Shhh! Improving Patient Satisfaction Scores With a Quiet-at-Night Care Bundle

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Abstract

Inpatient hospital settings can be very noisy. Noise not only affects the physical health and restoration of patients, but it also contributes to reduced patient satisfaction scores. This quality improvement project utilized a Quiet-at-Night Care Bundle over 12 weeks for patients admitted to a medical/oncology inpatient unit. The bundle included announcing on Vocera, a wireless communication device worn by staff to signal quiet time from 10:00 p.m. to 4:00 a.m., dimming lights, lowering voices, closing patients' doors, do not disturb signs, grouping patient care activities, and earplugs. Leader Rounding Survey- Quietness Audit was used to identify short-term progress and real-time improvement, while HCAHPS survey scores were used to identify long-term improvement. One hundred sixty-nine (n = 169) patients were surveyed using the Leader Rounding Survey- Quietness Audit, and 48 HCAHPS surveys were completed. Leader Rounding Survey- Quietness Audit revealed that 66% of patients thought the unit was quiet, and a 12% improvement was seen in the HCAHPS survey score: 55% of patients voiced that simply closing their doors and dimming lights reduced the perception of noise and improved their ability to rest. These findings suggest that the Quiet-at-Night Care Bundle effectively improved patient satisfaction among hospitalized patients on a medical/ oncology unit.

Keywords: noise in the hospital, quiet at night, reducing hospital noise, patient disturbance, hospital sounds, noise, patient satisfaction, and HCAHPS

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Chapter I: Introduction

From the inception of nursing, nurse pioneer Florence Nightingale highlighted the environment's role in helping patients recover from illness. Her environmental theory explains that the lack of such factors as fresh air, pure water, sufficient food and appropriate nutrition, cleanliness, sunlight, and a warm, quiet environment can delay a patient's recovery (Petiprin, 2020). Health care has adopted many strategies to improve most of the factors outlined by Nightingale, but a quiet environment is often not prioritized.

The acute care/hospital setting is very noisy, filled with the sounds of rolling carts, piercing alarms, slamming doors, and staff conversation. Units are noisy, hallway lights are bright, and patients are disturbed constantly during sleep hours for nonessential tasks (Pramanik et al., 2019). These factors impact a patient's ability to rest, relax, or have restorative sleep. This issue is significant not only for the positive clinical outcome for patients, but also has an economic effect (Hedges et al., 2019).

Federal incentives are linked to patient satisfaction or experience through the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey, by which hospitals are reimbursed based on performance and quality of care (Centers for Medicare & Medicaid Services [CMS], 2021a). A comfortable patient in a quiet environment is more likely to be satisfied with their care and overall experience (Walker & Karl, 2019), which is then reflected in the responses on HCAHPS surveys.

Background and Significance

Merriam-Webster (n.d.) defines *noise* as sound that is "noticeably unpleasant or loud." Environmental noise is rated as one of the top environmental risks to individuals' physical and

mental well-being (World Health Organization [WHO], 2019). Because the negative impacts of noise are a major concern to policymakers and the public worldwide (WHO, 2019), the WHO created a guideline with recommended noise levels in different settings, including hospitals (Kamdar et al., 2017). In hospital units, these guidelines specify that background noise levels should average < 35 dB (like a library) during the day and < 30 dB at night. Noise levels may peak not > 40 dB (a normal conversation), a level sufficient to awaken someone from sleep (Berglund et al., 1999).

Since the publication of this guideline in 1999, studies have outlined that few hospitals have been able to comply with these measures, and noise levels have risen at alarming rates (de Lima Andrade et al., 2021). Globally, daytime values range from 37 to 88.6 dB, and nighttime values from 38.7 to 68.8 dB (de Lima Andrade et al., 2021), while one U.S. study identified noise levels of up to 90 dB (Kol et al., 2015).

In the inpatient setting, noise sources include heating and cooling systems, respiratory equipment, beeping sounds from pumps, conversations, telephones ringing, trollies, cumulative noises during patient admissions, televisions, and sirens (Pramanik et al., 2019). This noise nuisance and the constant disturbance from staff during night hours to check vital signs, perform hourly rounds, and medicate have affected the vulnerable inpatient population physiologically and psychologically. Patients experience reduced hours of sleep, high blood pressure, arrhythmias, stress, slower processing speeds, and effects on the gastric system (Jue & Nathan-Roberts, 2019). Berglund et al. (1999) reported secondary effects of noise: reduced perceived sleep quality, increased fatigue, depressed mood or well-being, and decreased performance. Wesselius et al. (2018) suggested that above-average noise levels and disturbances during night hours correlate with reduced sleep and lower healing and restoration levels in patients.

A poorly rested patient is often easily annoyed and dissatisfied (Wilson et at., 2017). This dissatisfaction is evident in the low scores noted on the HCAHPS surveys (Bliefnick et al., 2019). This national standardized, public survey speaks to patients' perceptions of their hospital experience (CMS, 2021a). A hospital's low scores on HCAHPS surveys not only lower the reputation in the community, but also limit the amount of federal funding the hospital receives each year (Rivier University, n.d.). In fact, 30% of Medicare reimbursements are associated with these surveys. Each year, more than $1 billion is withheld from hospitals, and only facilities that maintain adequate standards of care and meet national benchmark scores on these surveys receive total reimbursements (Rivier University, n.d.).

It is well documented that hospitals try to improve these HCAHPS scores but have struggled to find interventions to improve the score regarding quiet at night (Kamdar et al., 2017). Strategies to lower hospital noise include fixing broken equipment, conducting noise level studies, purchasing costly low-noise equipment, educating staff, and implementing quiet-night interventions (Garside et al., 2018). Although other organizations have tried these interventions, the facility in which the project was conducted has no policy, procedure, or guideline to lessen this issue, regardless of numerous complaints, low HCAHPS scores, and lost revenue.

Needs Assessment

The site for this quality improvement (QI) initiative was a 366-bed acute care facility in a metropolitan city in the U.S. state of Connecticut. According to the CMS (2022), in 2020 the hospital scored 51%, compared to the national average of 62% and the state average of 52%, on the HCAHPS survey question, "Is the area around your room always quiet at night?" In 2020, the total federal reimbursement to the hospital if HCAHPS scores had been perfect would have been

$922,424.00. However, from that total, the hospital lost $308,423.00 (33.5%) based on its HCAHPS survey performance (B. Falder, personal communication, February 8, 2022).

For fiscal year 2021, the medical/oncology unit received 122 complaints in the voice of the patient component of the HCAHPS survey regarding noise level at night, frequent disturbance, annoying beds, loud equipment, and lack of consideration by staff about their need to rest (Professional Research Consultants [PRC], n.d.). The overall HCAHPS score for quietness for the unit in 2021 was 52.44% one of the lowest scores in this hospital. Fiscal year 2021 target HCAHPS score for the category the environment, which includes quietness and cleanliness was 71.5% and the unit averaged 69.4% which did not meet expectation (PRC, n.d.).

Despite patient complaints, low scoring on HCAHPS surveys, and low reimbursements, the administration had not implemented any initiatives to alleviate the problem. At 10:00 p.m., a loud chiming noise on the overhead announcement system signaled “nighttime.” Patients complained about this sudden loud noise and did not understand why it was necessary. This chime stemmed from a decades-old initiative, but the present staff were unaware of its meaning, so no follow-up activities occurred following the signal. Lights remained on, staff members continued to speak loudly, machines beeped constantly, garbage was emptied, linens were delivered, patients were continually disturbed, and it was business as usual. As a result of the administrator’s lack of prioritizing sleep, rest, and quietness, patients complained of poor sleep quality and length and a lack of ability to rest and recover in a quiet environment. This lack of prioritization was reflected in the voice of patient complaints, low HCAHPS scores, and losses in the hospital’s federal reimbursements (PRC, n.d.).

This project could succeed by lowering the noise level and creating an environment more conducive to rest and sleep at night. This improvement would be evidenced by having fewer

noise and disturbance complaints on weekly leadership rounding at night. An overall improvement in HCAHPS scores would also indicate project sustainability.

Wesselius et al. (2018) indicated that many modifiable hospital-related factors significantly affect the duration and quality of sleep in hospitalized patients. Regardless, the present gap between current practice and desired practice was that no policy, guideline, procedure, or institutional culture considered noise reduction, the need for quiet time, or the encouragement of sleep as necessary aspects of patient care.

SWOT Analysis

A SWOT analysis was conducted at the project site to identify the strengths, weaknesses, opportunities, and threats that could influence the success or failure of the project before its implementation. By conducting this analysis, I was able to plan appropriately by exploring alternatives and leveraging strengths to overcome threats.

Internal Analysis Strengths. This acute care facility has a culture of evidence-based practice and QI initiatives. The QI, nursing, and patient experience departments frequently implement initiatives to improve patient care for better patient outcomes. Active practice councils on most units meet monthly to discuss areas of improvement in inpatient care. There is facility-wide engagement and encouragement of innovative ideas, which unit managers review. These factors make implementing projects feasible by relying on staff motivation, involvement, and culture.

Some organizational attributes that helped achieve this project include the leadership culture for improvement, the need for change, and improved patient outcomes and experience. Leaders, including the site mentor, who has worked on numerous QI projects as director of inpatient services, are excited to join initiatives when they are evidence-based, a need exists, and

the resources are available. Their expertise and insight into the organization's culture and goals are a great asset. They feel a sense of pride in seeing improvements on surveys, especially HCAHPS, and receiving compliments. Upper management had recently reiterated the importance of HCAHPS scores, a current issue in stakeholders' minds, because revenue is needed to keep the hospital financially viable. This project provided a new idea to solve a problem, and its novelty came with much excitement and anticipation.

Internal Analysis Weaknesses. On the other hand, although the environment was set for implementing this project, a goal was to increase staff receptivity to new daily responsibilities. In the past, floor nurses have regarded such projects as simply more work, so requesting their compliance with activities to reduce noise at night required education on its therapeutic importance and ability to improve patient outcomes. In addition, nurses and other health care workers experience noise fatigue and desensitization to sensory overload (Salous et al., 2017). Staff might not prioritize the project because they might not deem the noise level an issue. Other non-nursing staff, such as those from hospitality and transport, could pose an additional weakness, because they visit the unit during the night to clean rooms or transport patients to and from the unit. Their essential services would be an added noise factor to be considered.

Finally, although positive HCAHPS survey responses are essential for reimbursement, PRC, the marketing and research company contracted to conduct and analyze the facility's HCAHPS survey, identified three key drivers to focus on to improve the facility's overall performance and increase reimbursement. However, they did not specify a quiet environment as a critical driver for this fiscal year. Although stakeholders were excited to delve into this project, convincing them of its overall financial cost versus benefit or the need to add another initiative was challenging.

External Analysis Opportunities. Due to financial losses, the hospital was willing to try simple, cost-effective interventions to boost these scores. Currently, no hospital in the area has any interventions geared explicitly toward improving patients' sleep and rest. Instituting such an intervention could improve a hospital's reputation and patient satisfaction, thus increasing patients' desire and choice to be admitted there. Patients and their family members are resources that could enhance the project initiation, so cooperation from these stakeholders could propel the project forward. The hospital's untapped resources, such as volunteer services and the Patient Family Advisory Council, provided human resources to help with the accountability and longevity of the project.

External Analysis Threats. Finally, the cost of implementing this project was a significant determining factor in initiating and sustaining the project. Competition for more relevant resources and emergent projects could have been prioritized over this project. Also, staff training is time-consuming and requires assistance from other departments to prepare content and conduct teaching sessions, which also could have kept the project from being implemented.

Recommendations

Several recommendations assisted leadership in providing the means to partner with this QI project. The first was to identify simple, cost-effective changes that could have the most impact on the noise level. The second, to utilize items already available at the facility to improve comfort, rest, and relaxation and aid sleep. Third, to incorporate groups of people such as volunteers to assist with distributing or moving items. Fourth, to use small groups such as huddles for training and notice boards with reminders instead of costly, large-scale online education content. Finally, to identify the holistic and therapeutic benefits this project could provide patients rather than just seeing it as another QI project and to recognize it as a way to

increase patients' respect, dignity, and rights through a culture ensuring a therapeutic healing environment.

Congruence With Strategic Plan

This organization prides itself on being "new" and "advanced," which means they are moving forward and pushing past the status quo (Nuvance Health, n.d.). Their values shape their actions and behaviors through four keywords: personal, imaginative, agile, and connected. The organization considers itself top caliber concerning patients. They aspire to be open-minded, consistent, and unified as they seek to listen, act, and speak with compassion. The strategic plan for the institution is to become a "partner" in health, and it emphasizes a human connection with each visit by partnering with individuals around health and wellness and transcending traditional medical encounters. The foundational requirements are at the center of this strategic plan: financial strength, people and culture, exceptional clinical programs, research, innovation, and teaching and learning. These foundational strategy requirements provide a patient-centered approach essential to creating a best-in-its-class performance (Nuvance Health, n.d.). This project aligned with the strategic plan by using research and evidence to identify innovative ways of addressing a current, nontraditional issue. It also helped the facility to provide holistic, high-quality care that could improve clinical outcomes and key performance indicators, such as HCAHPS scores. As the facility strives toward financial strength, this project provided sustainable economic federal support to meet the system's capital needs.

Problem Statement

Patients have numerous complaints regarding excessive noise and disturbance at night in the medical/oncology unit. Patient dissatisfaction is also evident in below-national-average

HCAHPS scores. The facility has no policy or guideline to encourage a quieter, more restful environment.

Clinical Question

A PICOT question is a method for creating answerable, searchable questions that result in a successful literature review that provides the best, most pertinent information on a topic. This acronym considers the population of the study and compares one intervention with another to contrast the expected outcome within a specific time frame (Oncology Nursing Society, n.d.).

PICOT Question. In medical/oncology patients (P), how does a Quiet-at-Night Care Bundle (I) compared to current practice (C) affect HCAHPS scores (O) within 12 weeks (T)?

Chapter II: Evidence

Search Strategies

The PICOT question was divided into main terms and themes to determine search terms. The terms used in the search were *noise in the hospital*, *quiet at night*, *reducing hospital noise*, *patient disturbance*, *hospital sounds*, *noise*, *patient satisfaction*, and *HCAHPS* AND *noise*. Given the medical-based content, PubMed and CINAHL were selected as the central databases to seek relevant articles. To find all possible pertinent articles, Boolean terms such as AND and OR were used to widen or narrow the search. Excess results were removed using the word NOT or quotation marks. To access the most recent suitable journal articles, a 5-year limit was set between 2016 and 2021, and those written in English were selected.

Over 1,980 entries were found in PubMed. The search terms were reshuffled, and more specific words were used. Instead of *noise in hospitals*, *patient satisfaction* and *hospital noise* were used. PubMed yielded 41 articles and CINAHL 129 articles matching the keywords. Articles related to the inpatient setting were chosen, and those that studied the pediatric/neonatal

populations were rejected. Studies outside the United States were included, especially those that offered meta-analysis and higher-level evidence. Of the 170 articles found, 24 were selected for review.

Appraisal of Evidence

An appraisal of the evidence was conducted to select high-quality, reliable evidence studies to make an informed decision before applying the results to clinical practice. Research design, type of research, purpose, sample size, instrument, results, variables, level of evidence, and applicability of results were assessed. Information gathered was placed in a table for easy summarizing, and trends were examined. Twenty-four studies were appraised, including quasi-experiment, randomized clinical trials, systematic reviews, quantitative studies, QI projects, and cross-sectional studies. From that appraisal, levels of evidence were deduced based on the Johns Hopkins evidence-based practice levels of evidence pyramid model (Dang & Dearholt, 2018).

Two Level I studies (Litton et al., 2017; Menger et al., 2017), two Level II studies (Garside et al., 2018; Tabas et al., 2019), and four Level III (de Lima Andrade et al., 2021; Hopper et al., 2015; Miller et al., 2019; Salous et al., 2017) were included in the synthesis of evidence. The remaining studies were Level V (Applebaum et al., 2016; Crawford et al., 2018; Delaney et al., 2018; Gellerstedt et al., 2019; Goeren et al., 2018; Graham et al., 2021; Hashemighouchani et al., 2020; Hedges et al., 2019; Kol et al., 2015; Lim, 2018; McGough et al., 2018; Sarkar et al., 2021; Walker & Karl, 2019; Wallis et al., 2019; Wesselius et al., 2018; Wilson et al., 2017).

Synthesis of the Evidence

Simple interventions to reduce environmental noise have improved patient satisfaction scores and increased self-reported hours of sleep (Garside et al., 2018; Hedges et al., 2019). The

literature has established that hospitalized patients experience shorter hours of sleep than at home (1.8 hr (Delaney et al., 2018) & 83 min shorter (Wesselius et al., 2018)), more frequent awakening (3.3 times in hospital versus 2.0 at home (Wesselius et al., 2018)), and inefficient sleep (Delaney et al., 2018; Wesselius et al., 2018). Shortened sleep is caused by exposure to factors such as light, noise, and extremes in temperature (Delaney et al., 2018; Wesselius et al., 2018). Patients are disturbed not only by environmental factors, but also the workflow of employees, other patients, medical devices, pain, and toilet visits also result in multiple disturbances throughout the night (Wesselius et al., 2018).

Staff Awareness and Patient Satisfaction

Graham et al. (2021), Hopper et al. (2015), and Wesselius et al. (2018) agreed that staff are also uncertain about the importance of sleep or allowing uninterrupted rest, resulting in multiple disturbances and stress-induced physiological changes in patients. Fatigue, sleep deprivation, a horrendous patient experience, and low satisfaction scores were found to result from noise and disturbance (Hedges et al., 2019; Sarkar et al., 2021; Walker & Karl, 2019). The staff also become desensitized to alarms, leading to a lack of response. Salous et al. (2017) noted that 63.64% of alarms were not answered during the night shift, and 60% of alarm response time was delayed up to 10 min. Widespread staff education, repairing noisy equipment, and rearranging the unit layout were recommended to mitigate this issue, but these ventures were proven expensive (Crawford et al., 2018; Garside et al., 2018; Salous et al., 2017).

The evidence is clear that excessive noise in hospitals is not therapeutic. It affects the patient physically and emotionally (Applebaum et al., 2016). Both patients and staff could benefit from a quieter environment to enhance patient outcomes, but this idea has received little attention (Garside et al., 2018). Cost-effective strategies must be used reduce noise levels and

improve patient satisfaction (Gellerstedt et al., 2019). Three noise-lowering approaches implemented across the appraised studies were a quiet-time bundle, an eye mask, earplugs, and a multifaceted approach.

Quiet-Time Bundle

Establishing a quiet-time bundle where conversations were limited, voices were lowered, lights were dimmed, and care was bundled at specific times reduced patients' perception of noise (Applebaum et al., 2016; Sarkar et al., 2021). In a descriptive comparative study, 70% of subjects verbalized reduced noise and postimplementation improvement in sleep ($p = .002$) (Applebaum et al., 2016). A quiet-time bundle also facilitated a more peaceful, more restful environment for the entire day and a 10–15-dB reduction in noise postimplementation (Goeren et al., 2018; Graham et al., 2021; Sarkar et al., 2021). It also increased nurses' satisfaction (Garside et al., 2018) and produced > 15% improvement in HCAHPS scores from 36%–51.4% (McGough et al., 2018) and from 33%–71% (Hedges et al., 2019). Graham et al. (2021) reported two disadvantages of a quiet-time initiative: requiring both a multidisciplinary team and extensive staff education. Bundle benefits were found to be variable and inconsistent, because one item could not be identified or singled out as having the most or almost negligible impact on noise reduction (Garside et al., 2018; Lim, 2018).

Earplugs and Eye Masks

Earplugs and eye masks were inexpensive, included no side effects of noise abatement instruments, and reduced noise and increased sleep and satisfaction in hospitalized patients (Litton et al., 2017; Tabas et al., 2019). A higher mean score of sleep efficacy was noted among patients given eye masks and earplugs than by those in the control group and those who experienced the quiet-time protocol (Tabas et al., 2019). A systematic review and meta-analysis

showed improvements in the quality of sleep and patient satisfaction among postanesthesia care unit patients who were given earplugs (Menger et al., 2017). However, evidence supporting the use of both items in decreasing noise and increasing rest is inconclusive (Garside et al., 2018; Miller et al., 2019). Earplugs alone did not reduce patient-reported peak noise levels but did help to reduce background noise (Garside et al., 2018). Both items were easy to adopt and initiate, but because the evidence to support their sole use was limited, researchers recommended that they should be included in a multicomponent plan (Hashemighouchani et al., 2020; Miller et al., 2019).

Multifaceted Approach

Crawford et al. (2018), Kol et al. (2015), and Wilson et al. (2017) suggest a multifaceted approach to reducing noise levels, which includes objectively monitoring noise levels in decibels using a sound level meter and ascribing appropriate interventions such as bundling care, limiting visitors, a nighttime sleep promotion cart, physical arrangement or repairs, and education. Crawford et al. (2018) observed that the combination of education, restricting visitors, and bundling care were ineffective. Noise levels frequently exceeded the project goals, < 55 dB during the day and < 50 dB at night. After combining staff education, a nighttime sleep promotion cart, and visual aids to remind staff to be quiet in surgical and medical units, Wilson et al. (2017) found a reduction in noise readings from 83.8 dB to 53.44 dB and from 90.7 dB to 55.07 dB, respectively.

Kol et al. (2015) combined noise measurements, staff education, physical rearrangement, and equipment repair and noted a statistically significant (p = <.5) reduction in noise levels. Bundling quiet time, offering earplugs, and monitoring noise levels with staff education improved HCAHPS scores in all three pilot groups (Graham et al., 2020). Wallis et al. (2019)

found in their rapid review of studies that objectively measured noise levels pre- and postimplementation that 14.5% had insufficient information regarding consistent, accurate methods to measure noise levels. Objectively measuring noise levels was not recommended to determine effectiveness (Wallis et al., 2019). Also, adding a warning signal such as an alarm or flashing light to indicate high noise levels was ineffective and often lost its impact over time (de Lima Andrade, 2021; Garside et al., 2018; Wallis et al., 2019).

Project Aim or Purpose

This project aimed to decrease patients' exposure to overall noise and disturbances during quiet hours by implementing a purposeful plan to increase rest and decrease noise on the night shift, thus improving patient satisfaction and overall experience as measured by HCAHPS scores and nurse leader rounding.

Objectives

Objectives at the end of the 12 weeks we are to see a:

1. 2% improvement in HCAHPS survey score on the question of quietness on the medical/oncology unit.
2. 15% decrease in complaints on the leadership rounding survey regarding noise level, patient disturbance, and inability to rest.
3. 20% decrease in complaints on the voice of patient component of the HCAHPS survey by respondents from this unit.

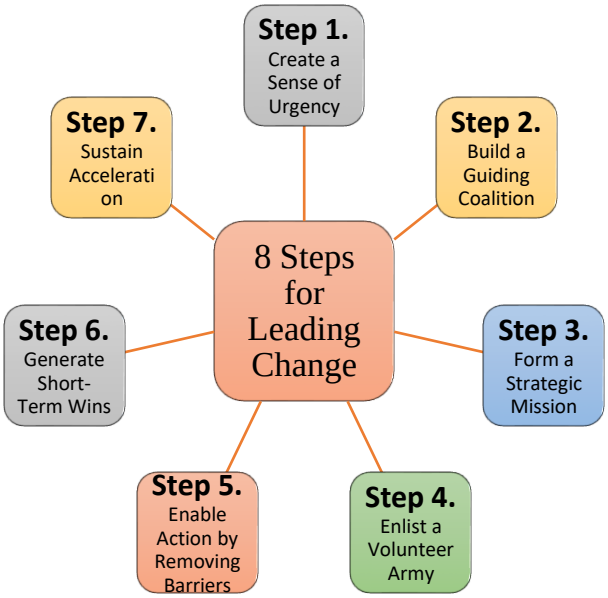
Implementation Model

I chose Kotter's change model, an 8-step process for leading change, as the framework to support the change and provide a theoretical structure for the project (see Figure 1). Dr. John Kotter, a Harvard business professor and change enthusiast, created this model after 30 years of

extensive research (Kotter, n.d.). Toor et al. (2022) found it to be a valuable change instrument for the health care setting, so I applied it to this initiative. The model focuses on guiding organizations through a process of transformation. A plan to propel the change from old to new increases success and sustainability (Construction Financial Management Association, 2013). The model emphasizes creating a new supportive and robust organizational culture that increases the chances of entrenching new behaviors in everyday work life. Because this project embarked on a new intervention that had not been attempted in this facility, developing a culture of maintaining a quiet environment improved staff accountability and ownership.

Figure 1

8-Step Process for Leading Change Model



Note. Adapted from *Kotter Methodology*, by J. Kotter, n.d., Kotter (https://www.kotterinc.com/what-we-do/methodology/#step-process).

The first step, to create a sense of urgency by helping others to see the need for immediate change, was taken by increasing staff awareness of patient noise complaints, low HCAHPS scores, and their significance, which created a heightened level of consciousness

among staff. Urgency pushed employees into acting; a clear vision directed the unit on the right path as envisioned by the project team (Laig & Abocejo, 2021). In Step 2, a "change team" coalition of power was launched with a vision of a new future (Kotter, n.d.). The project committee was the volunteers who helped guide, coordinate, and communicate the project through each stage (Laig & Abocejo, 2021). Step 3 refers to developing a clear vision that is different from the status quo. The vision became imaginable, desirable, clear, and focused, and was communicated to staff through in-service education and reminders.

Step 4 is communicating the vision to staff members and seeking volunteers for the project. The change team was tasked with gaining the trust and confidence of staff members as they volunteered to be change agents. The coalition targeted the mindset of staff members and their emotions. As a culture changes, emotional experiences such as anger, anxiety, confusion, and distrust are triggered. The sponsors and champions communicated warm messages and led by example to effectively enlist volunteers and change agents (Laig & Abocejo, 2021).

Steps 5, 6, and 7 are to develop short-term wins by removing barriers preventing this change and releasing the full potential to activate and sustain the change. These stages were prioritized to ensure that success would be unambiguous. Stakeholders problem-solved perceived obstacles ahead of schedule and used available resources to break down any hurdle without disrupting patient care (Lazuardi et al., 2021). Short-term gains or failures were noted weekly on the leadership rounding survey. This information was made public to unit employees as motivation (Lazuardi et al., 2021). The team was consistent with meetings and implementation of interventions at each stage to ensure long-term improvements in HCAHPS scores.

Finally, in Step 8, long-term change is anchored and sustained in individuals' culture, conduct, and standards at work. These values became a core part of the organization's values

(Construction Financial Management Association, 2013; Lazuardi et al., 2021). In the last step, the team was honest and transparent about the project's success and needs—the difference between the past and present and employees' positive attitudes regarding the change. The team received continuous support from management and achieved widespread implementation throughout the facility.

Chapter III: Methodology

Project Design

Quality improvement projects use systematic, evidence-guided processes and interventions to improve patient care safety and outcomes (Edgewood College, 2020). This project used the QI design to implement a Quiet-at-Night Care Bundle. QI was chosen as the design because it creates a sustainable process that will result in improved patient satisfaction and efficiency (Medical University of South Carolina Libraries, 2022).

Setting

The project occurred on the medical/oncology unit of a 366-bed acute care facility. This unit comprises 26 single-patient rooms with personal bathrooms. It has one hallway with rooms on either side, and the nurse's station, medication, and utility rooms are in the unit's center. This unit was selected due to the high number of patient complaints (122) received for fiscal year 2021 regarding noise levels at night, frequent disturbance, annoying beds, loud equipment, and a lack of consideration by staff about patients' need to rest (PRC, n.d.). In addition, it had received below-average quietness HCAHPS scores (52.44%) compared to other medical units (PRC, n.d.). Finally, the patient population is vulnerable and needs rest and regular sleep, especially those patients receiving cancer treatment. Regular sleep is associated with increased quality of life, better physical functioning, and fewer cancer-related symptoms (Trivedi et al., 2021).

The unit has 23 full-time, one part-time, and two per diem RNs, and six full-time and six part-time patient care technicians (PCTs) (C. Fitzpatrick, personal communication, January 21, 2022). The unit also has staff that rotates through the float pool to meet staffing needs. At night, the department has a maximum of four RNs and two PCTs, with an RN-to-patient ratio of 1:6–8 and a PCT-to-patient ratio of 1:10. The unit has one patient care manager, and the general supervisor oversees off-shifts. The charge nurse assigned to each shift also has a patient assignment, so performs a dual function. Three-unit secretaries are employed in the unit but are off duty at 11:00 p.m.

Population/Sample

The unit provides treatment and diagnostic interventions for adult patients with varied metastatic diseases. It also operates as an overflow unit for medical patients and rarely houses surgical patients. This patient population reflects those reported in the literature. Adult patients with a medical or surgical diagnosis require admission to inpatient care settings such as hospitals, sanitariums, or health centers. However, the literature did not provide evidence about oncology patients specifically.

The patient sample included in this project was admitted adult patients. A convenience sample of eight patients was selected each day (Monday to Friday) for inclusion in the Leader Rounding Survey- Quietness Audit. All patients who met the inclusion criteria though eligible could decline being included in the Leader Rounding Survey-Quietness Audit and specific aspects of the bundle. The bundle though impacted all patients as the hallway lights were lowered at 10 pm and staff lowered the voices. The facility requires unit managers to round on 40 patients per week to increase the confidence interval, which impacts its reliability (A.Varcoe, personal communication, March 8, 2022). The team chose to maintain the facility’s policy so

that results would be similar to those they would receive postimplementation of the project and for ease in sustaining the initiative. To be included in this Leader Rounding Survey- Quietness Audit, patients had to be admitted to the medical/oncology unit, were age 18 and older, alert, oriented, and able to respond verbally to questions regardless of language.

As determined by PRC, the HCAHPS vendor, a random sample of discharged patients were surveyed within 48 hours to 6 weeks postdischarge. The inclusion and exclusion criteria for an interview were adapted from the CMS, which standardizes the HCAHPS survey. Inclusion criteria included adult patients 18 years and older admitted for at least one overnight stay, with a nonpsychiatric principal diagnosis at discharge and alive at discharge (CMS, n.d.). Exclusion criteria include those discharged to hospice care, nursing homes, and skilled facilities; court or law enforcement patients; patients with a foreign address; no publicity patients (do not want admission revealed); and those excluded based on rules and regulations of the state in which the hospital is located (CMS, n.d.).

A secondary population of all night-shift staff (full-time, part-time, float, and travel RN and PCTs) was included. In-service education was provided in evening huddles for one week, and posters were posted on and around the unit with reminders about the project. Included staff were informed of the 12-week project timeline with no monetary compensation. The team provided donuts and coffee at designated huddles to discuss results and trends.

Tools and Instruments

Two tools were used to assess for improvement post initiation of the project. The Leader Rounding Survey-Quietness Audit developed by the Department of Patient Experience, was utilized to evaluate short-term progress and real-time improvements (see Appendix A). It is a data-driven digital rounding tool developed using Microsoft Teams that provides performance

results on a dashboard and data analysis of trends. The Leader Rounding Survey-Quietness Audit has four questions and an area for comments to clarify responses if needed.

The HCAHPS survey is a nationally standardized public survey consisting of 29 questions, 19 critical to the patient's hospital experience (see Appendix B). It asks questions regarding staff communication and responsiveness, cleanliness and quietness of the hospital, discharge information, and the rating of the hospital (CMS, 2021a). Statistical precision for this survey is based on a reliability criterion. The reliability target for the HCAHPS survey items is 0.8 or higher. To achieve this target, hospitals must survey 300 patients within 12 months (CMS, n.d.). HCAHPS surveys were conducted by PRC, a third-party vendor, via telephone. Patients were called up to five times over 6 weeks on different days of the week and times of day to allow patients to participate (PRC, 2018). Permission to use data from both tools was granted along with the site's Institutional Review Board approval.

Project Plan

Kotter's change model is an 8-step framework that directs the project's activities from creating a sense of urgency within the organization and unit to creating a sustainable plan. I, as a DNP student, assumed the role of team leader.

Create a Sense of Urgency

In meetings, I drew the attention of the chief nursing officer, the director of patient experience, the unit manager, and the director of patient care services to the low HCAHPS survey scores regarding environmental noise and the over 122 patient complaints on one unit (PRC, 2018). The potential for hospital-wide financial losses and patient dissatisfaction were highlighted during these meetings. I also emphasized the organization's goals of creating a more patient-friendly environment and our drive to implement new strategies to ensure the health and

recovery of our patients. I had candid conversations with night-shift staff regarding several of the complaints from patients and the need for change. The topic of environmental noise was added to the agenda of the Patient Family Advisory Council meeting to gain input from the community. These conversations created a heightened awareness of an issue that had not previously been given much consideration.

Build a Guiding Coalition

As the project leader, I created the primary team to develop the methodology and meet academic, ethical, and organizational requirements. This team included the student leader (me), the university faculty mentor and the practice mentor. In addition to the project team, an on-site interdisciplinary group was developed to provide expertise and support in implementing the project. This group included the chief nursing officer, the patient care manager for the unit, and the site mentor (director of patient care services). Site approval was obtained from the chief nursing officer to ensure that the organization accepted the need for change and supported the project.

Form a Strategic Vision and Initiatives and Enlist a Volunteer Army

The project's objectives to decrease the noise and disturbances experienced by patients at night, improve HCAHPS scores, and decrease patient complaints were explained to the site's interdisciplinary group. Scientific evidence was provided from journal articles to outline the potential benefits of using a Quiet-at-Night Care Bundle to meet the objectives. A clear outline of the current issues and how the future could be different was linked directly to the project implementation and role. I submitted Institutional Review Board (IRB) applications to the university and the project site for approval and requested approval to use the site (see Appendix C). Once approved, I received training on the correct way to use the rounding survey software

from the director of the patient experience department to ensure reliability, because I had never used this tool.

I designed, printed, and laminated “do not disturb” signs and reminder posters for the unit (see Appendix D). I requested earplugs from the stockroom and placed them in the clean utility room. Four education sessions were held at 7:00 p.m. over one week, and attendance was taken on a sign-in sheet to verify who had received the in-service (see Appendix E). Those on vacation or leave of absence, or who did not attend a session due to being float or travelers had to sign, acknowledging that they had read a two-page in-service document (see Appendix F). I did not retain the attendance record but used it only as a reference to ensure that all staff were educated. The attendance sheets were shredded at the end of the education sessions.

Staff was educated on the components of the nighttime bundle the project plan, the timeline, and expectations. Instead of the overhead chime, an announcement went out on Vocera, a wireless communication device worn by staff to signal quiet time from 10:00 p.m. to 4:00 a.m. The bundle also included dimming lights, lowering voices, closing patients’ doors, do not disturb sign, grouping patient care activities, and earplugs for the patients. Staff members were given a statement to introduce the bundle to patients, ask if they were interested in any of the items included, and inform them what they could expect from staff throughout the night (see Appendix G). The reminder poster explaining details of the bundle was posted on the unit, in the lunchroom, and in the bathroom.

Following the 2-week preparation phase, the project timeline occurred over 10 weeks, commencing in July 2022 and ending in September 2022. I conducted Leader Rounding Survey-Quietness Audit five times per week during that time. The unit manager and I analyzed a weekly printout of the data gathered from rounding that week for improvement or complaints. This data

was forwarded to all interdisciplinary team members and discussed in a biweekly meeting. The information was reviewed for completeness, and feedback regarding areas that needed improvement and accomplishments was solicited. I met weekly with night-shift staff to gain their input. The patient experience director and I assessed HCAHPS survey scores every month to identify trends in the data. This information was also provided to all persons involved.

Enable Action by Removing Barriers

Barriers that could affect project success included high patient ratios, changes in leadership, and staff burnout, so many of these barriers were removed to aid project success. Being understaffed with high patient ratios is a hospital-wide issue. However, three full-time nurses were hired, and the administration continued to interview applicants. The team provided treats such as donuts and coffee at designated huddles to improve employee morale. Due to the COVID-19 pandemic and leadership changes, unit managers have been given multiple units to manage, and they are often mandated to take patient assignments if there is a nurse shortage. I took on this responsibility to balance the responsibility of the eight required daily patient rounds using the Leader Rounding Survey and the Quietness Audit and the weekly meetings.

Generate Short Wins

A 12-week total commitment can cause stakeholder fatigue; as such, the team celebrated short-term goals, including the official beginning of the project, the first week, and monthly. Any change in the Leader Rounding Survey-Quietness Audit results and improvement in HCAHPS scores were celebrated and posted in the unit.

Sustain Acceleration and Institute Change

Once the project was completed, I no longer served in the role of team leader. However, the departments of patient experience and nursing services adopted the program because these

stakeholders were critical to implementing the project. Both departments currently analyze HCAHPS scores and the facility's leader rounding data to identify ways to improve patients' experience. They have been instrumental in this project and will continue to implement the bundle and make improvements to launch on all units.

Outcomes

At the end of the 12 weeks, there should be a:

- 2% improvement in HCAHPS survey score on the question of quietness on the medical/oncology unit.
- 15% decrease in complaints on the leader rounding survey regarding noise level, patient disturbance, and inability to rest.
- 20% decrease in complaints on the voice of patient component of the HCAHPS survey by respondents from this unit.

Procedures for Data Collection

The Leader Rounding Survey-Quietness Audit I performed gathered data from admitted patients via an electronic device that sent it to Microsoft Teams for storage and analysis. To ensure interrater reliability, I was trained by the director of patient experience to ensure that I asked questions appropriately and completed the survey correctly. PRC conducted HCAHPS surveys according to their reliability standards.

I performed leader rounding using the Leader Rounding Survey and the Quietness Audit five days a week as convenient. The software was accessed on any smart device and brought to the patient's room; surveys were completed while asking questions to ensure the correctness of the data. I was given my login and password, and each completed survey was tagged with my name. PRC conducts HCAHPS survey via phone interviews by trained personnel and calculates

the number of surveys to meet validity standards. This data was accessible by all members of leadership with a login and password for the tool. To protect the data, it could not be altered once entered. This data does not include any patient identifiers. Although PRC provides HCAHPS results weekly, we accessed only monthly reports following the initiation of the project. The project took approximately 12 weeks, from staff education to results analysis (see the Gantt chart in Appendix H).

Sustainability Plan

HCAHPS and the Leader Rounding Survey-Quietness Audit were the current tools used by the site to assess the patient experience. Data analysis and discussions of these surveys was also done and presented to multiple planning and interdisciplinary committee to improve patients' hospital experience. The physical items used in the bundle had always been available in the stockroom but prior the project were not ordered in sufficient numbers. The other elements provided a more systematic and intentional grouping of random considerate behaviors by staff. The bundle did not cause a financial strain; its elements represent consideration of patients' needs and create a holistic environment.

The project highlights a survey question that had been ignored by the administration, one which affects overall patient satisfaction and the hospital's reputation. Creating awareness of the issue and underscoring the improvement postimplementation was the team's momentum to identify this issue as a priority. The nursing and patient experience departments added the project to their portfolio to continue to assess data trends and adjust the bundle to meet patients' ever-evolving needs. Both the patient experience and nursing departments continued to meet at the patient experience committee meetings to discuss the survey findings from the HCAHPS scores and the Leader Rounding Survey-Quietness Audit. The unit manager also continues to do daily

leader rounding, a requirement for all managers. It is, therefore, feasible to create an organization-wide policy to be implemented across all units. This sustainability plan pushed the project forward, and the bundle elements can become established in the hospital's culture of courtesy.

Data Analysis

I used an individual login to conduct leader rounding on patients on a facility-owned tablet or cell phone to access the software and enter data. The software does not allow data to be duplicated, it identifies admitted patients and determines if a survey had already been completed on that day for that patient. Once the survey had been submitted, responses could not be altered after logging out. The Microsoft Teams software provided simple descriptive statistics in tables to track responses from the Likert scale. Any verbal comments were entered verbatim and analyzed as qualitative data. The director of the patient experience department entered the qualitative data in an Excel sheet, coded vital terms and phrases to identify recurrent themes, and cohesively presented the data.

HCAHPS scores were analyzed by PRC's Easy View data management and reporting tool, which uses descriptive statistics. This data was compared to that of other PRC clients, other units in the hospital, and current HCAHPS scores with the national 50^{th} and 95^{th} percentile (PRC, 2018). PRC presented the information in preformatted graphs and charts, which were quickly downloadable in PDF format. This data could be accessed only by hospital leaders with a PRC login, and data could not be altered in any way.

Institutional Review Board/Ethical Issues

Quality improvement projects provide advanced, rigorous approaches to improving the patient health and well-being and the health sector. However, they pose a unique challenge in

realizing ethical implications and ways to minimize the possibility of any ethical wrongs or potential harm to those involved (Hunt et al., 2021). As required to protect human subjects from any risks, the project was reviewed by faculty, and approval was sought from both Bradley University (see Appendix I) and the site's IRB (see Appendix J) to ensure that the project met acceptable ethical standards. Ethical issues, including mental capacity, consent of patients, risks, confidentiality, and access to data, were managed appropriately.

Mental Capacity, Consent, and Risks

The project did not include any participants, whether employees or patients, considered vulnerable. Vulnerable persons lack the power, intelligence, education, resources, strength, or needed characteristics to protect their interests (Office for Human Research Protections, n.d.). As an ethical consideration, only alert and oriented patients were included in the Leader Rounding Survey and the Quietness Audit. The requirements for HCAHPS inclusion and exclusion criteria were maintained in considering the welfare of discharged patients. The government stipulates these criteria and ensures that incapacitated patients in nursing homes and imprisoned persons are omitted (CMS, n.d.). The survey did not include patients with a mental condition as their primary discharge diagnosis (CMS, n.d.).

An application to waive consent for both staff and patients was considered because the project design provided minimal risks to participants. The project could not be practically carried out without this waiver, and the waiver would not adversely affect the right or welfare of the participants. Patients were told that their participation in the survey was voluntary and that their refusal would have no consequences (see Appendix K). Employee education sessions were required but did not demand extra time on the job or resources because they were held during work hours at the change of shift. However, their consent was not required, and they were told of

the project plan, intervention, and timeline. Their participation was necessary, and there was no consequence to their employment or benefits if they refused to participate in the project. This participatory statement was mounted on a flyer at the nurse's station and in the break room (see Appendix L). Finally, all participants faced minimal foreseeable risks, discomfort, hazards, or inconveniences related to the project.

Confidentiality and Data Access

Individualized logins were provided to the unit manager and me so we could complete the leader rounding survey on company-owned electronic devices, but no link between the patient's personal information and the survey responses was provided. Data was then analyzed. Hospital leaders with a login could access the data. However, this data had no personal identifiers to maintain patient anonymity. Information was stored on a database owned by Microsoft Teams and could not be edited. It will remain with Microsoft and can be accessed by those authorized by the software for hospital-wide quality improvement.

PRC, the hospital's third-party vendor for HCAHPS, must meet federal quality assurance guidelines to handle patient data. These requirements include having a random, unique identifying patient number to track each sample taken, allowing physical access to confidential data to authorized persons only, and not sharing responses with hospital direct care staff (CMS, 2021b). Data was stored on the PRC database and could be accessed only by those with a login and password. The data is grouped by unit, not individual patients, to protect patient identity.

Chapter IV: Organizational Assessment and Cost-Effectiveness Analysis

Organizational Assessment

Anticipated Barriers and Facilitators

This project commenced during a pandemic when all departments were understaffed and burdened. A hospital-wide nurse and PCT shortage meant that often the unit operated with the minimum required staff. Nurse-patient ratios were high, and staff complained of being overwhelmed. This situation posed a challenge to implementing the project because this added responsibility or consideration resulted in apprehension. To mitigate these concerns, the staff were educated on the project benefits, including a quieter shift for both patients and staff with fewer disturbances for both parties. Administratively, the leaders had been pulled into emergency mode, and as such, time dedicated to meetings to analyze and discuss data was limited. Also, PRC had not identified a quiet environment as a priority for this fiscal year. Hence, prioritizing time for this project was secondary. Virtual meetings, email threads with data attachments, and telephone calls were considered to facilitate the lack of time.

Risk/Unintentional Consequences

Using resources already available in a meaningful way and the care bundle's novelty increased receptiveness of the project. Minimal risks were anticipated, and little additional time commitment required by those involved. Other unintended benefits of the project included creating an environment more considerate of patients and their holistic needs and creating a formal huddle format to include short education sessions. Also, the project revealed a more robust view of HCAHPS scores and how they impact both the reputation of the facility in the community and the development of teamwork among staff members. Unintended issues that occurred from the inception of this project to its completion included a change in leadership and budgetary constraints. The unit manager, who was instrumental and excited to mobilize staff, was changed, so the new unit manager had to reintroduce the concept and plan. Also, due to cost, the inclusion of eye masks was eliminated from the plan.

Interprofessional Collaboration

The department of patient experience, including the director, who is nonclinical, collaborated with the nursing department to ensure that the project met its goals and objectives. The nursing sector provided education to staff, completed the Leader Rounding Survey-Quietness Audit, ordered stock, and managed the involvement of nurses and PCTs. The patient experience department tracked data, followed trends in scores, and provided summaries in graphs and tables.

Cost Factors

Cost-benefit analysis is a method to compare the cost and benefit of an intervention, where both are expressed in monetary value (Centers for Disease Control and Prevention, n.d.). This evaluation provided evidence of the financial benefit of conducting this project. The annualized expenses associated with the Quiet-at-Night Care Bundle include personnel and nonpersonnel expenses, for a total of $1,474.00. These costs include educational material (handouts, posters) and sessions, a quiet-night kit (do not disturb signs and earplugs), and refreshments for the results huddle. The current annual hospital reimbursement benefit from one improved HCAHPS score is $14,390.00 (B. Falder, personal communication, February 8, 2022). The net benefit annually is $12,916.00, a subtraction of the expenses from the annual reimbursement benefit (see Appendix M).

This net benefit indicated an increase in the hospital's reimbursements, thus underscoring the importance this intervention to the patient and the financial gains of the hospital. Using evening huddles to educate staff instead of a formal 1-hour training where staff is paid to attend, saved the team $1,565.50 (based on the average hourly rate). I donated the expenses for refreshments for monthly result huddles, saving $150.00. Therefore, the cost of this 12-week

project was $440.20, which the unit's budget and donations covered. Finally, a comfortable patient in a quiet environment would be more likely to be more satisfied with their care and overall experience (Walker & Karl, 2019). This satisfaction creates a ripple effect reflected in the responses on HCAHPS surveys, increases revenue for the facility, and increases the hospital's reputation.

Chapter V: Results

Analysis of Project Outcome Data

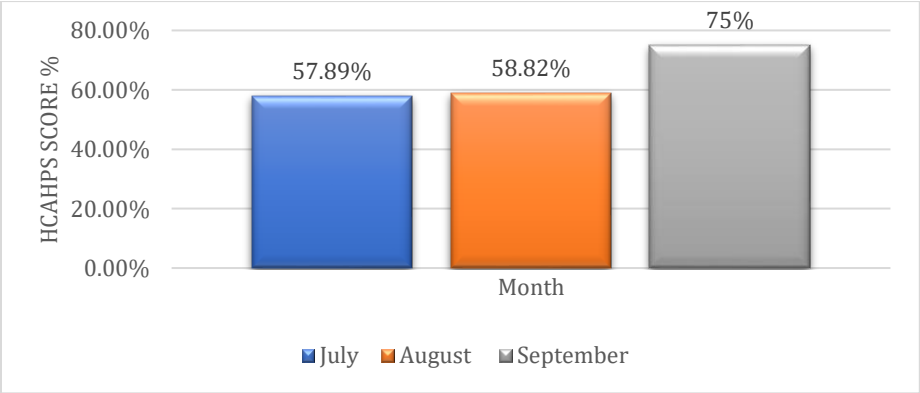
The project implementation began with four evening huddles that 16 RNs, seven PCTs, and three secretaries out of 38 staff members attended. Over 10 weeks, 169 patients were surveyed (n = 169), and PRC conducted 48 HCAHPS surveys of discharge patients (n = 48).

Effect on HCAHPS Score

Steady improvement in the HCAHPS scores regarding quietness occurred each month from July to September (see Figure 2). The July monthly percentage was 57.89% (n = 19), August was 58.82% (n = 17), and September was 75% (n = 12). The quarterly average was 63.9%.

Figure 2

Monthly HCAHPS Score Regarding Quietness

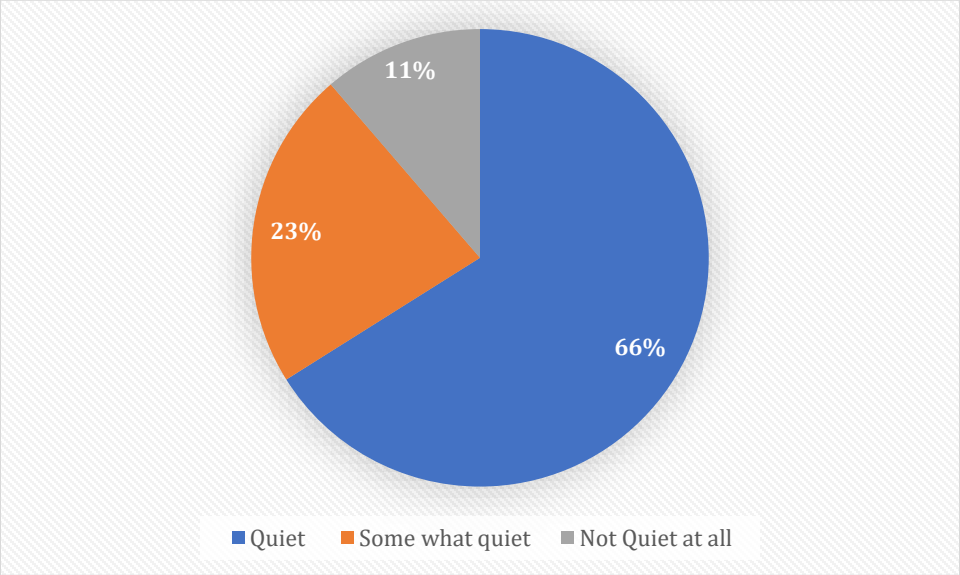


Leader Rounding Survey-Quietness Audit

For the question asking whether they thought the unit was quiet, somewhat quiet, or not at all quiet, 66% (*n* = 111) of participants thought the unit was quiet, while only 11% (*n* = 19) thought it was not quiet (see Figure 3).

Figure 3

Question 1: We strive to provide you with a quiet environment for you to heal. How was the noise level during your stay?

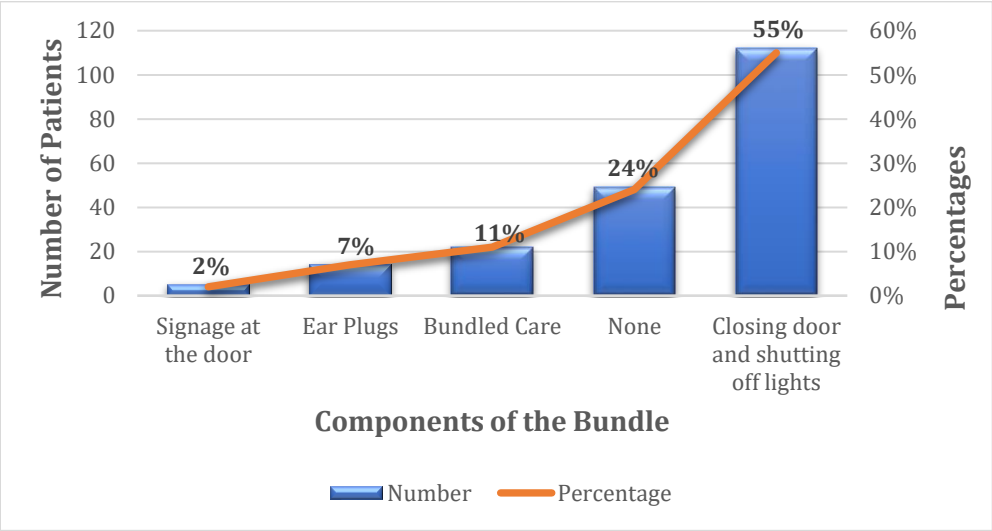


The Quiet-at-Night Care Bundle was utilized by 71% of patients surveyed during this project. Of those who used items from the bundle, 77% noted that one or more components successfully reduced the noise and disturbance between 10:00 p.m. and 4:00 a.m. The response to the question regarding which component of the bundle helped the patient get the most rest was closing the door and shutting off the lights (55%). The least used component was the do not disturb sign on the door (2%), followed by earplugs (7%), and bundling care (11%) While 24%

of patients surveyed reported that none of the items were very effective in helping them get more rest (see Figure 4).

Figure 4

Effectiveness of Each Bundle Component



Additional comments noted on the Leader Rounding Survey- Quietness Audit were noise sources such as noisy beds and air conditioning units, staff members chatting in hallways or at their doors, screaming patients, and loud shift change. Others thought the noise levels were understandable and were not bothered by being disturbed.

HCAHPS: Voice of the Patient

Three comments were noted on the voice of the patient component of the HCAHPS survey from July to September 2022. One patient commented that a patient was screaming all night, which disturbed him. Another mentioned that alarms went unattended for 20 min, creating a significant disturbance. Another patient said that they could have gotten more sleep but did not clarify further.

Chapter VI: Discussion

Analysis of SMART Objectives

Objective 1

Objective one was to see a 2% improvement in HCAHPS survey score on the question of quietness on the medical/oncology unit. A 12.11% improvement in the HCAHPS survey score regarding quietness occurred from July to September 2022 (n=48, 63.9.%) compared to the previous quarter, April to June (n=56, 51.79%). This change superseded the goal of achieving a 2- percent improvement on this survey. The data is preliminary and will not be finalized until 45 days following the close of the survey period (November 30, 2022). PRC updates the data daily as HCAHPS surveys are completed. The data was abstracted mid-November which explains why only 12 surveys were noted for the month of September. An average of 17 HCAHPS surveys are expected each month for this unit (L. Issac, personal communication, November 18, 2022). The result trend however is moving in a positive direction as this was the only unit in the hospital during this period that showed positive continuous improvement in quietness. September's score of 75% is the highest the unit has received in this category of quietness. The unit also scored 75% in the overall category of the environment which includes quietness and cleanliness. This is the highest score the unit has received in this area since October 2021, which superseded the fiscal year 2022 target goal and national average of 72.8 % (PRC, n.d.). These results reflect an improvement and a push in the right direction. Continuous implementation and improvement create practice and organizational change.

There was a discrepancy between the percentage of inpatients who voiced that the unit was quiet (66%) to leadership during rounding versus those discharged (63.9%) via HCAPHS, which could be attributed to the difference in sample size. The leader rounding surveyed 169

patients versus PRC, which surveyed only 48. This discrepancy was expected, because the larger the sample size, the more accurately it mirrors and represents the behavior and opinion of the whole population (Kalla, 2009). Finally, the difference in percentages could also be attributed to patients being more sympathetic to staff, not wanting to cause trouble, or being afraid of repercussions in care if they gave an honest answer on leader rounding (Bell et al., 2018). Although they were informed that their responses were anonymous, a few patients voiced fear about being open and honest about their feelings.

Objectives 2 and 3

Objective two was to see a 15% decrease in complaints on the leadership rounding survey regarding noise level, patient disturbance, and inability to rest. The baseline data did not exist as the organization changed their leader rounding tool and did not include the quietness question. With the use the newly created Leader Rounding Survey-Quietness Audit I was unable to compare percentages of complaints before the start of the project and at the end. However, during the project, 19 of 169 (11.24%) patients thought the unit was not quiet on the Leader Rounding Survey-Quietness Audit. This response, by any measurement, is significant and the organization will continue to address this concern.

In addition, during the previous year, an average of 30 complaints regarding noise were reported each quarter in the voice of the patient component of the HCAHPS survey. Objective three was to see a 20% decrease in complaints on the voice of patient component of the HCAHPS survey by respondents from this unit. During the project period, only three complaints regarding noise were noted in the voice of the patient. This significant improvement of a 90% decrease far exceeded the goal of a 20% decrease in complaints. This decrease, however, does not mean that patients think the unit is not noisy. The question in the voice of the patient survey

asks specifically if anything stood out during their stay. Patients not mentioning noise could indicate that noise levels were not a priority, were simply not excessive enough to be an actual nuisance, or were not sufficient to be significant.

Analysis of Implementation Process

The leading change model was used to outline the implementation process. The eight steps of the model created the working procedure for the 12-week timeline. The initial steps of the implementation process included coordinating with staff and the unit manager to ensure the physical preparation of providing the bundle components and awareness. Due to earlier deadlines following a delay in IRB approval, the timelines for education huddles were changed from Monday, Wednesday, Friday, and Sunday to Tuesday, Wednesday, Thursday, and Friday, which allowed the nurses more time to ask questions, become familiar with the bundle and location of items, and gain momentum over the weekend. I was also available over the weekend for one-on-one conversations to answer individual questions. This change underscored the sense of urgency on the issue, and a team of volunteers was created.

In the initial phases of the project plan, the hospital utilized a leader rounding tool (iROUND) that included a question regarding quietness on the unit. Using this tool would align with the role of the unit manager and assist with project sustainability, because rounding by nurse leaders on eight patients each day, Monday through Friday, is an organizational requirement. However, during the methodology phase, the institution created its own leader rounding tool for unit managers. In addition, the patient experience department created a tool solely to assess nighttime noise (Leader Rounder Survey- Quietness Audit), which was included in this project. This change left me with the sole responsibility of conducting leader rounding regarding quietness, which was no longer a requirement of the nurse manager. Completing an

additional rounding tool would have been time-consuming and would take away from the time needed to complete her job assignment. As such, patients were rounded on five random days each week, including weekends, per my availability.

Multiple internal dynamics, including staff shortages, made conducting weekly huddles with staff members in a formal setting challenging. Instead, I met one-on-one with RNs, PCTs, and secretaries during rounding to discuss the project, patient complaints, compliments, and results. This strategy was thought to be beneficial because I could interact and get to know the staff, thus encouraging honest and open conversation. Informing team members of the project results occurred via email with attachments of diagrams, which were then discussed through email threads, allowing nurse leaders to respond at the most convenient times and reducing the appearance of added stress and responsibility.

Lessons Learned

During this project, the team learned that staff acceptance is the most significant attribute to success. Once the staff identifies the project as a need, their ownership helps build success. In addition, communication and follow-up are necessary to ensure that all members are on the same team and that leaders are kept in the loop with the project's happenings, difficulties, and successes. This communication can be provided in any format that is convenient to all parties. Based on the institution's culture for this project, email was the most effective means of communication, providing quick responses and allowing each person to give input without taking time away from their role.

Successes

The project was seen as simple but valuable. It allowed staff members to develop a sense of empathy and understanding of patients' holistic needs. Before this project, many staff

members noted that they had not put much thought into the need for the patient to rest. They were more concerned about getting the task done, hoping the patient would appreciate their efforts to restore their health. As such, the number-one success was having the staff members think critically about how their actions affect patients and the financial impact their efforts have on the institution.

Another success is hearing the feedback from patients who voiced how quiet the unit was and how impressed they were by the courtesy of staff members. One gentleman's comments remain constant. He noted during rounding that the unit had been like a disco at night six months prior, but now he could sleep with the door open; that is how quiet the department had become. These comments remind the project team why this project was implemented and whom it has helped. Finally, meeting and surpassing the project's goals was the first success but working as a team to create a haven for our patients and seeing the results confirm that each staff member's hard work has not gone unnoticed is the most significant success.

Difficulties Implementing the Project

Planning and gaining IRB approval were deemed the most challenging internal issues. In addition, staff needed frequent reminders to introduce the bundle and its components at night. After a few weeks of positive results, the team became complacent about introducing the bundle. Earplugs were often in a corner and out of sight, and handwritten do not disturb signs were on the doors, instead of the prepared laminated signs used in the bundle. At this point, I held huddles and one-on-ones with staff to remind them of the project and its purpose. Signs and earplugs were moved to the appointed areas, and the staff was reminded not to remove them. However, even during these moments of lapse, patients did not complain of noise or being disturbed.

Another challenge faced was rounding on eight patients per day. This sample size aligned with the institution's daily nurse leader rounding requirements. The unit has a 26-bed capacity; however, due to staffing shortages, they are often not booked to capacity because not enough RNs are available to manage care of the patients, leaving fewer eligible patients to round on. On many days, I had difficulty acquiring eight alert and oriented patients who had spent at least one night on the unit. Other factors, such as patients not being on the unit at the time of rounding and patients unwilling to participate, reduced the number of patients included in the survey, making it difficult to achieve a sample size of 400 (40 each week for 10 weeks). Much of the rounding included educating and introducing patients to the project and the Quiet-at-Night Care Bundle. However, a smaller sample size did not affect the results, because the team could follow trends in responses for immediate remediation or celebration. Using the discharge survey as the primary result to indicate success or failure also supplemented results from patient rounding.

Analysis of Limitations and Deviation From Project Plan

The deviations accounted for the change in the project plan to ensure its success. For example, I realized that rounding Monday to Friday was not the best way to maximize the number of eligible patients in the survey. In the first week, patients were annoyed when asked the same questions on consecutive days, especially those who had had no previous issues with the noise level. Also, patients had not had enough time on the unit to assess the noise level and develop opinions about whether any bundle components were beneficial. Allowing a day or two in between allowed patients time to think, assess each component's effectiveness, and compare each day. Allowing a day or two in between rounding also gave new patients time to be on the unit for at least one night before asking their opinions. When rounding was done on consecutive days, I had to provide more education about the bundle and project with new patients who had

not experienced a night, rather than rounding with the survey, which then took away from the staff member's role of introducing the project and carrying through with the intervention.

Having one-on-one with staff regarding updates and reminders of the project allowed open conversation regarding the barriers to not using the bundle at night and concerns and recommendations. It also provided insight from staff members who might be too timid to speak openly in a huddle. Their ideas were then raised anonymously in later general huddles, which brought more meaning to the conversations and even greater ideas. Finally, email as the primary means of team communication highlighted that communication can take varied forms once the message is sent, and all parties are kept in the communication loop. Email was preferred by everyone. There was no delay in responses, and team members did not have to schedule a time out of their busy day to meet, however if an issue was emergent, we met face to face.

Implications

Practice

The project can be easily sustained because the groundwork has been laid. The unit is aware of the impact that noise and disturbance have on patients and the long-term impact on the organization. All components of the bundle are on the unit as well as in the stockroom. The Quiet-at-Night Care Bundle does not take time away from patient care, but rather enhances patient care. At the end of the project, maintaining a quiet environment became the norm because per diem, travelers, and float staff knew that this unit was serious about decreasing noise levels and ensuring that patients had the opportunity to rest. This long-term change is anchored in the unit's culture.

Some modifications were discussed with staff and the unit manager to enhance the bundle's value and ensure that patients receive the full benefits of a quiet environment. These

include starting quiet time earlier at 9:00 p.m. instead of 10:00 p.m. The bundle could be used to lower noise levels during this time. This idea was tabled because earlier night hours tend to be busier and noisier. Starting quiet time earlier would allow staff to offer the bundle items earlier and allow patients a longer time to rest. Another modification would be to offer the bundle in the admission package, so patients have the information and items on hand upon admission.

The project can be quickly adopted by other units in the facility because it is cost-effective, easily implemented, and does not take time away from caregivers' role, and data analysis to measure effectiveness is already performed by PRC with the HCAHPS survey. I do not recommend that leaders conduct a leader rounding tool specific to noise level such as the Leader Rounding Survey-Quietness Audit; however, I suggest that a question soliciting data regarding noise levels be restored to the existing facility's leader rounding tool so leaders can garner feedback without adding to the workload, making sustainability easier.

Future Research

Developing and implementing the project led to partnerships between several disciplines, namely, nursing, education, and patient experience. There are also opportunities for further partnership with physicians. One concern brought up in discussions was that many nonessential orders and medication were timed during quiet time; for example, stool softeners and other assessments were timed for 3:00 a.m. Nurses were confused about the importance of waking patients to complete these tasks versus disturbing the physician about bypassing them. Including physicians and pharmacy would enhance the project by making sure that nonessential medications would be rescheduled before or after quiet time, or that orders would specify that they should be completed when the patient is awake. Other departments, such as hospitality and

transport, contribute to noise levels during quiet time and should be included in finding meaningful ways to lower noise levels.

Future research to identify the bundle's benefits could include collecting quantitative evidence about the actual noise levels on the unit by measuring in decibels rather than relying only on qualitative responses about the patient's perception of noise, and by gathering data regarding the exact number of hours a patient slept as opposed to their perception of their sleep. The results of this project will be disseminated at the Professional Practice Council (Shared Governance) to nurse and PCT representatives from all patient care units; the Patient Experience Committee meeting to all hospital leaders; the Patient and Family Advisory Council to community members, volunteers, former patients, and families; and all unit managers. These councils, committees, and meetings will provide a forum for a broad cross-section of hospital leaders and influencers to help expand the project beyond the pilot to be adopted throughout the facility and enhance interdisciplinary collaboration.

Nursing

This project is significant to nursing because it allows nurses to independently influence a patient's recovery by creating an environment conducive to rest and recovery. So often, the significance of a quiet environment is overlooked. This project places this concept on the front line, where nursing can spearhead and reintroduce it to patients, families, and administration. The results of this QI project provide evidence that patients appreciate being able to rest in a quiet environment in the hospital setting and the myriad benefits it offers. The project highlights that nurses are trendsetters utilizing evidence in practice. This data can now be used during hospital orientations and nursing education to understand the importance of a healthy environment and holistic nursing.

Health Policy

Currently, the facility and the health system at large have no policy or guideline regarding quietness. Developing and implementing a local system-wide policy would ensure that employees in every department are aware of the need to reduce noise levels at night. Guidelines specific to each department that interacts with patients during these hours could be created. For example, environmental services delivery and garbage collection times, medication administration timing, and overhead paging of nonessential announcements all contribute to excessive noise during night hours, but departmental guidelines could ensure that employees reduce noise levels at night while performing their work.

Chapter VII: Conclusion

Value of the Project

Hospitals are naturally busy and noisy as staff members work to provide care for patients, so some disruption is unavoidable. However, although staff become acclimatized to noise levels, many sounds disturb the peace of patients, which is needed to enhance healing. Sleep and rest are essential, and creating the right balance is crucial in improving recovery time and the patient's experience. Reducing hospital environmental noise levels is one area in which the quality, nursing, and patient experience departments can work together, because noise levels affect patients' clinical outcomes, thus decreasing patient satisfaction.

Noise in hospitals is often beyond the scope of nurses independently. However, this QI project led by nurses and developed by multiple stakeholders focused on changing noise expectations, emphasized individual bedtime rituals and courtesy among staff, and led to measurable improvements in patient perception of noise and satisfaction with their hospital stay. This project underscored the importance of interdisciplinary collaboration when the nursing and

patient experience departments identified noise and disturbance as a target for improvement. Using the Quiet-at-Night Care Bundle, they could lower the perception of noise and increase satisfaction, as noted during leader rounding and on the HCAHPS survey, which ultimately created a culture shift on the unit, establishing a quiet workplace and a better place to heal.

DNP Essentials

The DNP Essentials outline the curricular components that must be present in programs conferring the doctor of nursing practice degree and the core competencies necessary for advanced practice roles (American Association of Colleges of Nursing [AACN], 2006). This project aligns with all eight Essentials and reflects my organizational and systems leadership preparation.

This project met Essential I, Scientific Underpinnings for Practice (AACN, 2006), by combining the conceptual foundation of Florence Nightingale's environmental theory with the principles of science and medicine to identify environmental effects of noise on patients' health, well-being, and optimal functioning. This background created evidence to develop new approaches to minimize environmental noise and disturbance.

Aligning with Essential II, Organizational and Systems Leadership for Quality Improvement and Systems Thinking (AACN, 2006), I developed a new approach to noise to meet the needs of the patient population by incorporating scientific evidence, finance, organizational policy and culture, and ethical considerations. I maintained clear communication channels with team members and staff through meetings, huddles, and emails. The project was cost-effective, and a cost analysis ensured that costs remained low to optimize the benefits.

Essential III, Clinical Scholarship and Analytical Methods for Evidence-Based Practice, speaks to translating evidence into practice and disseminating and integrating new knowledge

(AACN, 2006). To meet this Essential, I appraised 24 studies to create a synthesis of evidence that was used as the foundation to create the Quiet-at-Night Care Bundle for this QI project. The information gathered from the literature assisted in developing the methodology to ensure patient safety. The results from this project will be used by the organization to establish guidelines and improve the care provided.

I met Essential IV, Information Systems/Technology and Patient Care Technology for the Improvement and Transformation of Health Care (AACN, 2006), by using information technology to develop the leader rounding tool with Microsoft Teams software, to analyze data, and to create charts for representation. Using PRC's software, I found current HCAHPS surveys data, and analyzed and compared data trends from different units, quarters, and years.

Although the facility and health care system have no current policy regarding reducing noise levels, this project demonstrated leadership in developing a policy, which met Essential V, Health Care Policy for Advocacy in Health Care (AACN, 2006). The evidence will be used to influence policymakers through active participation with and presentations to committees such as shared governance, patient experience, and the Patient and Family Advisory Council.

Essential VI, Interprofessional Collaboration for Improving Patient and Population Health Outcomes (AACN, 2006), was met by this project, and the contribution of a diverse team of professionals cannot be overemphasized. The project team included individuals from the nursing department, patient experience, and education. I led this team, proficiently utilizing their expert consultation. In particular, the knowledge of the unit manager and the director of inpatient services in the nursing department about the dynamics of managing a unit, budgeting, and coordinating with staff was crucial to project success. Nursing education assisted in creating the educational components for the huddles. The director of patient experience was vital in

understanding and interpreting HCAHPS surveys and creating the Leader Rounding Survey-Quietness Audit . Other experts included the IRBs to ensure that the project was ethical and the assistant vice president for data, management, and analytics, who provided insight into the financial reimbursement, losses, and gains from HCAHPS surveys.

Essential VII Clinical Prevention and Population Health for Improving the Nation's Health (AACN, 2006), was met by assisting in achieving national goals for improving population health. It provided leadership to integrate evidence-based population health for individuals admitted to the hospital. It aligns with the Healthy People 2030 goal of improving health, productivity, well-being, quality of life, and safety by helping people get enough sleep, because the more rest individuals receive, the healthier and more productive society becomes (Office of Disease Prevention and Health Promotion, Healthy People 2030, n.d.).

Essential VIII, Advanced Nursing Practice (AACN, 2006), was met because I developed a therapeutic relationship with staff and patients. I conducted one-on-one sessions with nurses and PCTs about the project, its needs, and its results, helping to guide, mentor, and support nurses as they provided excellent care. The education huddles and my constant presence on the unit helped to educate and guide staff through this transition and change in care.

Plan for Dissemination

Dissemination of any project is important to create awareness of new bodies of evidence to assist others in improving their practice. The final project will be submitted to the Bradley University DNP Committee for review and approval. Once approved, I will present a poster to DNP committee members and the public. Upon meeting this internal requirement, I will upload this document to Bradley's DNP project repository for access by students, faculty, and other interested persons. I also intend to formally present the findings to the organization in which the

project was conducted through invitations to committees to highlight the importance of rest and how small steps can effectively improve patient satisfaction. The objective of bringing the findings to the hospital leaders' attention is to influence hospital-wide policy development.

I intend to disseminate this information to the broader population by seeking publication in the Journal of Holistic Nursing, which integrates the science of health and healing, exploring holistic nursing models. I selected this journal because it invites submissions related to holistic nursing practice, health care, and policy and highlights the possibility of health and healing in human systems rather than on a disease process, which aligns with the primary intent of this project (Sage Publishing, 2022).

Attainment of Personal and Professional Goals

As a current night-shift nurse, I have tried my best to remain quiet and create an atmosphere of peace. I was unaware that my behaviors of empathy for the patient's holistic needs were evidence-based and could be used to create this bundle. I understand I am not the only staff member who somehow used elements of the bundle before this project. However, placing these components together in a meaningful, intentional way ensures consistency among staff each night. I am grateful to have been given this opportunity to work with gifted professionals who solely intend to provide the best care driven by evidence. As I seek to fulfill my own personal and professional goals, I also appreciate having added to the body of knowledge to help other units and possibly institutions develop personalized care plans to meet the needs of the "whole person" to not only improve patient satisfaction, but also to improve patient outcomes.

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Appendix A: Leader Rounding Survey - Quietness Audit

Date of Encounter: _/_/_

1. **We strive to provide you with a quiet environment for you to heal. How has the noise level been during your stay?**
   - Quiet
   - Somewhat quiet
   - Not quiet at all

2. **Did you use any items from the Quiet-at-Night Care Bundle overnight?**
   - Yes
   - No

3. **Did the Quiet-at-Night Care Bundle decrease the noise level and disturbance between 10pm and 4am?**
   - Yes
   - No

4. **What item helped you gain the most rest overnight?**
   - Earplugs
   - Bundled care
   - Closing the door/cutting off lights
   - Signage on the door
   - None

Comments:_____

Note: "Leader Rounding Survey- Quietness Audit", by Patient Experience Department, Norwalk Hospital, 2022.

Appendix B: HCAHPS Survey

HCAHPS Survey

SURVEY INSTRUCTIONS

- You should only fill out this survey if you were the patient during the hospital stay named in the cover letter. Do not fill out this survey if you were not the patient.
- Answer all the questions by checking the box to the left of your answer.
- You are sometimes told to skip over some questions in this survey. When this happens you will see an arrow with a note that tells you what question to answer next, like this:

  ☐ Yes
  ☑ No ➔ *If No, Go to Question 1*

You may notice a number on the survey. This number is used to let us know if you returned your survey so we don't have to send you reminders.
Please note: Questions 1-29 in this survey are part of a national initiative to measure the quality of care in hospitals. OMB #0938-0981 (Expires November 30, 2021)

Please answer the questions in this survey about your stay at the hospital named on the cover letter. Do not include any other hospital stays in your answers.

YOUR CARE FROM NURSES

1. **During this hospital stay, how often did nurses treat you with courtesy and respect?**
   1 ☐ Never
   2 ☐ Sometimes
   3 ☐ Usually
   4 ☐ Always

2. **During this hospital stay, how often did nurses listen carefully to you?**
   1 ☐ Never
   2 ☐ Sometimes
   3 ☐ Usually
   4 ☐ Always

3. **During this hospital stay, how often did nurses explain things in a way you could understand?**
   1 ☐ Never
   2 ☐ Sometimes
   3 ☐ Usually
   4 ☐ Always

4. **During this hospital stay, after you pressed the call button, how often did you get help as soon as you wanted it?**
   1 ☐ Never
   2 ☐ Sometimes
   3 ☐ Usually
   4 ☐ Always
   9 ☐ I never pressed the call button

YOUR CARE FROM DOCTORS

5. During this hospital stay, how often did doctors treat you with courtesy and respect?
   - 1 ☐ Never
   - 2 ☐ Sometimes
   - 3 ☐ Usually
   - 4 ☐ Always

6. During this hospital stay, how often did doctors listen carefully to you?
   - 1 ☐ Never
   - 2 ☐ Sometimes
   - 3 ☐ Usually
   - 4 ☐ Always

7. During this hospital stay, how often did doctors explain things in a way you could understand?
   - 1 ☐ Never
   - 2 ☐ Sometimes
   - 3 ☐ Usually
   - 4 ☐ Always

THE HOSPITAL ENVIRONMENT

8. During this hospital stay, how often were your room and bathroom kept clean?
   - 1 ☐ Never
   - 2 ☐ Sometimes
   - 3 ☐ Usually
   - 4 ☐ Always

9. During this hospital stay, how often was the area around your room quiet at night?
   - 1 ☐ Never
   - 2 ☐ Sometimes
   - 3 ☐ Usually
   - 4 ☐ Always

YOUR EXPERIENCES IN THIS HOSPITAL

10. During this hospital stay, did you need help from nurses or other hospital staff in getting to the bathroom or in using a bedpan?
    - 1 ☐ Yes
    - 2 ☐ No ➔ If No, Go to Question 12

11. How often did you get help in getting to the bathroom or in using a bedpan as soon as you wanted?
    - 1 ☐ Never
    - 2 ☐ Sometimes
    - 3 ☐ Usually
    - 4 ☐ Always

12. During this hospital stay, were you given any medicine that you had not taken before?
    - 1 ☐ Yes
    - 2 ☐ No ➔ If No, Go to Question 15

13. Before giving you any new medicine, how often did hospital staff tell you what the medicine was for?
    - 1 ☐ Never
    - 2 ☐ Sometimes
    - 3 ☐ Usually
    - 4 ☐ Always

14. Before giving you any new medicine, how often did hospital staff describe possible side effects in a way you could understand?
    - 1 ☐ Never
    - 2 ☐ Sometimes
    - 3 ☐ Usually
    - 4 ☐ Always

WHEN YOU LEFT THE HOSPITAL

15. After you left the hospital, did you go directly to your own home, to someone else's home, or to another health facility?

- [1] ☐ Own home
- [2] ☐ Someone else's home
- [3] ☐ Another health facility ➔ If Another, Go to Question 18

16. During this hospital stay, did doctors, nurses or other hospital staff talk with you about whether you would have the help you needed when you left the hospital?

- [1] ☐ Yes
- [2] ☐ No

17. During this hospital stay, did you get information in writing about what symptoms or health problems to look out for after you left the hospital?

- [1] ☐ Yes
- [2] ☐ No

OVERALL RATING OF HOSPITAL

Please answer the following questions about your stay at the hospital named on the cover letter. Do not include any other hospital stays in your answers.

18. Using any number from 0 to 10, where 0 is the worst hospital possible and 10 is the best hospital possible, what number would you use to rate this hospital during your stay?

- [0] ☐ 0 Worst hospital possible
- [1] ☐ 1
- [2] ☐ 2
- [3] ☐ 3
- [4] ☐ 4
- [5] ☐ 5
- [6] ☐ 6
- [7] ☐ 7
- [8] ☐ 8
- [9] ☐ 9
- [10] ☐ 10 Best hospital possible

19. Would you recommend this hospital to your friends and family?

- [1] ☐ Definitely no
- [2] ☐ Probably no
- [3] ☐ Probably yes
- [4] ☐ Definitely yes

UNDERSTANDING YOUR CARE WHEN YOU LEFT THE HOSPITAL

20. During this hospital stay, staff took my preferences and those of my family or caregiver into account in deciding what my health care needs would be when I left.

- [1] ☐ Strongly disagree
- [2] ☐ Disagree
- [3] ☐ Agree
- [4] ☐ Strongly agree

21. **When I left the hospital, I had a good understanding of the things I was responsible for in managing my health.**
- [1] ☐ Strongly disagree
- [2] ☐ Disagree
- [3] ☐ Agree
- [4] ☐ Strongly agree

22. **When I left the hospital, I clearly understood the purpose for taking each of my medications.**
- [1] ☐ Strongly disagree
- [2] ☐ Disagree
- [3] ☐ Agree
- [4] ☐ Strongly agree
- [5] ☐ I was not given any medication when I left the hospital

ABOUT YOU

There are only a few remaining items left.

23. **During this hospital stay, were you admitted to this hospital through the Emergency Room?**
- [1] ☐ Yes
- [2] ☐ No

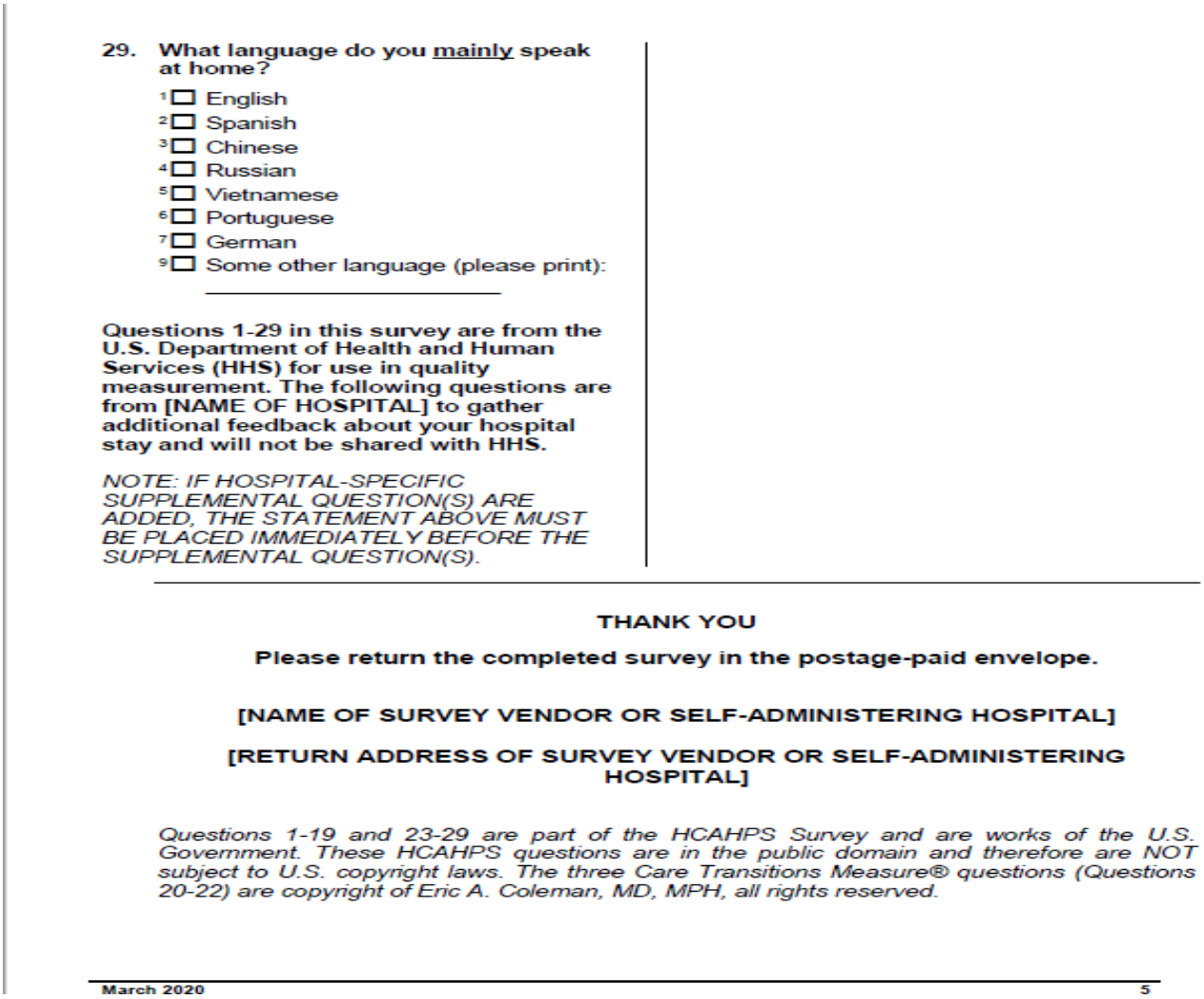
24. **In general, how would you rate your overall health?**
- [1] ☐ Excellent
- [2] ☐ Very good
- [3] ☐ Good
- [4] ☐ Fair
- [5] ☐ Poor

25. **In general, how would you rate your overall mental or emotional health?**
- [1] ☐ Excellent
- [2] ☐ Very good
- [3] ☐ Good
- [4] ☐ Fair
- [5] ☐ Poor

26. **What is the highest grade or level of school that you have completed?**
- [1] ☐ 8th grade or less
- [2] ☐ Some high school, but did not graduate
- [3] ☐ High school graduate or GED
- [4] ☐ Some college or 2-year degree
- [5] ☐ 4-year college graduate
- [6] ☐ More than 4-year college degree

27. **Are you of Spanish, Hispanic or Latino origin or descent?**
- [1] ☐ No, not Spanish/Hispanic/Latino
- [2] ☐ Yes, Puerto Rican
- [3] ☐ Yes, Mexican, Mexican American, Chicano
- [4] ☐ Yes, Cuban
- [5] ☐ Yes, other Spanish/Hispanic/Latino

28. **What is your race? Please choose one or more.**
- [1] ☐ White
- [2] ☐ Black or African American
- [3] ☐ Asian
- [4] ☐ Native Hawaiian or other Pacific Islander
- [5] ☐ American Indian or Alaska Native



29. **What language do you <u>mainly</u> speak at home?**

- [1] ☐ English
- [2] ☐ Spanish
- [3] ☐ Chinese
- [4] ☐ Russian
- [5] ☐ Vietnamese
- [6] ☐ Portuguese
- [7] ☐ German
- [9] ☐ Some other language (please print): _____

Questions 1-29 in this survey are from the U.S. Department of Health and Human Services (HHS) for use in quality measurement. The following questions are from [NAME OF HOSPITAL] to gather additional feedback about your hospital stay and will not be shared with HHS.

NOTE: IF HOSPITAL-SPECIFIC SUPPLEMENTAL QUESTION(S) ARE ADDED, THE STATEMENT ABOVE MUST BE PLACED IMMEDIATELY BEFORE THE SUPPLEMENTAL QUESTION(S).

THANK YOU

Please return the completed survey in the postage-paid envelope.

[NAME OF SURVEY VENDOR OR SELF-ADMINISTERING HOSPITAL]

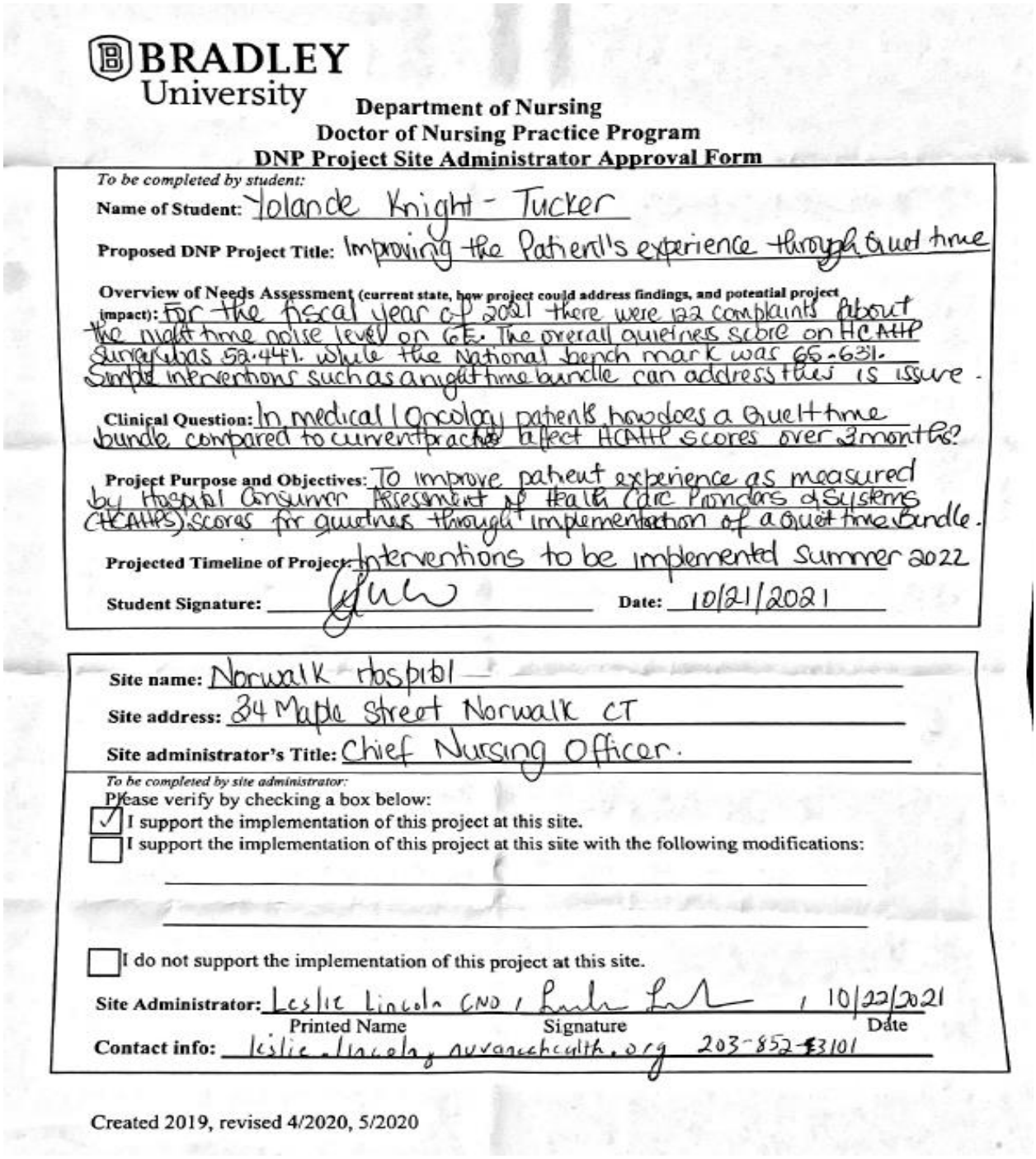
[RETURN ADDRESS OF SURVEY VENDOR OR SELF-ADMINISTERING HOSPITAL]

Questions 1-19 and 23-29 are part of the HCAHPS Survey and are works of the U.S. Government. These HCAHPS questions are in the public domain and therefore are NOT subject to U.S. copyright laws. The three Care Transitions Measure® questions (Questions 20-22) are copyright of Eric A. Coleman, MD, MPH, all rights reserved.

March 2020 **5**

Note: From *HCAHPS Survey*, by Centers for Medicare & Medicaid, 2020, https://www.hcahpsonline.org/globalassets/hcahps/quality-assurance/2022_survey-instruments_english_mail.pdf. In the public domain.

Appendix C: Site Approval



BRADLEY University

Department of Nursing
Doctor of Nursing Practice Program
DNP Project Site Administrator Approval Form

To be completed by student:

Name of Student: Yolande Knight - Tucker

Proposed DNP Project Title: Improving the Patient's experience through Quiet time

Overview of Needs Assessment (current state, how project could address findings, and potential project impact): For the fiscal year of 2021 there were 122 complaints about the night time noise level on 6E. The overall quietness score on HCAHPS surveys was 52.44% while the National bench mark was 65-69%. Simple interventions such as a night time bundle can address this issue.

Clinical Question: In medical / Oncology patients how does a Quiet time bundle compared to current practice affect HCAHPS scores over 3 months?

Project Purpose and Objectives: To improve patient experience as measured by Hospital Consumer Assessment of Health Care Providers & Systems (HCAHPS) scores for quietness through implementation of a quiet time Bundle.

Projected Timeline of Project: Interventions to be implemented Summer 2022

Student Signature: [signature] **Date:** 10/21/2021

Site name: Norwalk Hospital

Site address: 34 Maple Street Norwalk CT

Site administrator's Title: Chief Nursing Officer.

To be completed by site administrator:

Please verify by checking a box below:

☑ I support the implementation of this project at this site.

☐ I support the implementation of this project at this site with the following modifications:

_____

_____

☐ I do not support the implementation of this project at this site.

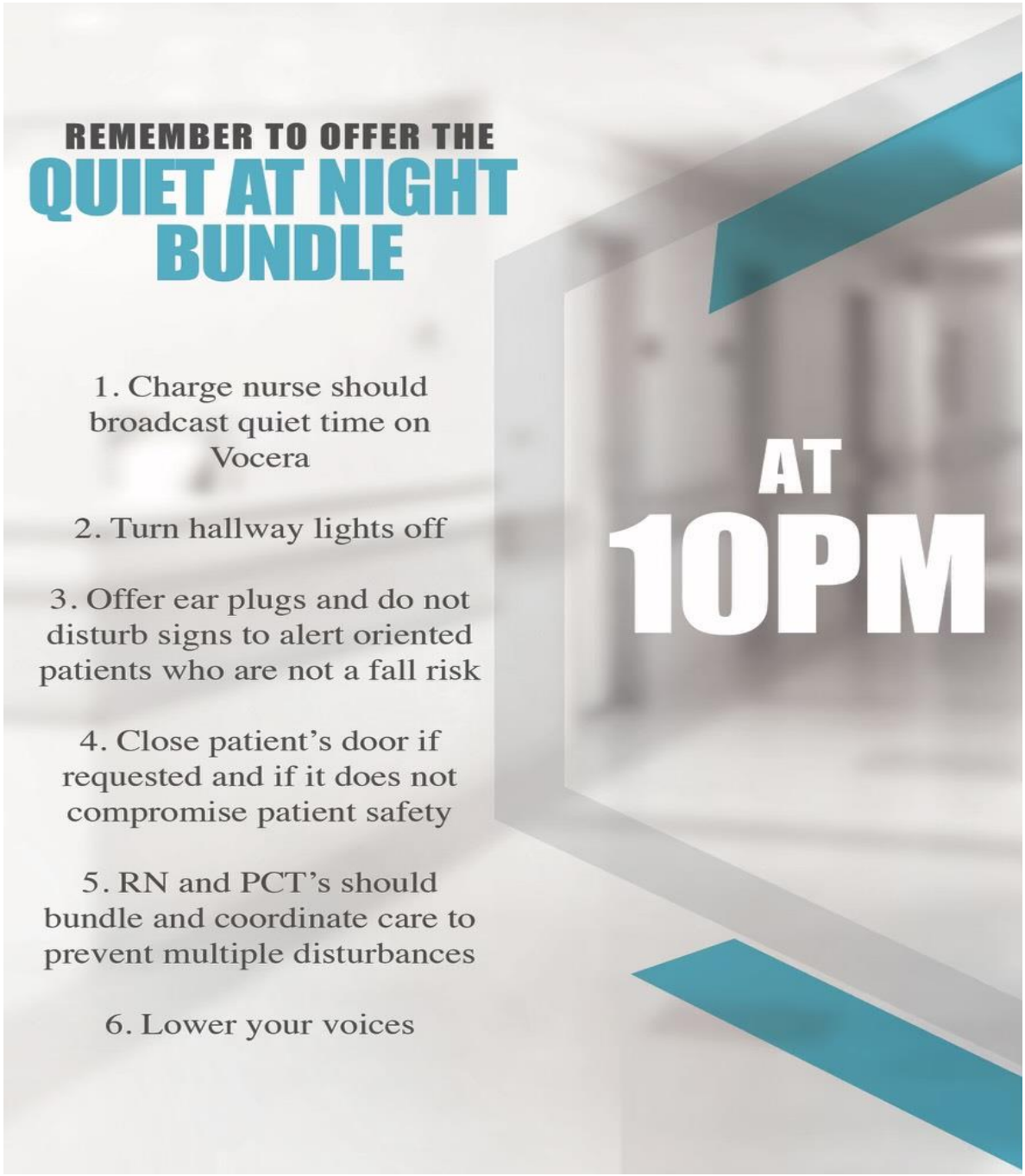
Site Administrator: Leslie Lincoln CNO / [signature] / 10/22/2021
Printed Name Signature Date

Contact info: leslie.lincoln@nuvancehealth.org 203-852-3101

Created 2019, revised 4/2020, 5/2020

Appendix D: Posters for Unit

Note. Created by author, March 30, 2022.



Note. Created by author, March 30, 2022.

Note. Created by author, March 30, 2022

Appendix E: Quiet-at-Night Care Bundle Education Sign-In Sheet

Instruction: Please sign your name, date, and position after reading the in-service education attached.

Name	Date	Position (RN/PCT)

Appendix F: Quiet-at-Night Care Bundle Staff Education

Hospitals can be very noisy, especially at night. 6East is no exception. There were 122 complaints in 2021 from patients regarding the noise levels and being disturbed frequently at night. 6East also had one of the lowest HCAHPS scores in the hospital (52%) on the question about the noise level in the unit. A poorly rested patient is often easily annoyed and dissatisfied. Not only does this affect the hospital's federal reimbursement and reputation, but a quiet environment is essential to the healing and restoration of our patients.

WHAT CAN YOU DO?

For 12 weeks between May 2022 and August 2022, we will be engaged in a Quiet-at-Night Care Bundle to try and improve our patients' satisfaction, ability to rest, and sleep. Your participation is required to help our unit improve our HCAHPS scores and decrease the number of complaints received.

QUIET-AT-NIGHT CARE BUNDLE

The following are included in the bundle:

1. At 10 pm, the charge nurse should broadcast on Vocera the beginning of quiet time, which is 10 pm to 4 am.
2. Hallway lights should be turned off, and the patient's door should be closed if requested and it does not compromise patient safety.
3. Staff will introduce the bundle to patients and offer earplugs to reduce noise levels, and a do not disturb sign on the door for those patients who are alert-oriented and are not a fall risk.
4. Care provided by RN and PCTs should be bundled and coordinated to prevent multiple disturbances in a short period. **For example**, while PCTs are doing 11 pm vital signs, the

5 Ps are offered: potty, personal belonging, changing positions, while RNs assess pain and peripheral IVs.

5. Staff is required to lower their voices when conversing at the nurse's station or in hallways.

PLEASE NOTE

1. You are still expected to do patient rounding, as safety comes first. This should be done in the most discreet way possible.
2. If patients have asked not to be disturbed, ensure they are aware of any necessary disturbance, such as ordered essential medication and the time it will be given.
3. Bed alarms and video monitors should be used for patients with fall risk.
4. We will assess patients' comments from leader rounding and HCAHPS scores and notify staff members of changes.

LET US MAKE 6EAST A QUIETER, FRIENDLER PLACE FOR OUR PATIENTS AS THEIR SATISFACTION IS ALSO OUR SATISFACTION!

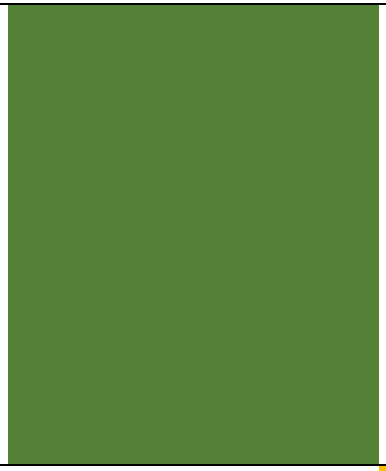
If you have any questions, please get in touch with Catherine Fitzpatrick at Catherine.fitzpatrick@nuvancehealth.org or Yolande Knight Tucker at Yolande.knighttucker@nuvancehealth.org

Appendix G: Statement to Introduce the Bundle to Patients

Hello, I am **NAME**, your nurse/patient care technician for the night. To help you rest and sleep, we have a nighttime bundle to offer our patients. The items included are earplugs, a do not disturb sign on your door, closing your door, and shutting the lights off. As staff members, we will turn the hallway lights off between 10 pm and 4 am, keep our voices down, and try to coordinate your care if we disturb you between those hours. Are you interested in any of the items from this bundle tonight?

Appendix H: Project Timeline

Stages	Tasks	January–April 2022	May 2022	June 2022	July 2022	August–November 2022	December 2022
Planning	-Refining topic -Meeting with mentor and faculty -Establish aim and measures -Engage in interprofessional collaboration						
Research	-Perform organizational assessment						
Design	-Meet with manager to create quiet at night bundle based on evidence -Identify resources and conduct cost analysis.						
Approval	University and site approval						

Implementation	-Staff education -Leader rounding training -Implement quiet at night bundle (group activities, earplugs, overhead notification, do not disturb sign) -Conduct daily leader rounding - Biweekly analysis of trends -Monthly analysis of HCAHPS scores -Data collection	
Data analysis	-Sort data -Report outcomes -Implement a sustainability plan	
Presentation	-Present findings	

Appendix I: Bradley University Institutional Review Board Approval

BRADLEY University

DATE: 11 JULY 2022

TO: Yolande Knight-Tucker, Shana Freehill
FROM: Bradley University Committee on the Use of Human Subjects in Research
STUDY TITLE: Shhh! Improving Patient Satisfaction Scores with a Quiet at Night Care Bundle
CUHSR #: 069-22-Q
SUBMISSION TYPE: Initial Review
ACTION: Approved
APPROVAL DATE: 11 July 2022
REVIEW TYPE: Quality Assurance

Thank you for the opportunity to review the above referenced proposal. The Bradley University Committee on the Use of Human Subject in Research has determined the proposal to be NOT HUMAN SUBJECTS RESEACH thus exempt from IRB review according to federal regulations.
The study has been found to be not human subject research pursuant to 45 CFR 46.102(i), not meeting the federal definition of research (not contributing to generalizable knowledge). Please note that it is unlawful to refer to your study as research.

Your study does meet general ethical requirements for human subject studies as follows:

1. Ethics training of project personal is documented.
2. The project involves no more than minimal risk and does not involve vulnerable population.
3. There is a consent process that:
    - Discloses the procedures
    - Discloses that participation is voluntary
    - Allows participants to withdraw
    - Discloses the name and contact information of the investigator
    - Provides a statement of agreement
4. Adequate provisions are made for the maintenance of privacy and protection of data.
5. Your study is exempt for HIPAA regulations in that the covered entity will de-identify the health information used in your study pursuant to 45 CFR 164.502 (d).
6. The project includes a patient care policy change within the institution that the institution has approved. Any consequence of the policy changes is the responsibility of the institution and is not within the boundary of this approval.

Please submit a final status report when the study is completed. A form can be found on our website at https://www.bradley.edu/academic/cio/osp/studies/cuhsr/forms/. Please retain study records for three years from the conclusion of your study. Be aware that some professional standards may require the retention of records for longer than three years. If this study is regulated by the HIPAA privacy rule, retain the research records for at least 6 years.
Be aware that any future changes to the protocol must first be approved by the Committee on the Use of Human Subjects in Research (CUHSR) prior to implementation and that substantial changes may result in the need for further review. These changes include the addition of study personnel. Please submit a Request for Minor Modification of a Current Protocol form found at the CUHSR website at https://www.bradley.edu/academic/cio/osp/studies/cuhsr/forms/ should a need for a change arise. A list of the types of modifications can be found on this form.
While no untoward effects are anticipated, should they arise, please report any untoward effects to CUHSR immediately.
This email will serve as your written notice that the study is approved unless a more formal letter is needed. You can request a formal letter from the CUHSR secretary in the Office of Sponsored Programs.

Karin B. Smith

Karin Smith DNP, RN, NEA-BC, CENP, CCRN-K
CUHSR Associate Chair

Committee on the Use of Human Subjects in Research – 100 Kauffman
1501 W Bradley Ave.
Peoria, IL 61625

Appendix J: Site Institutional Review Board Approval

BRANY

To: Yolande Knight Tucker, MPH, BSN

From: Laura Donohue, CIP, IRB Supervisor

CC: Research Coordinator

Date: 06/21/2022

Event ID: #198238

Re: Investigator Initiated Protocol # 22-1701 / BRANY File # 22-15-318-337

BRANY IRB has considered:

- **Investigator Initiated Protocol 22-1701**

From the information provided, BRANY IRB has determined the proposed activity does not constitute research involving human subjects requiring consideration under 45 CFR 46, because while the activity involves human participants (i.e. the data the investigator plans to collect is about living individuals, and the investigator is obtaining identifiable private information), the activity is **not** a systematic investigation, including research development, testing, and evaluation, designed to develop or contribute to generalizable knowledge. Rather, this is an internal QI project that aims to implement a known noise reducing protocol on a particular unit of the hospital.

Additionally, the proposed activity does not involve an FDA-regulated test article, does not involve an FDA-regulated medical device, and does not appear to be otherwise subject to FDA regulation.

Per the IRB authorization agreement between your organization and BRANY IRB, BRANY IRB is authorized to make a determination about whether an activity is research involving human subjects requiring consideration under 45 CFR 46 or FDA regulations. BRANY IRB policy and regulatory guidance suggest that the research investigator should not make the determination that a study may be performed without approval of the IRB.

This determination requires that all procedures and activities are performed in accordance with relevant state law.

If you have any questions or require any additional information, please contact me at 516-622-2049 or ldonohue@brany.com. Thank you.

BRANY | 1981 Marcus Avenue, Suite 210, Lake Success, NY 11042 | 516.470.6900 T | 516-470-6903 F | www.brany.com

Appendix K: Statement for Patient Voluntary Participation in Leader Rounding Survey

My name is Yolande Knight-Tucker/Catherine Fitzpatrick, and I would like to invite you to participate in a 3-minute anonymous, voluntary verbal survey used for quality improvement purposes. It may help improve the quality of care and patient satisfaction in the hospital. There is minimal to no risk in participating, and you can choose to stop at any time. Your response will remain anonymous, and the feedback we receive will be used for quality improvement purposes.

Note. Created by author, January 24, 2022.

Appendix L: Statement of Participation for Nurses and Patient Care Technicians

ATTENTION NURSES AND PCTS

You are invited to participate in a quality improvement project. The purpose of this project is to **improve our patient satisfaction by implementing a quiet at night care bundle to decrease noise levels and disturbance at night**. Management will be implementing this care bundle, and your mandatory attendance at an education huddle is required at change of shift as well as implementing the components of the bundle at 10 pm nightly for 12 weeks. **During the 12 weeks, randomly selected patients will be asked about their experience regarding noise levels at night and their ability to rest in an anonymous survey.** Your participation in the project and the data collected will remain confidential**. There is no link between your name and the project record.**

Although taking part in the project is mandated, the outcome of the analysis will have **no bearing on our employment or performance evaluation**. After the project, the data will be completely de-identified and could be used for future projects.

Questions about this project may be directed to **Catherine Fitzpatrick** (Unit Manager) at (Catherine.fitzpatrick@nuvancehealth.org/(203) 852-2000 or **Yolande Knight Tucker (**Student Investigator**)** at Yolande.knighttucker@nuvancehealth.org. The project advisor: Dr. Freehill at sfreehill@bradley.edu

THANK YOU FOR YOUR PARTICIPATION

Note. Created by author, June 30, 2022

Appendix M: Cost-Benefit Analysis

		Cost Benefit Analysis			
Hospital Measure			**Annual HCAHPS Reimbursement for Quiet Question**		
Quiet at night Care Bundle			$14,390		
		Improvement Cost			
Personnel Expenses		**Number of Staff**	**Average Hourly Rate**	**Cost educational (based on hourly pay)**	**Education Huddle**
Registered Nurses		26	48.4	48.4 x26 = 1258.4	$0
Patient Care Technician		12	20.6	$20.6 X 12= $247.2	$0
Unit Secretary		3	20	$20 x3 =$60	$0
			Total Personnel Expenses	$1,565.60	$0
Non- Personnel Expenses		**Number of Items**	**Cost**	**Annual Cost**	
Ear Plugs		26 patients X 70 days=1820	$0.11/pair x 1820=$200.2	$2.86/day x 365=1043.9	
Laminating machine		1	$50	$50	
Refreshments for huddles (Donuts and Coffee)		3	$150 (DONATION)	$300	
Signage		40	$40	$80	
Education Huddle			$0		
		PROJECT COST	**$440.20**		
			TOTAL ANNUAL EXPENSES	**$1,474**	
			NET BENEFIT (Annual Reimbursement-Total Annual Expenses)	**$12,916**	

Note. Created by author in February 2022 based on an internal financial computation of HCAHPS metrics and annual reimbursement.