey implementation was completed. The final phase embodied communication and presentation of findings of evaluation results and recommendations to stakeholders.

### **Implementation**

Stakeholders were identified and meetings were held to discuss current staffing practices, staff engagement, satisfaction and patient outcomes related to falls and catheter associated urinary tract infections (CAUTI). A literature search was conducted, a gap analysis was performed using evidence collected. The program evaluation began in October 2020. The Quality Improvement Director, Human Resources Director, Chief Nursing Officer, Director of Nursing and nursing supervisors and frontline nursing staff were consulted on the project. Data regarding nurse staffing, turnover, engagement, satisfaction and patient outcomes focused on falls and catheter associated urinary tract infections (CAUTI) were obtained from June 2018 to December 2020. Qualitative and quantitative surveys of job satisfaction were developed using Herzberg's Two Factor Theory and implemented in March and April 2021 Figure 5 and Figure 17.

Herzberg's two factor model was utilized to create two structured qualitative survey questions. The qualitative survey is represented in Figure 5.

A quantitative survey was developed using The Minnesota Satisfaction Questionnaire (short form). The Minnesota Satisfaction Survey is represented in Figure 4. The Minnesota

Satisfaction Questionnaire is a 20 item Likert style questionnaire used to measure an employee's satisfaction with his or her job (University of Minnesota, n.d.). At the time the qualitative survey was finished, each employee was asked if they would participate in an online survey and an e-mail was obtained. A confidential online link to the Minnesota Satisfaction Questionnaire was e-mailed to each participating employee. Qualtrics is the platform that was used to create and distribute the survey.

A cost analysis of hiring, onboarding, orientation and mentoring of new nursing staff was completed using the wage of a newly hired Registered Nurses and Rehabilitation Nurse Technicians. Costs are represented in Table 1 and Table 2. Salary was determined by averaging the salaries of an entry level nurse, a nurse with three years of experience and a nurse with sixteen years of experience. Salary for the Registered Nurse Technician was estimated by averaging the low and high salary rates for current RNT staff. Human resources salaries are estimated based on public salary data information for the corporate facility. Higsen & Page (2018) estimate the average time to fill a Registered Nurse vacancy is 82 days and the cost of the vacancy is estimated to be between \$418 and \$591 per day. Delay in filling Registered Nurse positions can result in vacancy rates above the average 82 days which can adversely impact employee satisfaction, engagement, quality outcomes and the organization's revenue (Higsen & Page, 2018). Cost of Registered Nurse vacancy to interview is based on the literature. Days to fill the Registered Nurse Technician position is based on information provided by the facility.

### **Data Management**

Facility data was collected from the Quality Improvement Director, Human Resources Director and nursing supervisor which included: Registered Nurse turnover (voluntary and involuntary separation); Registered Nurse Technician turnover (voluntary and involuntary



separation); catheter associated urinary tract infection rate (CAUTI); fall rates; wound rate; and medication events. Patient satisfaction data was obtained from June 2018 to December 2019 from the Press Ganey database and from January 2020 to December 2020 from the NRC database. Nursing department satisfaction and engagement survey data for 2020 was obtained from the Director of Nursing.

A qualitative satisfaction survey was developed based on Herzberg's Two Factor Theory Figure 5. The survey was implemented between April 1 and April 8, 2020. Face-to-face interviews were conducted with Registered Nurses and Registered Nurse Technicians. Interview data was collected and documented in written format. Twenty-one qualitative surveys were completed in the stated time frame. Thematic coding of the qualitative interviews was conducted. Thematic codes were defined and named developing themes.

The Minnesota Satisfaction Survey was utilized to obtain quantitative satisfaction data. Minnesota Satisfaction Survey questions were extracted, and an online survey was developed and distributed using Qualtrics. Post completion of the qualitative survey, each participant was asked if they would be willing to participate in the quantitative survey. An e-mail was obtained, and the confidential survey distributed to each participant. Ten individuals participated in the quantitative survey. The Minnesota Satisfaction Questionnaire is represented in Figure 3.

## **Findings**

### **Objective 1**

The pattern of nurse staffing was analyzed to identify gaps and critical issues in staffing and retention. Turnover rates for registered nurses and registered nurse technicians were compared to national benchmark data. Registered nurse turnover increased in April, June and July of 2020 ending the year with a turnover rate of 23.68%. RN turnover is represented in

Figure 6. The national turnover rate for RN staff in 2020 was 18.7% with the mean at 17.7% and a mode of 15.5% ranging from 0% to 66.5% per annum (NSI, 2021).

Rehabilitation nurse technician turnover rates increased in April, June, July, October, and December 2020. Rehabilitation nurse technician turnover for the year 2020 was 56.15% RNT turnover is represented in Table 7. The national annual turnover rate for unlicensed assistive nursing personnel in the United States is 27.7% (NSI, 2021). The turnover rate for RNT staff is two times the national rate.

Stakeholder meetings revealed that the COVID-19 pandemic initiated a shutdown of the Murrells Inlet facility in April 2020 and registered nurse staff did not want to travel to the sister facility. Staffing patterns went from calling off staff for low census and paying their paid time off (PTO) leaving the sister facility understaffed. A policy on paid time off (PTO) was changed in October 2020. Paid time off was previously paid to staff a change in policy required staff to take their own paid time off. According to stakeholders, shut down of one facility and changes in policy of paid time off contributed to the increases in registered nurse turnover.

Registered nurse technician turnover dropped significantly in March 2020. Stakeholders attributed this low turnover to the onset of COVID-19. Turnover rates began to rise steadily until a peak high in July 2020. Stricter policies that addressed behavior performance were implemented between April 2020 and July 2020. Stakeholders pointed to progressive disciplinary actions at the facility were directly related to the increase in RNT turnover.

## **Objective 2**

Nurse satisfaction and engagement were evaluated to identify trends and themes. Results from the 2020 facility satisfaction and engagement survey were obtained, results were based on a 98% completion rate. Category results include: Inclusion and diversity, leadership,

communication and engagement. Overall category results were favorable with category scores of 75.5% in inclusion and diversity, 72.1 % in leadership, 69.6% in communication and 68.7% in engagement. Category results are represented in Figure 13.

Top three drivers of engagement include: Culture of trust in this company, confidence in the future of this company and effective cooperation across departments. All three drivers were scored favorably. Percentage scores for culture of trust were 52.2%, confidence in the future of the company was 73.9% and effective cooperation across department scored favorably at 67.4%. Top three drivers of engagement are represented in Figure 14.

Favorability items were reported as the top three and bottom three percentages. The top three favorability items included: Knowing who to report concerns or violations to, opportunities for improving professional knowledge and skills and resources available to deliver culturally competent care. Favorability scores were high in all three areas scoring 93.5% for reporting concerns, 87.0 for opportunities to improve professional knowledge and 87.0% for providing resources to deliver culturally competent care. Top three favorability items are represented in Table 16. The bottom three favorability items included: Appropriately involved in decisions that affect their work, culture of trust exists in the workplace and the company is a great place to work. Percentage scores for being appropriately involved in decisions that affect their work were 47.8%, having a culture of trust in the company 52.2% and the company being a great place to work 54.3%. Bottom three favorability items are represented in Table 15.

Herzberg's two factor theory was utilized to develop a qualitative survey based on satisfiers and dissatisfiers Figure 2. Two questions were asked on the survey. What makes you feel satisfied in your job? Give an example. What makes you feel dissatisfied in your job? Give an example. Twelve registered nurses and nine registered nurse technicians completed the

qualitative survey. Thematic inductive descriptive coding was completed on the surveys for registered nurses and registered nurse technicians separate.

Coding was structured under two categories: Satisfied and dissatisfied. Themes that emerged from the registered nurse surveys under the satisfied category included: Co-workers, skills, patients and job. Under the dissatisfied category the themes included: Schedule, nursing processes, supervisors and patients.

Themes that emerged from the registered nurse technician surveys under that satisfaction category included: Patients, Co-workers and job. Dissatisfied category themes included: Patients and staffing.

Under the satisfied category, registered nurses were overwhelmingly satisfied with their co-workers describing their satisfaction as everyone being a team player, they help each other, get along really well, teammates that are willing to jump in and help, friendly staff and they enjoy working with their co-workers. Satisfaction in the skills category came from knowing how to do their job and feeling skilled in their job. Patients also had a significant impact on registered nurse satisfaction from seeing a patient smile, watching a patient complete a rehabilitation program and go home, seeing patients improve feeling like they are helping to make a difference for a patient, seeing patients being able to walk out of the facility and seeing patients get back on their feet. Satisfaction under the job category included job security, bonuses, shift incentives, and the Step-Up Program Figure 18.

Under the dissatisfied category nurses stated that dissatisfaction came from no defined or steady schedule, short staffing, heavy workload, lack of staff, lack of acuity knowledge, staffing by grid or matrix and not acuity. The nursing process category dissatisfiers included: Changing of nursing processes without staff input, process changes that make it harder to get things done,

changing of nursing processes that do not benefit nurses or patient care. Supervisor dissatisfiers reflected being talked down to and belittled, making people feel dumb, favoritism, not helping on the floor, unapproachable, not being a team player, and delegating extra tasks out to busy nurses.

Figure 18.

Themes that emerged under the registered nurse technician surveys under satisfiers included: Patients, co-workers, and job. Dissatisfied themes included: Patients and staffing.

Under the satisfied category registered nurse technicians stated that caring for clients, helping patients, seeing progression, seeing a broken person go home fixed, encouraging patients, and when I know that I have done all I can do to help my patients. In the co-worker category RNT's felt satisfied when co-workers do their part of the job, proper staffing (somedays), rehab people that help with clients and the way RNT's work together. In the job category RNT's described their paycheck and having a job to come to that they enjoy as satisfying Figure 19.

Two themes developed under the dissatisfied category: Patients and staffing. Registered nurse technicians voiced dissatisfaction for patients that they do not think are rehabilitation material, the type of patients and patients that require more assistance than can be provided. Staffing dissatisfiers included: Short staffing, getting called off from work and working short Figure 19.

The Minnesota Satisfaction Survey was completed by ten employees. The twenty Likert-scale quantitative survey revealed the top three results percentages for satisfiers were: The chance to do things for other people (100%), The chance to do something that makes use of my abilities (100%) and the freedom to use my own judgement (90%). The bottom three dissatisfiers were: The way my boss handles his/her workers (50%), The competence of my

supervisor in making decisions (50%) and The chance to be somebody in the community (45%).

Figure 17.

### **Objective 3**

Nurse sensitive patient outcomes: Falls and catheter associated urinary tract infections (CAUTI) were examined and compared to staffing trends.

In 2020, falls exceeded the ceiling benchmark of >7.6 in March, April, June, October and November. Figure 8. In the same period of time the registered nurse turnover rate increased steadily from March 2020 until October 2020. Figure 5. Registered nurse technician turnover began increasing in April 2020, increased steadily and peaked in July 2020 and remained continuously elevated through November 2020. Figure 10.

Catheter associated urinary tract infections (CAUTI) rates exceeded the ceiling benchmark rate in only one month in 2020 and that was April. Registered nurse technician turnover began increasing in April 2020, increased steadily and peaked in July 2020 and remained continuously elevated through November 2020. Figure 6. Mean total cost for a hospitalized patient with a CAUTI diagnosis is \$3692 (Simmering, 2017). Data from the facility showed only four CAUTI infections over the period of three years which is inconsistent with benchmark data. Approximately 12% to 16% of adult hospitalized inpatients will have an indwelling urinary catheter (IUC). Each day the indwelling urinary catheter remains the patient has a 3% to 7% increased risk of acquiring a catheter associated urinary tract infection (CDC, 2021). A recommendation will be made to stakeholders to complete a program evaluation on CAUTI identification and documentation processes to identify issues surrounding the collection of data.

### ***Wound Rates and Medication Events***

Data for wound rates and medication events was collected and evaluated along with falls and CAUTI. Evaluation of this data is being completed give stakeholders additional information on patient outcomes that can be utilized to develop process changes within the facility.

Wound rates exceeded the ceiling target benchmark of greater than 2.0 over 5 months in 2019.

Figure 11. According to stakeholders the elevation was recognized, and the wound care coordinator developed and implemented a 1:1 wound care education program on the unit.

Teaching was done in real time with each nurse individually. Wound rates dropped significantly after the implementation of the education. Figure 11.

Medication events were evaluated for trends. Peak events occurred in the months of February, June and December of 2020. Low events occurred in May and September 2020. No consistent pattern of events was seen in the data from June 2018 through December 2020. Stakeholders discussed medication events and revealed that no targets are set on medication events as the organization does not want to discourage reporting. Medication events are monitored closely each month.

### **Objective 4**

Evaluation findings will be presented to stakeholders. Recommendations on interventions that make a positive impact on nurse staffing, retention, satisfaction, and engagement, decrease turnover and have a positive impact on patient outcomes will be discussed. Specific recommendations are outlined in the recommendation section.

### **Summary and Interpretation**

Evaluation of turnover of nursing staff revealed similar patterns of increased turnover in both registered nurses and registered nurse technician job categories. Increased turnover began in

March 2020 and continued through until the end of the year. Data collection only occurred until December 2020. Evaluation of fall data revealed elevations between March 2020 and the end of the year. CAUTI data revealed one significant elevation in rate in April 2020. Turnover rate trends for registered nurses and registered nurse technicians are consistent with the trend shown in elevations of falls and one spike in CAUTI in April 2020.

Overall engagement and satisfaction scores from the annual survey and the Minnesota Satisfaction Questionnaire quantitative survey showed staff is satisfied with their overall job role and they have the opportunity to advance their knowledge and have the available resources to do their job. Communication and teamwork are valued, and they have trust and confidence in the company.

Qualitative survey data revealed information that was not captured by the quantitative surveys and will give stakeholders insight into the specific areas of satisfaction and dissatisfaction factors where they can focus quality improvement efforts. Overlapping themes in both job categories for satisfiers included a strong desire to care for patients and see them recover. Strong relationships with co-workers are cited as a main source of satisfaction on the job. Job details such as benefits, pay, and financial incentives were considered strong satisfiers in both categories. Coinciding dissatisfaction themes in both job roles included issues with the staffing and scheduling. Many reported that they often work short or understaffed and have higher patient loads. Direct supervisor characteristics were cited as a significant dissatisfier. Favoritism, lack of providing assistance, and belittling of employees were common themes. Nursing process changes were reported repeatedly indicating that communication to nursing staff is lacking when process changes are made in nursing. Lack of employee input and processes that cause delays were cited as the main reason for dissatisfaction.



**Costs**

Ever changing healthcare environments pose challenges in ensuring the nursing workforce meets the demand of the delivery system. Retention failure is measured in dollars and the care nurses provide to their patients (Africa, 2017). Costs associated with turnover in this facility in 2020 were 1,540, 436. Each one percent reduction in turnover would save the facility \$328, 400 (NSI, 2016).

**Recommendations and Conclusion**

Consider expanding then length, content and structure of the current orientation and preceptorship program. Include classroom education on wound care processes, infection prevention and control including indwelling urinary catheter procedures, fall reduction interventions and medication education related to high risk and high potential for error medications. Include interprofessional education from physical therapy, pharmacy and the wound care coordinator. Internship, residency or orientation and transition to practice programs lasting between 27 and 52 weeks that include a teaching, preceptor and mentor component show are the most impactful intervention that successfully influence the retention of nursing staff (Brook et. al., 2019).

Consider offering a structured nurse preceptor education program to willing preceptors in the facility. Developing and supporting structured preceptor education programs take investment from leadership to structure benefits, rewards and support systems to retain preceptors in their role. Investment in these programs requires up-front costs but turnover costs justify the investment. Preceptor education programs have produced positive returns on investment while at the same time improving retention, satisfaction and performance (Kennedy, 2019).

Consider interprofessional team training including interprofessional bedside rounding on a regular cycle as part of the professional development process for nursing staff. Increased job satisfaction and decreased turnover rates are seen in work environments that improve interprofessional team functioning (Baik & Zierler, 2019).

Consider a collective leadership approach for staffing and scheduling of nursing staff to include a staffing and scheduling committee. Nurses tend to be supportive of collective approaches to leadership rather than traditional hierarchical organizations with command-and-control leadership models. Modernization and emphasis on interventions that facilitate sharing of leadership and incorporate team members result in increased engagement and satisfaction of nursing staff (De Brun, O'Donovan & Mc Auliffe, 2019).

Consider implementing an acuity-based staffing model to complement the Nursing Hours Per Patient Day (NHPPD) method which does not take into account the workload of the patient assignment for the nursing staff. Although NHPPD determines minimum staffing levels based on bed occupancy, an overwhelming amount of research links nurse staffing and patient outcomes. Consideration of bed occupancy along with acuity can lead to effective staffing models that meet clinical and staffing outcome targets (Haegdorens et. al., 2019).

Consider performing a program evaluation on CAUTI incidence and documentation in the facility to develop better tracking processes for CAUTI that can be used to develop better interventions to combat CAUTI infections in the facility.

Completion of this program evaluation has resulted in recommendations to help support staffing, engagement, satisfaction, and patient outcomes in this facility based on current evidence. Patterns of turnover in the facility were consistent with increases in negative patient outcomes for falls, wounds, and medication events. Implementing recommendations from this

program evaluation will help to guide the facility toward making changes that support improvement in patient care and through decreasing turnover.

### **Limitations**

The COVID-19 pandemic had a significant impact on healthcare organizations beginning in March 2020 and continuing until the present time. Nursing turnover, engagement, and satisfaction were all impacted by quickly changing organizational processes and clinical requirements related to COVID-19. Delay in progressing with the program evaluation was affected by the shut-down of the facility to outside visitors from March 2020 to August 2020.

Press Ganey, the reporting platform that the organization was utilizing to provide data to stakeholders on patient and employee satisfaction was replaced with the NRC Healthcare platform in 2020 resulting in the inability to access older data.

Staff willingly took part in the qualitative survey. Hesitancy was evident when asking staff to participate in the online quantitative survey resulting in only ten completed quantitative surveys.

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Table 1

*Cost of Recruitment and Orientation of Registered Nurse Staff*

Category	Amount	Multiplier	Expense	Category
	Hourly	Days	Per Day	Expense
RN Vacancy: 82 days to fill	\$29/hr.	82 days	\$348/day	\$28, 536
HR Recruitment wages	\$58/hr.	82 days	\$464/day	\$38,048
Administrative Costs				\$500
RN HR Orientation	\$29/hr.	2 days	\$232/day	\$928
Nursing Orientation	\$29/hr.	6 days	\$348/day	\$2,088
Nursing Preceptor	\$33/hr.	12 days	\$396/day	\$4752
Total Expense				\$74,852

Note: Total expense reflects the cost to hire one new RN. RN days are calculated using twelve hours. Human resources costs are calculated using 8 hours. Administrative costs (supplies, food) are a bulk estimation.



Table 2

*Cost of Recruitment and Orientation of Rehabilitation Nurse Technician Staff*

Category	Amount	Multiplier	Expense	Category
	Hourly	Days	Per Day	Expense
RNT Vacancy; 45 days to fill	\$13/hr.	45 days	\$156/day	\$7,020
HR Recruitment wages	\$58/hr.	45 days	\$464/day	\$20,880
Administrative Costs				\$500
RNT HR Orientation	\$13/hr.	2 days	\$156/day	\$312
RNT Orientation	\$13/hr.	6 days	\$156/day	\$936
RNT Preceptor	\$15/hr.	12 days	\$156/day	\$1872
Total Expense				\$31,520

Note: Total expense reflects the cost to hire one new RNT. RNT days are calculated using twelve hours. Human resources costs are calculated using 8 hours. Administrative costs (supplies, food) are a bulk estimation.

Table 3

*Cost of Registered Nurse and Registered Nurse Technician Turnover 2020*

Category	Amount	Multiplier	Expense
	Annual	Per Capita	Total Expense
RN Turnover	\$74,852	13 RN(s)	\$973,076
RNT Turnover	\$31,520	18 RNT(s)	\$567,360
Total Turnover Expense			\$1, 540, 436

Figure 1

*Logic Model*

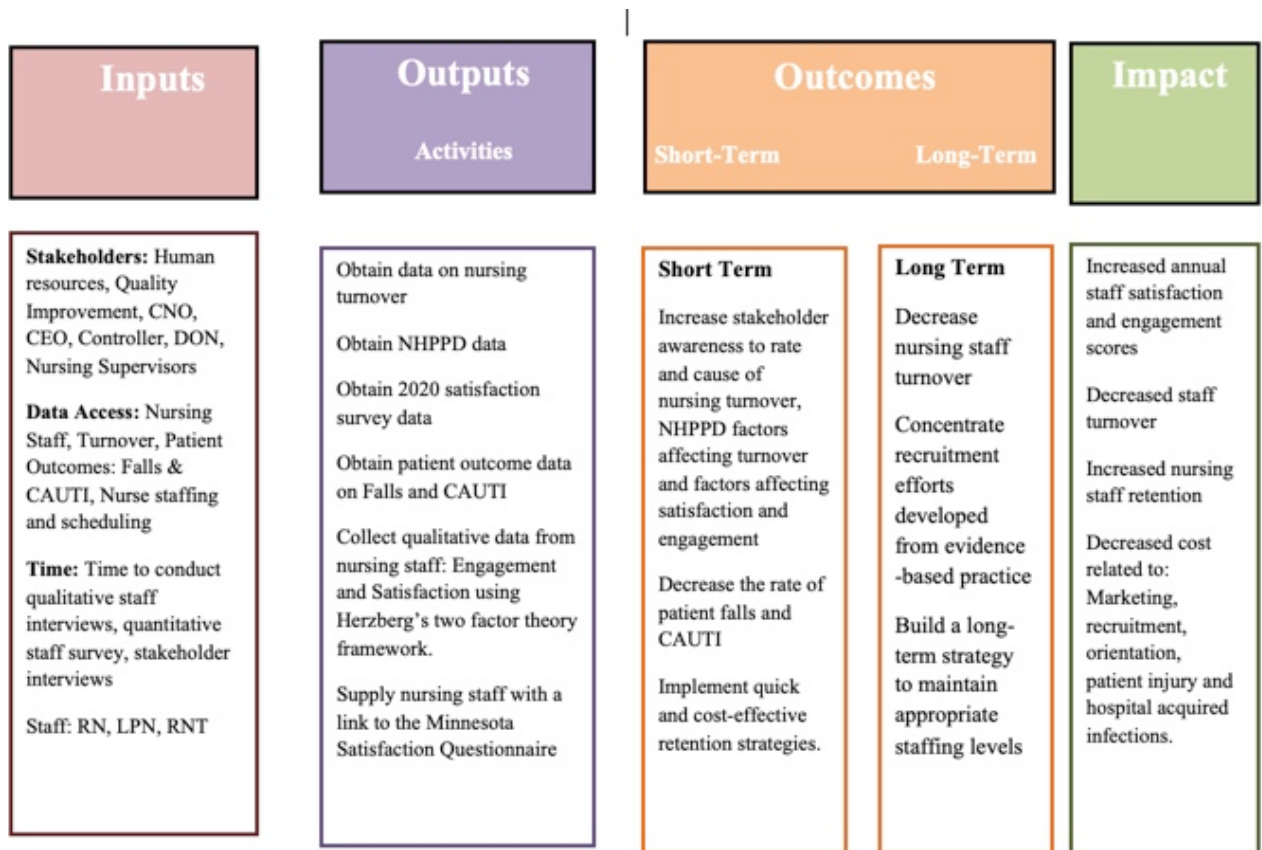


Figure 2

*Herzberg's Two Factor Theory*

## Herzberg's Hygiene and Motivational Factors



Note: Mohammed A., Shahwan-Akl, L. and Maude, P. (2017). Herzberg's Two-Factor Theory. *Journal of Life Sciences*, 14(5), 12-16. doi:[10.7537/marslsj140517.03](https://doi.org/10.7537/marslsj140517.03).

Figure 3

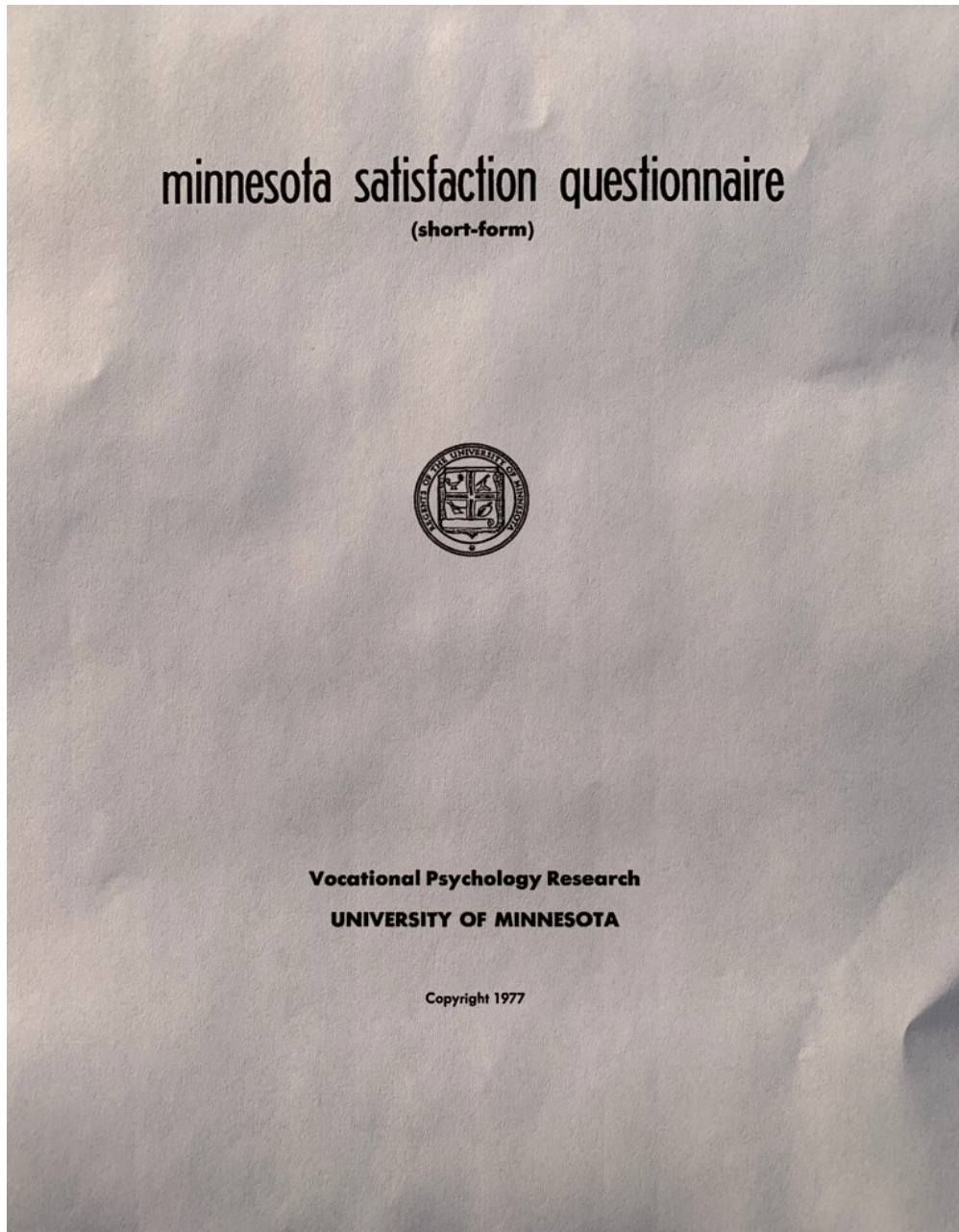
*Benner's Novice to Expert Model*



Note: Benner, P. (2000). *From novice to expert*. Pearson.

Figure 4

*Minnesota Satisfaction Questionnaire*



Note: Page 1. University of Minnesota (2021). Minnesota Satisfaction Questionnaire.

[https://vpr.psych.umn.edu/sites/vpr.umn.edu/files/files/msq\\_booklet\\_short-form\\_1977.pdf](https://vpr.psych.umn.edu/sites/vpr.umn.edu/files/files/msq_booklet_short-form_1977.pdf).

Figure 4

*Minnesota Satisfaction Questionnaire*

**minnesota satisfaction questionnaire**

The purpose of this questionnaire is to give you a chance to tell **how you feel about your present job**, what things you are **satisfied** with and what things you are **not satisfied** with.

On the basis of your answers and those of people like you, we hope to get a better understanding of the things people **like and dislike about their jobs**.

On the next page you will find statements about your **present job**.

- Read each statement carefully.
- Decide **how satisfied you feel about the aspect of your job** described by the statement.

Keeping the statement in mind:

- if you feel that your job gives you **more than you expected**, check the box under **“Very Sat.”** (Very Satisfied);
- if you feel that your job gives you **what you expected**, check the box under **“Sat.”** (Satisfied);
- if you **cannot make up your mind** whether or not the job gives you what you expected, check the box under **“N”** (Neither Satisfied nor Dissatisfied);
- if you feel that your job gives you **less than you expected**, check the box under **“Dissat.”** (Dissatisfied);
- if you feel that your job gives you **much less than you expected**, check the box under **“Very Dissat.”** (Very Dissatisfied).

- Remember: Keep the statement in mind when deciding **how satisfied you feel about that aspect of your job**.
- Do this for **all** statements. Please answer **every** item.

**Be frank and honest.** Give a true picture of your feelings about your **present job**.

2

Note: Page 2. University of Minnesota (2021). Minnesota Satisfaction Questionnaire.

[https://vpr.psych.umn.edu/sites/vpr.umn.edu/files/files/msq\\_booklet\\_short-form\\_1977.pdf](https://vpr.psych.umn.edu/sites/vpr.umn.edu/files/files/msq_booklet_short-form_1977.pdf).

Figure 4

*Minnesota Satisfaction Questionnaire*

Ask yourself: How **satisfied** am I with this aspect of my job?

**Very Sat.** means I am very satisfied with this aspect of my job.  
**Sat.** means I am satisfied with this aspect of my job.  
**N** means I can't decide whether I am satisfied or not with this aspect of my job.  
**Dissat.** means I am dissatisfied with this aspect of my job.  
**Very Dissat.** means I am very dissatisfied with this aspect of my job.

---

**On my present job, this is how I feel about . . .**

	Very Dissat.	Dissat.	N	Sat.	Very Sat.
1. Being able to keep busy all the time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. The chance to work alone on the job	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. The chance to do different things from time to time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. The chance to be "somebody" in the community	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. The way my boss handles his/her workers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. The competence of my supervisor in making decisions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Being able to do things that don't go against my conscience	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. The way my job provides for steady employment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. The chance to do things for other people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. The chance to tell people what to do	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. The chance to do something that makes use of my abilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. The way company policies are put into practice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. My pay and the amount of work I do	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. The chances for advancement on this job	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. The freedom to use my own judgment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. The chance to try my own methods of doing the job	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. The working conditions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. The way my co-workers get along with each other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. The praise I get for doing a good job	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. The feeling of accomplishment I get from the job	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3

Note: Page 3. University of Minnesota (2021). Minnesota Satisfaction Questionnaire.

[https://vpr.psych.umn.edu/sites/vpr.umn.edu/files/files/msq\\_booklet\\_short-form\\_1977.pdf](https://vpr.psych.umn.edu/sites/vpr.umn.edu/files/files/msq_booklet_short-form_1977.pdf).



Figure 5

*Qualitative Satisfaction Survey*

*Duquesne University DNP Qualitative Survey  
Eileen Klang, MSN-E.d., R.N.*

*RN      LPN      RNT*

**Question 1**

**What makes you feel satisfied in your job?**

**Give an example.**

**Question 2**

**What makes you feel dissatisfied in your job?**

**Give an example.**

Note: Mohammed A., Shahwan-Akl, L. and Maude, P. (2017). Herzberg's Two-Factor Theory. Journal of Life Sciences, 14(5), 12-16. doi:[10.7537/marslsj140517.03](https://doi.org/10.7537/marslsj140517.03).

Figure 6

*RN Turnover January 2020 to November 2020*

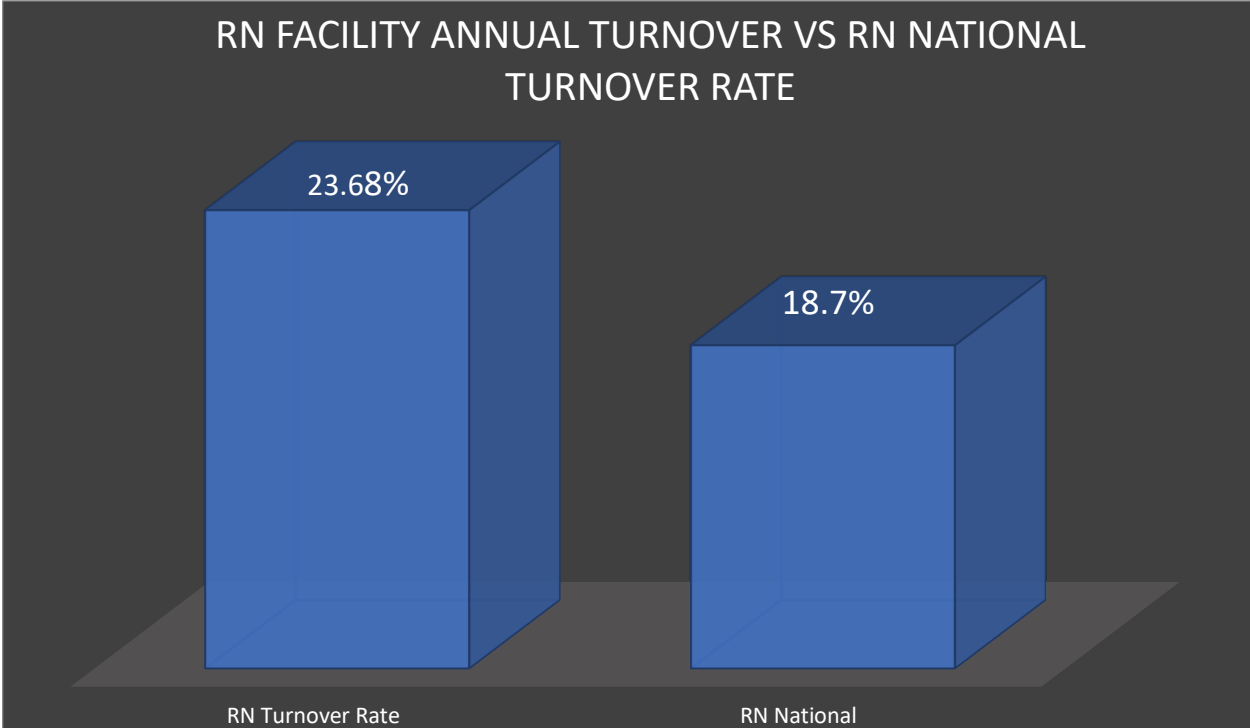


Figure 7

*Rehabilitation Nurse Technician Turnover January 2020 to November 2020*

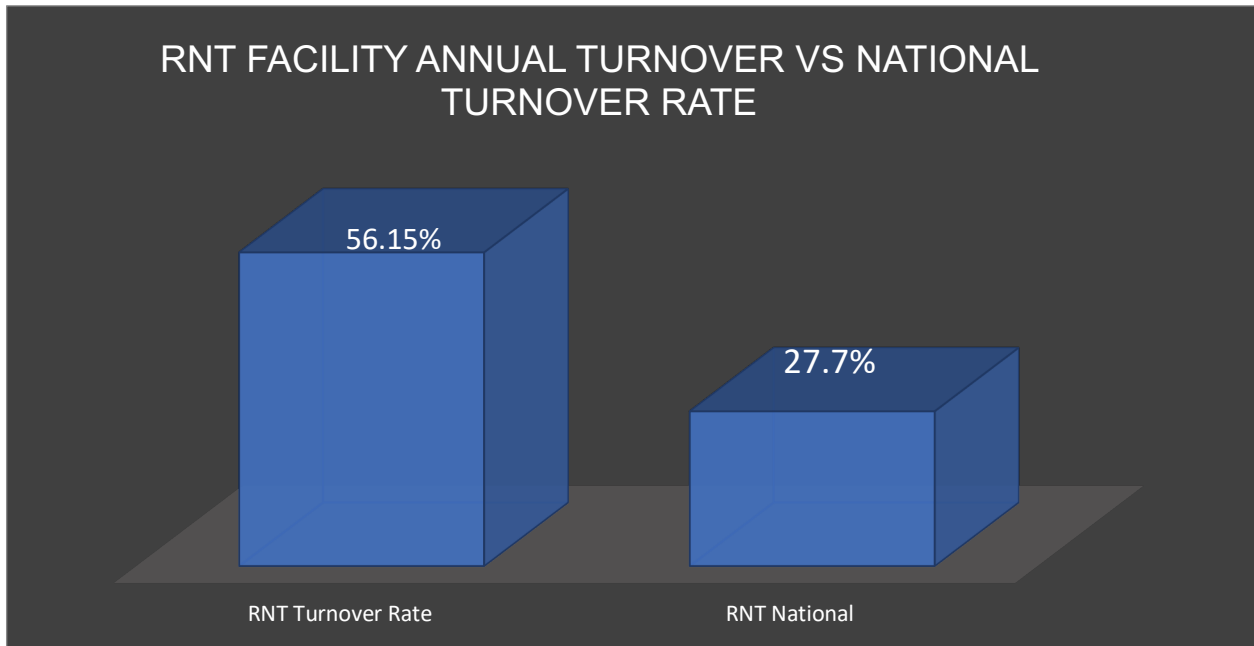


Figure 8

*Medication Events*

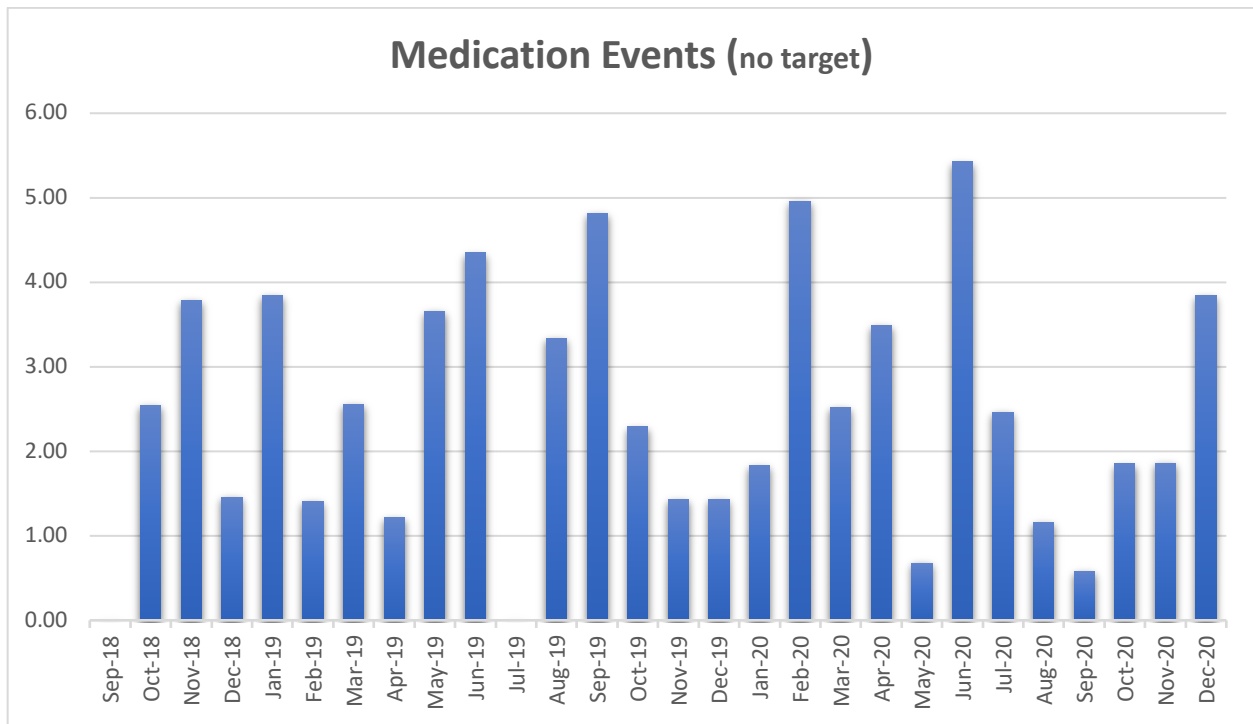


Figure 9

*Catheter Associated Urinary Tract Infections (CAUTI) Rate September 2018 to December 2020*

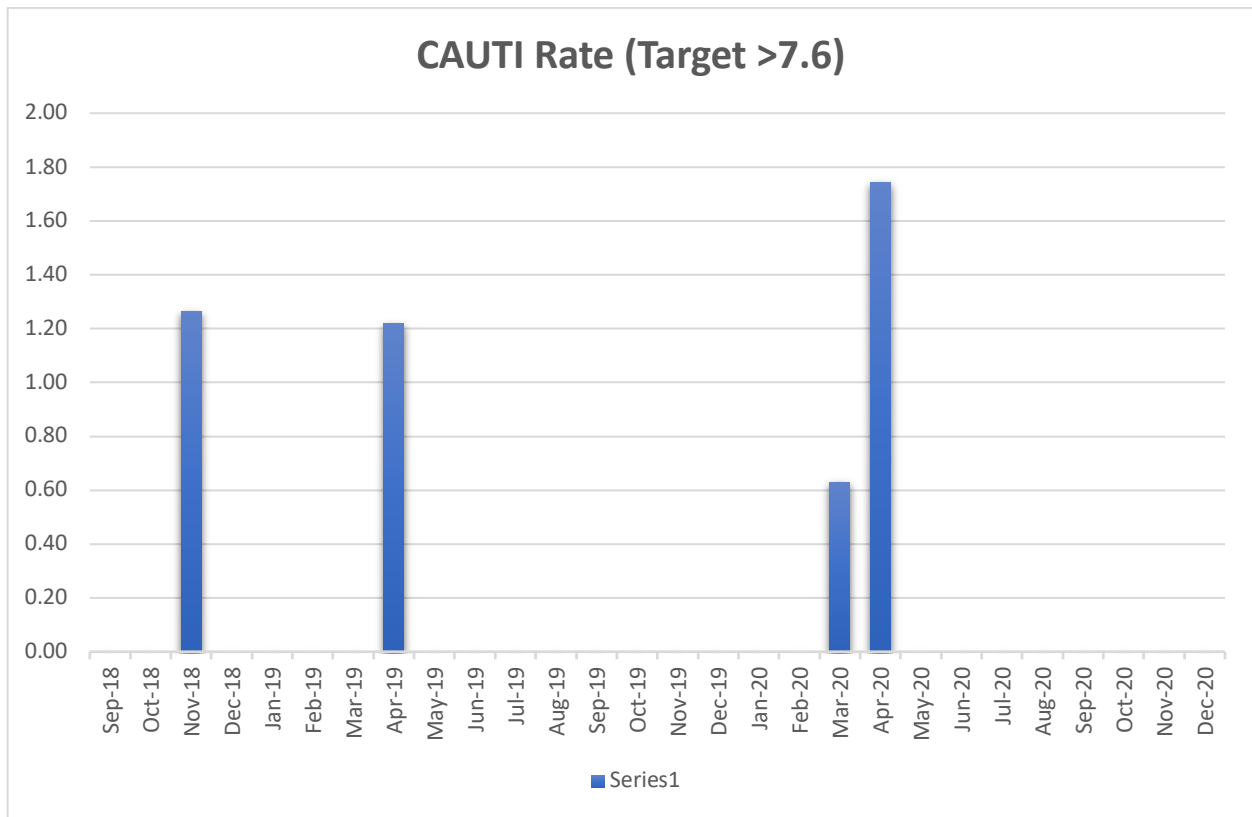


Figure 10

*Falls September 2018 to December 2020*

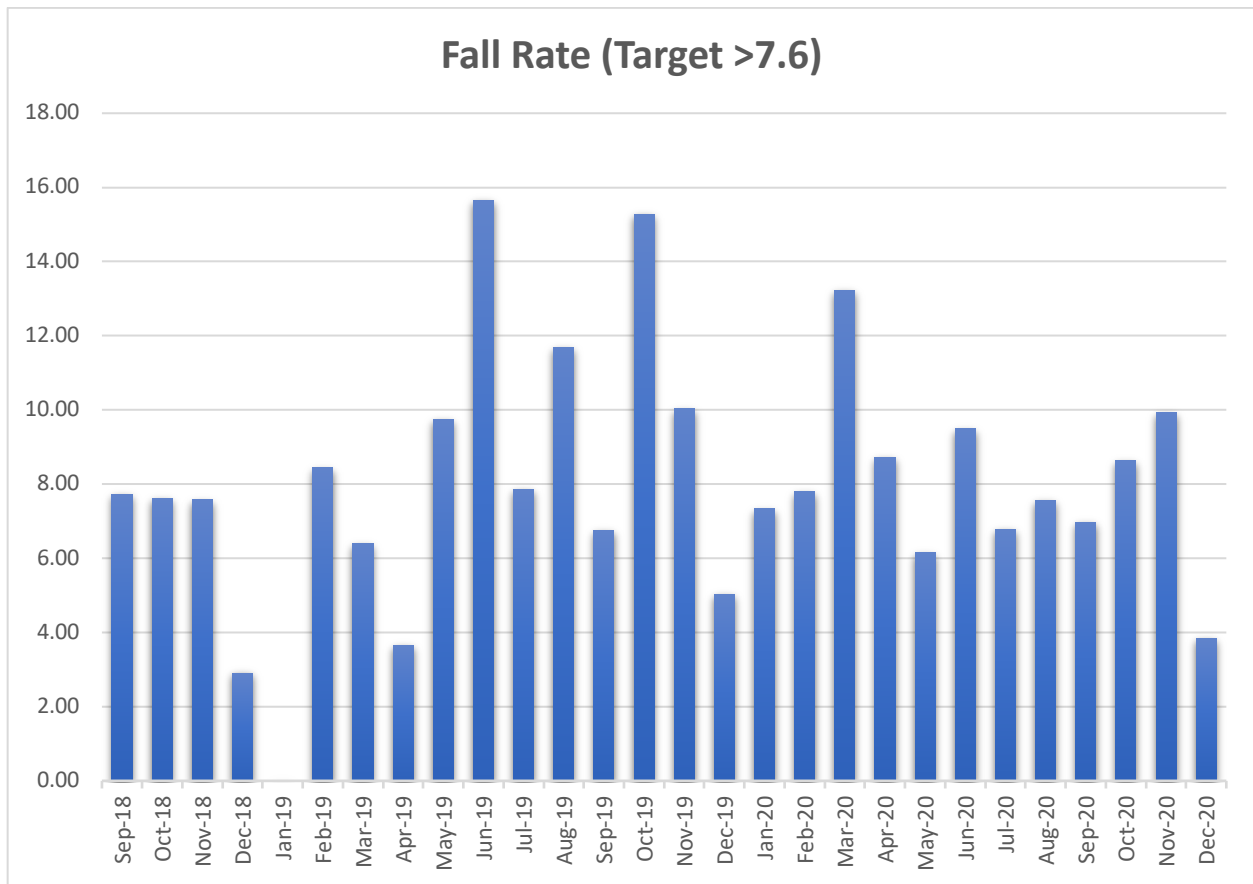


Figure 11

*Wound Rate September 2018 to December 2020*

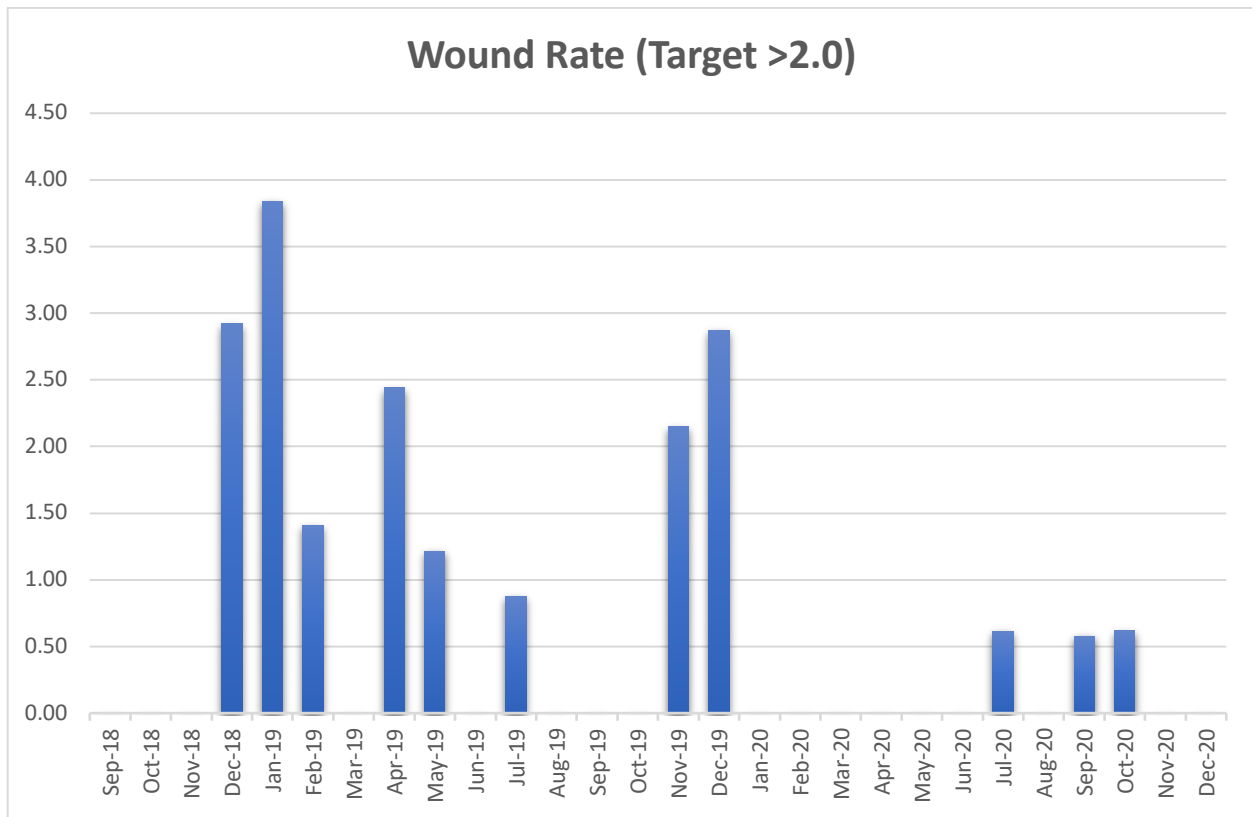


Figure 12

*Medication Events (no target) September 2018 to December 2020*

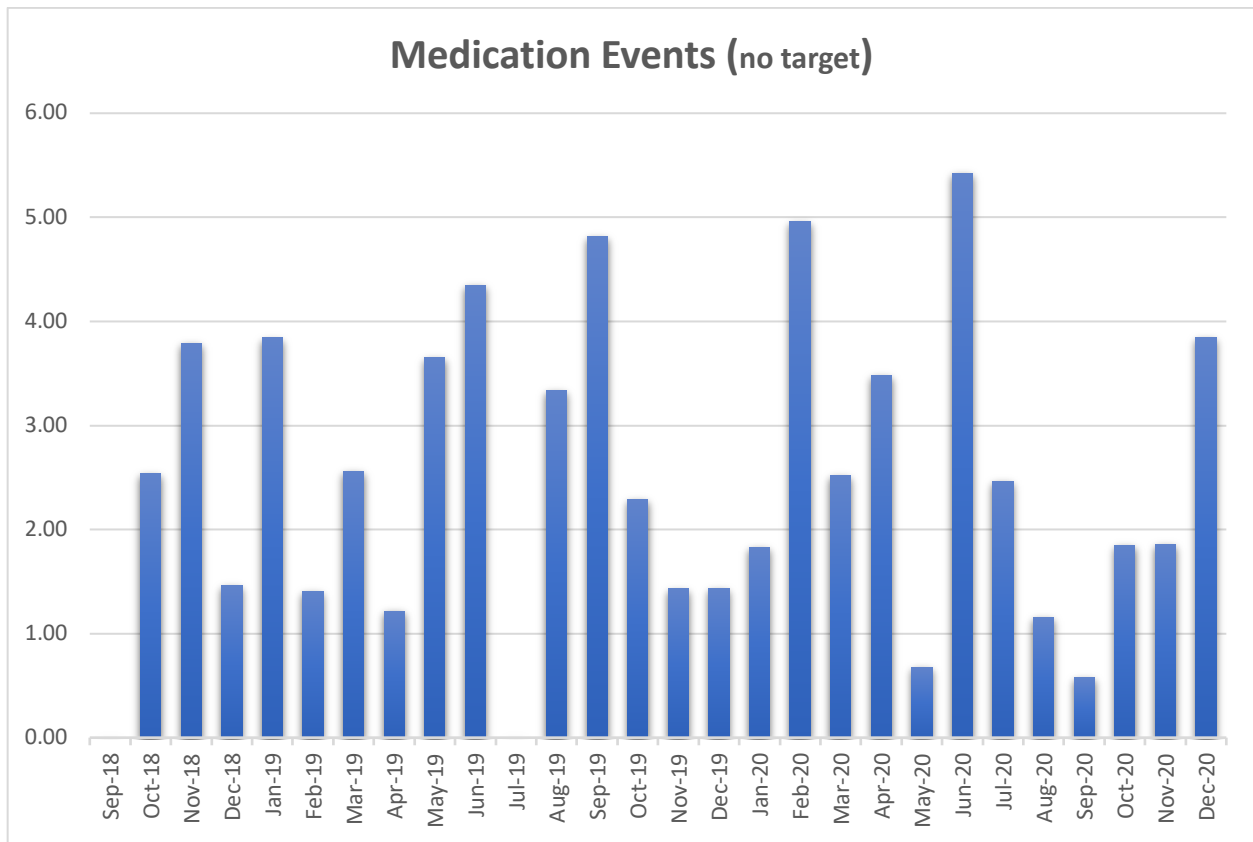




Figure 13

Facility Satisfaction and Engagement Category Results

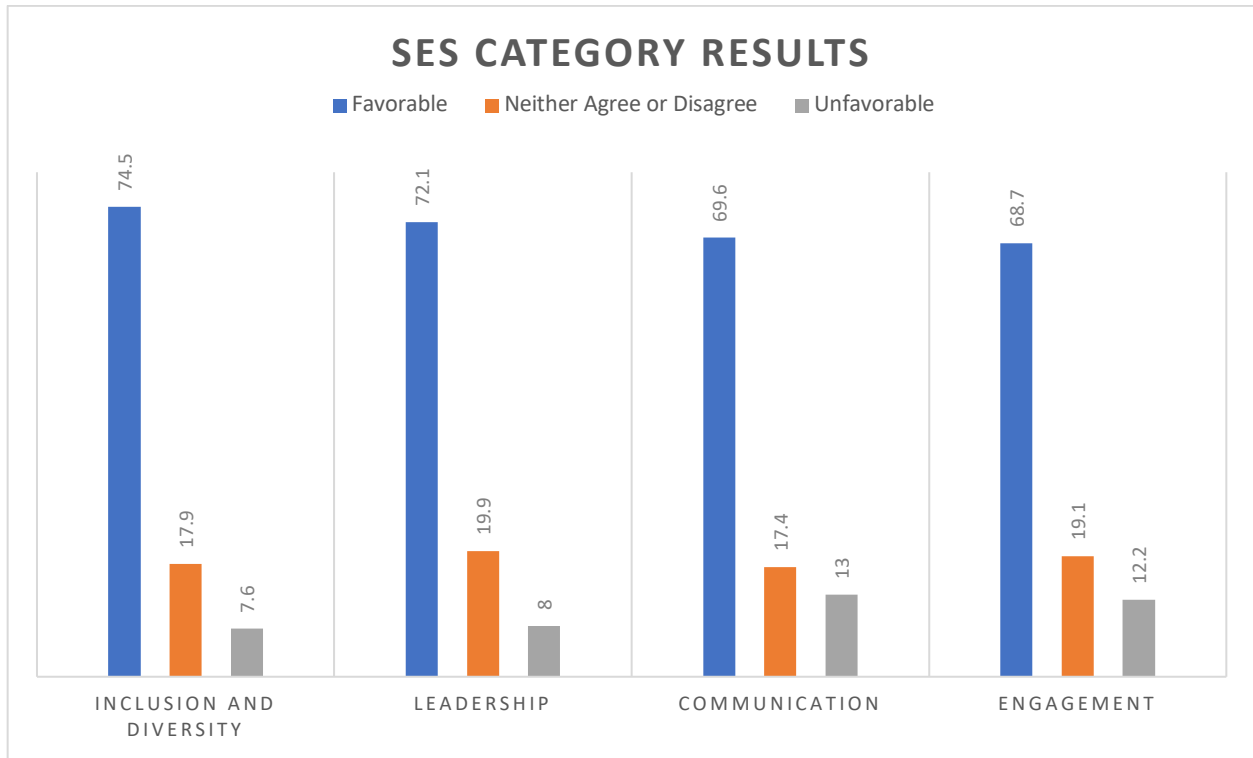


Figure 14

Facility Satisfaction and Engagement Top Three Drivers of Engagement

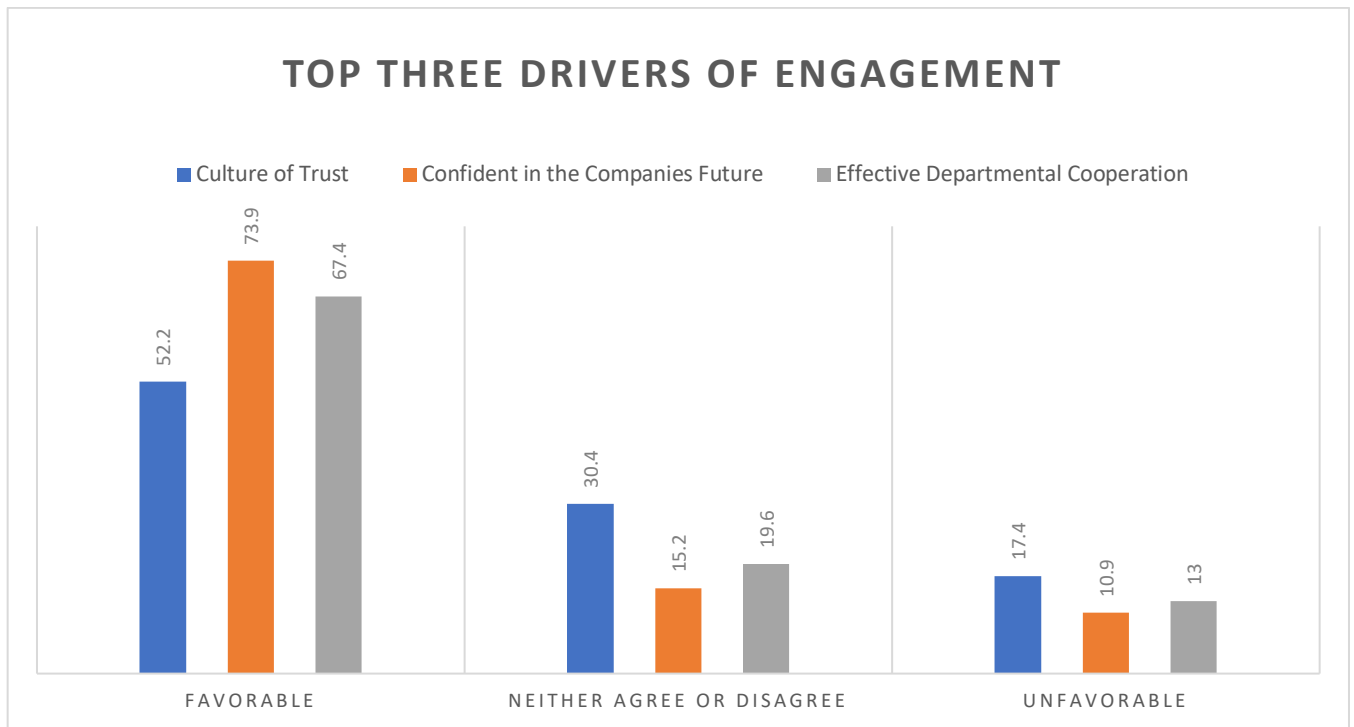


Figure 15

Facility Satisfaction and Engagement Bottom Three Favorability Items

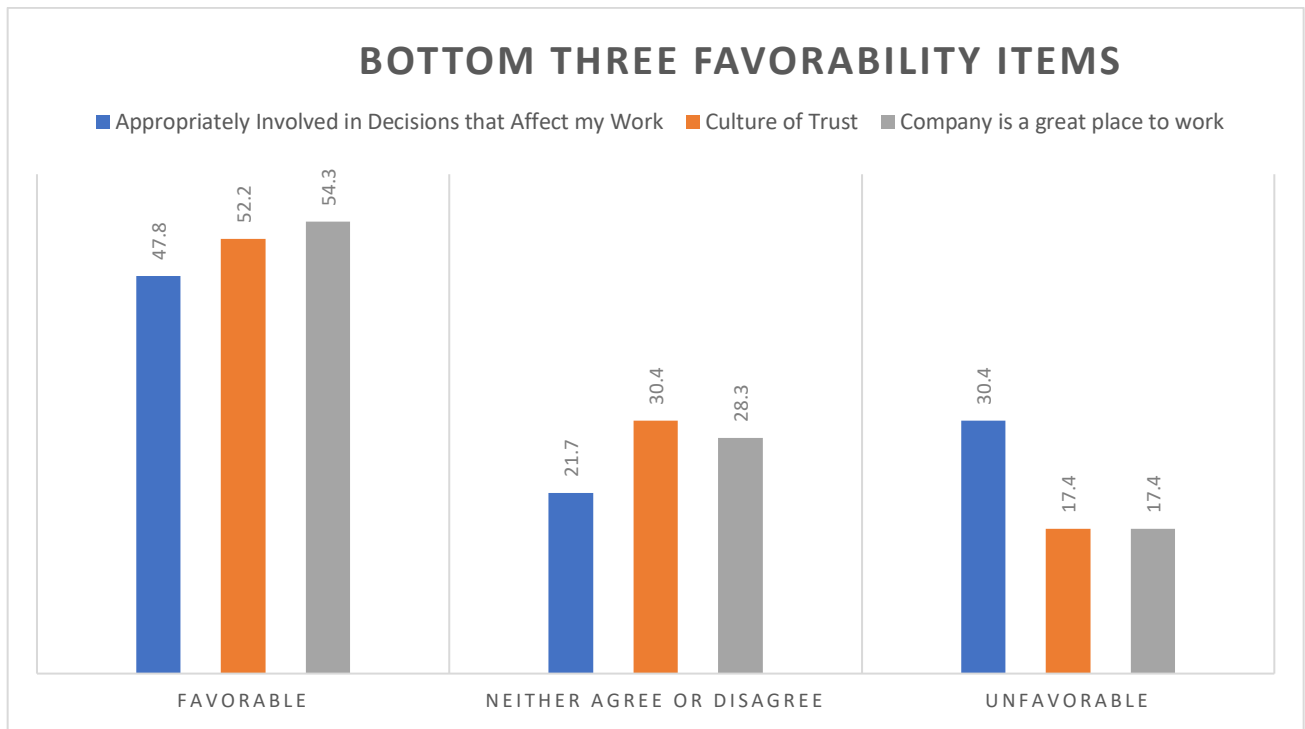


Figure 16

Facility Satisfaction and Engagement Top Three Favorability Items

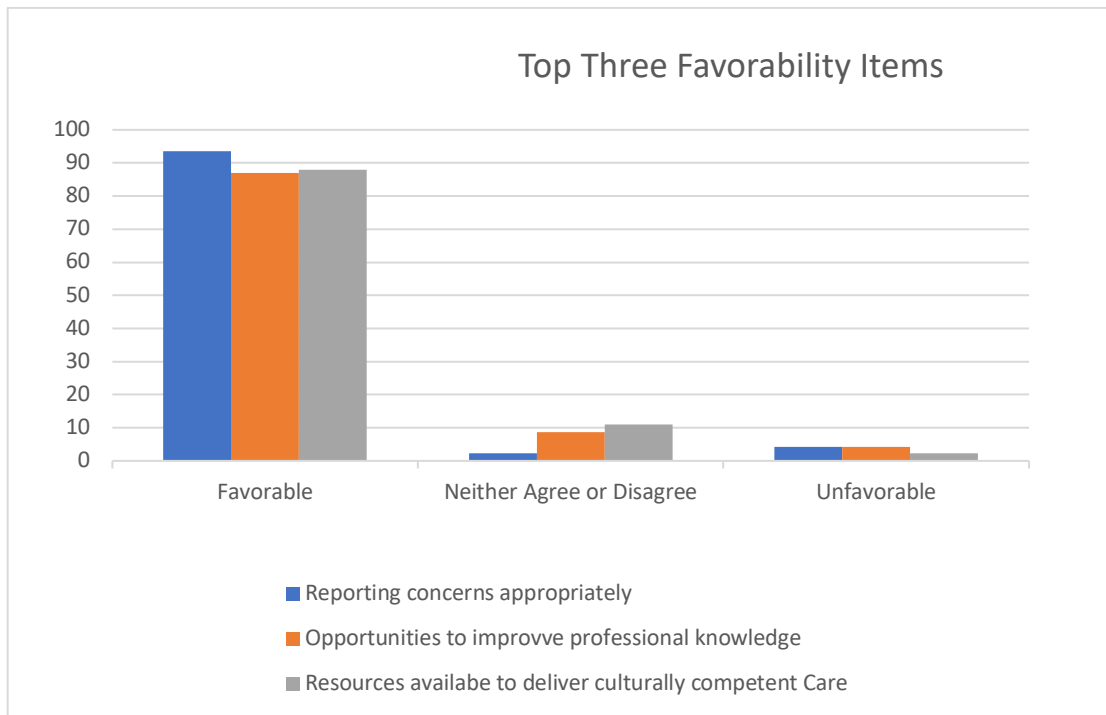


Figure 17

*Minnesota Satisfaction Questionnaire Results (Quantitative); Questions 1-6*



Figure 17

Minnesota Satisfaction Questionnaire Results (Quantitative); Questions 7-12



Figure 17

Minnesota Satisfaction Questionnaire Results (Quantitative); Questions 13-18



Figure 17

*Minnesota Satisfaction Questionnaire Results (Quantitative); Questions 19-20*

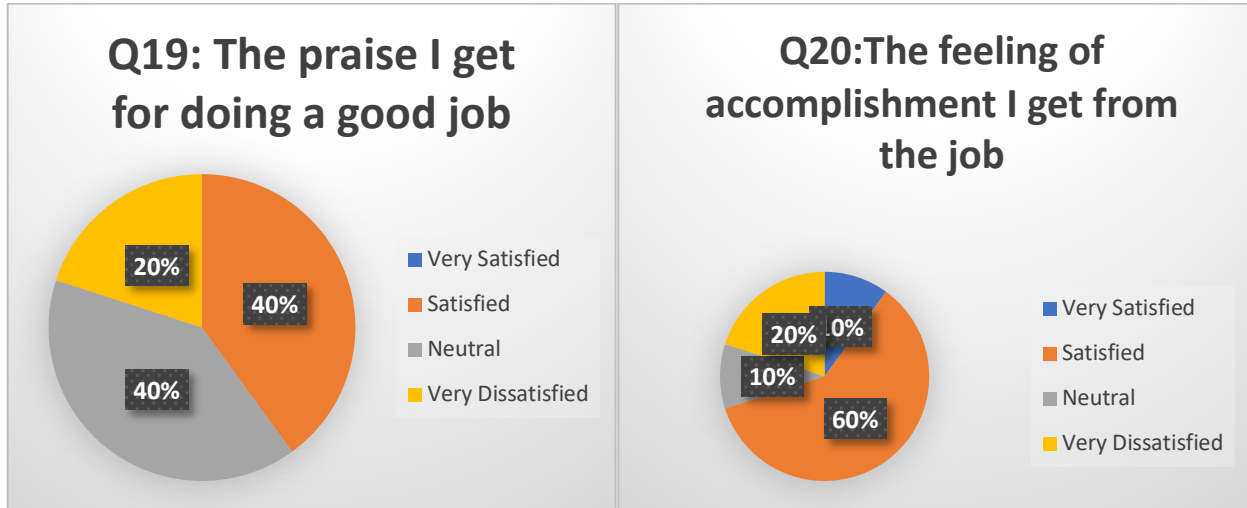




Figure 18

*Registered Nurse Themes for Satisfiers and Dissatisfiers*

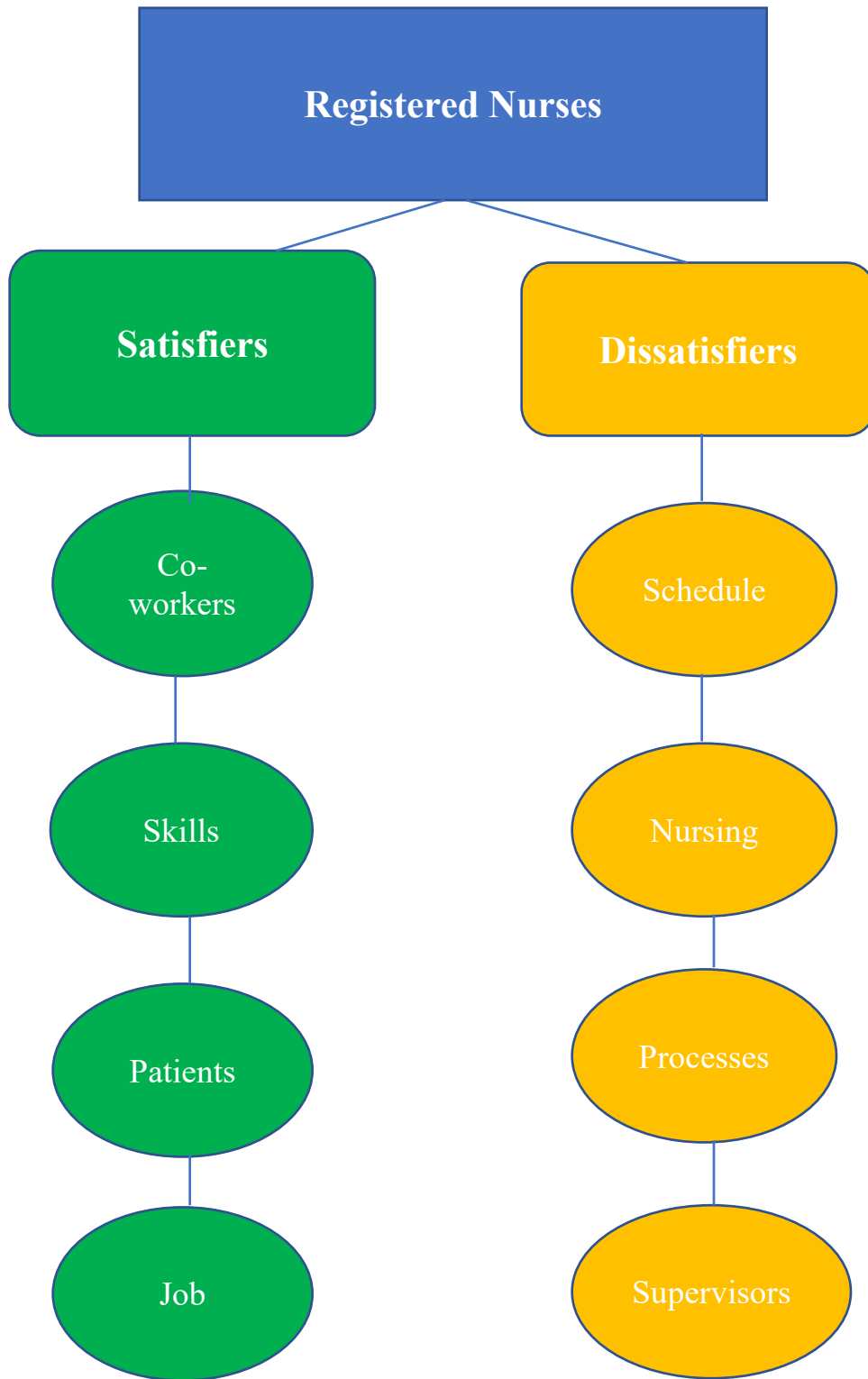


Figure 19

*Registered Nurse Technician Themes for Satisfiers and Dissatisfiers*

