

IMPROVING PATIENT SATISFACTION BY REDUCING SLEEP DISTURBANCES

Improving Sleep Quality and Patient Satisfaction by Reducing Nighttime Disturbances in Hospitalized Patients: A DNP Project

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Abstract

Background and Significance: Patient satisfaction and outcomes are affected by the quality of sleep in the hospital. Noise, light, routine assessment, diagnostic and laboratory tests, and room transfers are among the factors causing reduced or disrupted sleep in the hospital. This project prioritizes the reduction of sleep disturbances for hospitalized medical-surgical patients to increase patient satisfaction scores.

Purpose: This project aims to improve patient satisfaction scores by using a sleep protocol designating quiet hours at night to reduce sleep disturbances in medical-surgical patients.

Methods: This project was implemented in a midwestern acute care medical-surgical unit. All medical-surgical patients were included for sleep protocol use.

Evaluation: Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) and inpatient patient satisfaction survey will measure pre- and post-sleep protocol patient satisfaction scores.

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Maslow's hierarchy of needs explains that one's fundamental physiologic needs must be met before moving on to the next level in the hierarchy pyramid (Maslow, 1943). This is important when organizing the healthcare environment and promoting healing within the hospital setting. A patient's physiological needs, including sleep, must be met to achieve health (Maslow, 1943). The typical hospital environment is poorly conducive to quality sleep with environmental and care disruptions, including vital signs and phlebotomy (Mason et al., 2021). This evidence-based project aims to design and implement a sleep protocol that will decrease the number of sleep disruptions for patients who can safely be left to sleep through the night. Higher quality and appropriate quantity of sleep can help decrease delirium and other physiological factors caused by poor sleep, improving patient outcomes, and increasing patient satisfaction in the hospital setting (Tan et al., 2019; Williams, 2022).

Background and Significance

Environmental factors such as nursing care, treatments, diagnostic testing, lighting, and noises created by alarms, equipment, and everyday work functions create an atmosphere where sleep disturbances can be abundant (Ritmala-Castren et al., 2023). Coupled with the numerous symptoms of illness and the further stress and concern that illness can precipitate, quality sleep in the hospital has the potential to be affected significantly (Ritmala-Castren et al., 2023). Burger et al. (2022) conducted a meta-analysis on sleep in hospitalized patients. This meta-analysis showed an average of 5.6 hours of total sleep time per night for adult hospitalized patients (Burger et al., 2022). The National Sleep Foundation (NSF) guidelines state

that a healthy amount of sleep for adults is between seven and nine hours a night and straying too far from the recommended amount of sleep leads to health issues (National Sleep Foundation, 2020). The meta-analysis also found sleep efficiency to be profoundly affected, where patients were awake 105 minutes throughout the night after initially going to sleep, with an average of 41 awakenings per night (Burger et al., 2022).

This fragmented and disrupted sleep pattern can lead to increased severity of illness, worsening encephalopathy, and the development of delirium (Auckley, 2022). Beyond these cognitive function impairments, evidence also supports that poor sleep has the potential for poorer patient outcomes, impaired respiratory and immune function, and increased pain and anxiety (Auckley, 2020). The impaired neurocognitive function resulting from the short-term poor sleep experienced in the hospital can lead to decreased alertness, memory loss, and impaired decision-making, all of which increase a patient's fall risk (Burger et al., 2022).

In addition to the damaging pathophysiological effects sleep loss causes, patient experience is also negatively affected (Astin et al., 2020). Patient experience has become a driving factor for quality improvement and performance in healthcare (Barden et al., 2021). Viewing patient experience as a priority focus and recognizing the importance of sleep, the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey directly asks responding patients how often it was quiet at night in the area surrounding their hospital room (Barden et al., 2021). In a 420-bed Midwest hospital, the most recent HCAHPS results revealed that only 53% of patients always experienced a quiet nighttime environment (Medicare.gov, 2023). A score of 53% is lower than the state average of 58% where this hospital resides and lower than the national average of 62% (Medicare.gov, 2023). When data was disseminated even further, a

score of 16.67% was reviewed for a single medical-surgical unit within the hospital during October 2023. This data positions this unit in the 1st percentile of national ranking (Hospital Care Experience, personal communication, November 15, 2023).

Knowing sleep is a primary human need to achieve health, a sleep protocol with tailored interventions designed to decrease patient sleep disruptions is an essential consideration to help improve the circumstances affecting the patient experience reflected in this HCAHPS score (Barden et al., 2021; Williams, 2022). Implementing these interventions will not only influence the evident and tangible increase in patient satisfaction and HCAHPS ratings but may improve patient health outcomes by meeting a basic physiologic need. To provide safe, high-quality care and improve overall patient outcomes, healthcare professionals are responsible for providing a healing environment where appropriate interventions are implemented to promote quality sleep (Ritmala-Castren et al., 2023).

A study performed in a small 55-bed hospital showed increased patient satisfaction after sleep protocol initiation (Williams, 2022). Within this hospital, the medical-surgical unit, comprised of 34 beds, saw patient satisfaction scores increase from 71% at the start of the year-long program to 100% by the end. In addition, opioid pain medication and sleep medication administration decreased, there was a 75% reduction in falls, and the medical-surgical length of stay decreased from 1.1 to 0.94 average bed days. The decrease in falls at this small hospital equated to a \$57,000 cost savings with an additional \$7,000 in savings from the reduced length of stay (Williams, 2022).

Two of this Midwest hospital's primary strategic plan themes are the highest-performing networks, differentiated care, and experience every time (Henry Ford Health System, n.d.c).

The organization plans to achieve these themes by providing a truly transformed patient experience through system redesign, growing its network through Medicare Advantage expansion and value-based arrangements, and focusing on quality, service, and affordable care as an essential contribution to overall community health improvement (Henry Ford Health System, n.d.c). Implementing a sleep protocol aligns with this organization's strategic plan to focus on patient experience, deliver high-quality health care, improve patient outcomes, and achieve value-based care.

Organizational Assessment

This evidence-based project (EBP) occurs at a 420-bed Midwest hospital, one of five acute care hospitals (Henry Ford Health System, n.d.a). The mission of this organization is to "improve people's lives through excellence in science and the art of health care and healing" (Henry Ford Health System, n.d.b). Their vision is to "be the trusted partner in health, leading the nation in superior care and value – one person at a time" (Henry Ford Health System, n.d.b). The organization's values are compassion, innovation, respect, and results (Henry Ford Health System, n.d.b). To this organization, compassion is providing a heartfelt experience to and amongst every patient and member (Henry Ford Health System, n.d.b). Innovation continuously pursues what is possible through research, education, and clinical and operational excellence (Henry Ford Health System, n.d.b). Respect is honoring the commitment to the communities they serve by acting with integrity, courage, and inclusion (Henry Ford Health System, n.d.b). Moreover, their vision of results reliably delivers on their promise to be leaders in safety and affordability, ensuring the health of their communities (Henry Ford Health System, n.d.b).

The organization's mission, vision, and values support the fact that they are one of the nation's leading health systems in research and education – and strive to maintain and build upon that going forward (Henry Ford Health System, n.d.b). A sleep protocol can positively impact patient outcomes, overall patient health, patient satisfaction, and patient safety. Key stakeholders include the nursing administrator, inpatient department directors, inpatient unit nurse managers, unit-based clinical nurse specialists (CNS), the clinical unit leader (CUL), bedside nurses, certified nursing assistants, unit clerks, phlebotomists, laboratory technicians, respiratory therapists, transport, and patients. In an open forum discussion among nursing colleagues, interest in this initiative was strongly expressed, and the value it presents was recognized and shared by everyone involved, including the nursing administration. Moving forward, there will be a continued focus on buy-in and participation from the various departments and key stakeholders who will further help guide this project to success.

Strengths, Weaknesses, Opportunities, and Threats

A strength-weakness-opportunity-threat (SWOT) analysis was performed to identify and analyze the internal strengths and weaknesses of the hospital, as well as the external opportunities and threats the hospital may face, all of which will impact the implementation of a sleep protocol for patients on the medical-surgical units (see Appendix A). The SWOT analysis identified the strength of this Magnet hospital, which employs highly skilled nurses who provide best practice, evidence-based care to ensure the best patient outcomes and superior patient safety. As previously mentioned, another strength of this hospital is that it is one of the nation's leading health systems in research and education (National Institute of Standards and Technology, 2019). This research and teaching hospital leads the way in best practice protocols

and evidence-based care (Henry Ford Health System, n.d.b). The sleep protocol initiative is supported by aligning their emphasis on patient-centered care with improved patient outcomes, satisfaction, safety, and cost reduction. Lastly, the hospital's ongoing shift toward value-based care is reflected in the implementation of this protocol, which prioritizes the patient's most basic physiologic needs while maintaining patient safety.

The weaknesses identified during the SWOT analysis were the hospital's HCAHPS score for always quiet at night of 53%, resistance to change in policies, staff feeling unengaged in decision-making for quality improvement, and older equipment, which produces more noise. The HCAHPS score is currently a weakness but provides an opportunity for improvement. When the staff feels unengaged in the decision-making process for quality improvement efforts, it impacts the amount of participation in change efforts, thus further impacting the challenge that change presents. Lastly, older equipment and facilities carry the burden of more noise production. For example, computers on wheels with broken or missing pieces cause extra rattling and louder movement, older hospital beds can create more noise as the mechanics have been used tirelessly, and some lighting in rooms is no longer functional, leading to the reliance on brighter lights that disrupt the environment during nighttime hours.

The impacts of external forces are more positive than negative. Opportunities are present where the full clinical integration of value-based care can improve patient care, outcomes, satisfaction, and healthcare reimbursement. According to van Engen et al. (2022), value-based healthcare aims to do just that: improve patient care outcomes, increase patient satisfaction, and reduce cost. Creating a new, innovative protocol can also improve patient experience, satisfaction, and outcomes while reducing healthcare costs. Williams et al. (2022)

demonstrate these results in their study of initiating a sleep protocol for medical-surgical inpatients. The threats identified were that many area hospitals outperform this facility in the always quiet at night survey question (Medicare.gov, 2023). Of the 14 acute care hospitals within a 50-mile radius, 10 have a higher HCAHPS score for the survey question of always quiet at night (Medicare.gov, 2023). The building of new facilities and advancements in technology at surrounding hospitals may put some of our competitors ahead of us when considering the noise level created by normal work functions.

Overall, this analysis provides the facility with more positives than negatives. The strengths and opportunities give this evidence-based, quality improvement sleep protocol project a solid foundation. The weaknesses and threats offer more areas of opportunity and growth.

Gap Analysis

Poor sleep in the hospital can be related to environmental, process, material, people, and equipment factors determined by the Ishikawa diagram used in the gap analysis for this project (see Appendix B). Ideally, changes should be made to minimize any unnecessary sleep disruptions for medical-surgical patients who are stable enough to be left to sleep through the night. To achieve this, quiet hours between 2300 and 0500 will set a “do not disturb” timeframe to avoid any assessments, phlebotomy, vital sign measurement, or diagnostic testing. Lights and noises in the unit are environmental factors often described by patients as disruptive (Mason et al., 2021). Process factors contributing to poor sleep include nursing assessments that need to be completed and treatments that patients require, like vital signs and phlebotomy (Mason et al., 2021). Material components contributing to the problem are

intravenous lines and sequential compression device tubing that restrict bed movement and uncomfortable mattresses. Factors related to people who become disruptive at night are the activities and voices of employees and the behaviors of other patients. Equipment contributing to poor sleeping conditions includes alarms from beds, chairs, call lights, vital signs equipment, wheels on computers, vital sign carts, and portable X-ray machines. There is a primary gap between the perceived importance of sleep and the implementation of a sleep protocol in the hospital's medical-surgical area.

Quality Improvement Model

The Plan-Do-Study-Act (PDSA) model is a quality improvement-based model used to develop and guide this project. Because this project is for quality improvement surrounding this Midwest hospital's HCAHPS scores, PDSA is a fitting model for project management. The cyclical nature of the PDSA allows for a continuous quality improvement process. Repeating the steps to make necessary changes after a complete cycle leads to continued implementation and growth of the quality improvement process (Deming Institute, n.d.).

There are three questions to answer when applying the PDSA model. First, "What are we trying to accomplish?" Second, "How will we know that a change is an improvement?" Moreover, third, "What changes can we make that will result in an improvement?" (Centers for Medicare & Medicaid Services, n.d.) In the case of this project, we are trying to improve patient satisfaction regarding noise levels at night in the hospital. We will know our change has improved by an increase in HCAHPS scores. Lastly, we will make changes based on the root cause analysis performed by our hospital and then construct interventions from evidence-based practice supported by the review of current literature. This will contribute to reduced noise

levels and sleep interruption on the unit at night, particularly by implementing a protocol to reduce noise, lighting, and the number of nighttime interventions and monitoring when it can be safely done.

During the first stage, “Plan,” the implementation plan is developed. As discussed above, the goal of the project is first identified. After identifying the goal, a plan is formed about the result of the project’s implementation, stakeholders are identified, a timeframe is set, and data collection methods are identified. In the second step, “Do,” the implementation is carried out on a small scale while all observations are documented, and data is collected. In the third step, “Study,” the collected data is analyzed and used to determine if the expected outcome was achieved before formulating any lessons learned. Lastly, during the “Act,” based on what was learned from the small-scale implementation, changes are adapted, adopted, or abandoned, and the process is repeated with the identified needs for additional change (Centers for Medicare & Medicaid Services, n.d.).

Problem Statement and Clinical Question

This hospital performed poorly in the HCAHPS category of patients who always experienced a quiet nighttime environment. Literature shows that poor sleep quality leads to decreased patient satisfaction among the additional poorer patient outcomes and increased length of stay (Tan et al., 2019; Williams, 2022). The primary clinical question explored: In patients hospitalized in medical-surgical units, how does a sleep protocol affect patient satisfaction compared to no sleep protocol?

Literature Review Search Strategy

Using the Cumulative Index to Nursing and Allied Health Literature (CINAHL) and PubMed databases, a thorough literature search was conducted on May 20, 2023, combining the fundamental concepts necessary to answer the clinical question above. The keywords used for both databases were hospital AND noise OR "quiet time" OR "quiet at night" AND sleep. A total of 266 articles were identified in CINAHL and 878 in PubMed using search criteria. After filtering results to those published in English within the previous five years, 2018 through 2023, 77 articles in CINAHL and 387 in PubMed were revealed, for a total of 464 articles. Articles in each database were reviewed based on title and abstract for their relevance to the topic of this project, leaving 25 articles in CINAHL and 29 in PubMed. After duplicates were removed, 28 articles remained for full review, and 12 were selected for inclusion. The inclusion criteria included adult patients exposed to sleep-promoting or disrupting interventions in the inpatient hospital setting. Exclusion criteria included healthcare workers, intensive care units, emergency departments, post-anesthesia care units, rehabilitation facilities, pediatric units, and disease-specific sleep disorders associated with hemodialysis, psychiatry, cancer, organ transplants, cardiothoracic surgery, and gastrointestinal or respiratory ailments.

Literature Synthesis

Articles were analyzed by design, purpose, sample, setting, measurement, instruments used, level of evidence and quality, and relevance to the problem (Appendix C) and rated using the Johns Hopkins Nursing Evidence-Based Practice Evidence Level and Quality Guide (The Johns Hopkins Hospital, n.d.). Articles were further organized by interventions (Appendix D). From the literature, a determination of best practices was collected to determine which

interventions, “quiet time” hours, and measurement tools would be the most effective implementation.

Supported Interventions

Various interventions to decrease sleep interruptions in the hospital were identified throughout the literature. The implementation of ear plugs and eye masks increases sleep quality by mitigating both noise and light (Barden et al., 2021; Gode et al., 2020; Graham et al., 2020; Hillman et al., 2023; Shah & Krishnan, 2019; & Sweity et al., 2019). Hedges et al. (2018) did not single out the discussion surrounding using ear plugs and eye masks but did include these devices as part of a patient preference sleep menu. Additional options beyond eye masks and ear plugs included extra pillows, warm blankets, headphones, warm decaffeinated beverages, and soft music. In line with the sleep menu, Gode et al. (2020) also implemented a patient sleep menu that included the same options as above, in addition to aromatherapy, water, massage, room temperature and/or lighting adjustment, fans, blankets, open/closed shades, and door, sound machine or white noise phone app, and relaxing music.

Many of the interventions identified consisted of adjusting the timing of specific treatments and assessments. Nine out of twelve of the articles selected for inclusion integrated adjustment of vital sign measurement as an important intervention (Gode et al., 2020; Graham et al., 2020; Hillman, 2021; Hillman et al., 2023; Holleck et al., 2023; Shah & Krishnan, 2019; Shapiro, 2023; Tan et al., 2019; & William, 2022). Williams (2020) notes the necessity of using a tool to determine appropriate patients for vital sign time adjustment and collaboration with physicians to input correct orders supporting the change to usual vital sign collection.

Keeping in line with adjusting the timing of delivered care, routine morning phlebotomy was also discussed. Out of the twelve articles included, seven agreed that early morning blood draws are a known or potential sleep disruptor (Gode et al., 2020; Graham et al., 2020; Hillman, 2021; Hillman et al., 2023; Holleck et al., 2023; Shah & Krishnan, 2019; & Shapiro, 2023). As Graham et al. (2020) write, including phlebotomy staff is important to the planning stages of the process, as the implementation of a project or protocol of this kind affects the workflow of all laboratory services.

As far as an intervention regarding the use of medications, three themes were identified. The first was that medication timing be adjusted to allow patients uninterrupted sleep through the nighttime hours (Gode et al., 2020; Graham et al., 2020; Holleck et al., 2023; Shapiro, 2023; Tan et al., 2019). The second was that sleep aid medications be used in the short term if needed (Hillman, 2021). And the third was that medications should be reviewed for their potential effect on sleep quality (Hillman et al., 2023). Pharmacy stakeholders are important to this intervention as their assistance would be imperative to the safe retiming of medications and the expert knowledge of the safe use of sleep-aiding medications (Gode et al., 2020; Graham et al., 2020; Holleck et al., 2023). The study by Williams (2022) found a statistically significant reduction in the administration of the opioid hydrocodone ($p = .02$), along with reductions in several other opioids, including hydromorphone ($p = .25$), morphine ($p = .118$), oxycodone ($p = .054$), and oxycodone/acetaminophen ($p = .266$). The same study also found a per-month reduction from 35 doses pre-implementation to 15 doses post-implementation of the sleep medications Lunesta (eszopiclone), Ambien (zolpidem), and Remeron (mirtazapine).

Eleven out of twelve articles recognized the reduction of noise in the hospital as a pivotal impact on sleep quality (Barden et al., 2021; Gode et al., 2020; Graham et al., 2020; Hedges et al., 2018; Hillman, 2021; Hillman et al., 2023; Holleck et al., 2023; Shah & Krishnan, 2019; Shapiro, 2023; Tan et al., 2019; William, 2022). Many recognized noises as multifactorial, requiring focus on more than just a straightforward solution. For example, Hillman (2021) and Gode et al. (2020) note noise created by patients. Hillman (2021) lists hospital staff and medical equipment as noise generators. Shah and Krishnan (2019) and Shapiro (2023) agree that noise equipment creates and notes overhead announcements and entertainment devices as culprits. Williams (2020) focused on mitigating noise generated by talking, laughing, and closing doors. A significant focus of Graham et al. (2020) study was to reduce the noise level created by night shift staff voices. This study used a Yacker Tracker to increase awareness of decibel levels and decrease overall noise. Patients in the Hedges et al. (2018) study identified patient beds, squeaky equipment, and talking/voices as the three main contributors to noise. Tan et al. (2019) state that two studies found that 27-43% of patients identified noise as a significant cause of poor sleep. Furthermore, noise level measurement revealed a noise in patient rooms between 35 and 55 decibels between 11 p.m. and 7 a.m. According to recommendations of the World Health Organization, to avoid sleep disturbance, the sound pressure level should not exceed 30 dB (Tan et al., 2019).

Eight articles found reducing light to be a critical factor in improving sleep quality (Gode et al., 2020; Graham et al., 2020; Hillman, 2021; Hillman et al., 2023; Shah & Krishnan, 2019; Shapiro, 2023; Tan et al., 2019; & William, 2022). While all eight articles explain bright lighting at night as a common complaint and cause of sleep interruption, Hillman et al. (2023), Shah &

Krishnan (2019), and Tan et al. (2019) each take a further look at how lighting can cause sleep disturbances in the hospital. Low-level lighting during the morning hours causes patients' circadian rhythm alterations, leading to potential later awakenings. In the same sense, continued low lighting throughout the day further disrupts patients' ability to normally regulate circadian rhythm, contributing to an increased difficulty sleeping during nighttime hours when bright artificial lights are in use within patient rooms and hallways (Hillman et al., 2023; Shah & Krishnan, 2019; & Tan et al., 2019).

Finally, two articles made the critical recognition of minimizing transfers at night. Better timing of non-urgent patient room transfers is one of the modifiable environmental factors that can help reduce nighttime sleep interruption (Hillman, 2021 & Hillman et al., 2023). As mentioned, not all nighttime transfers are avoidable. However, when a transfer will likely be needed to accommodate admissions, better preparation and conscious decision-making to transfer a patient before the middle of the night could help reduce sleep interruption, according to Hillman (2021) and Hillman et al. (2023).

Time Frame for Protocol

When formulating interventions to promote sleep quality in the hospital, an important aspect to consider is the dedication to quiet times. Four of the twelve articles included for synthesis set dedicated quiet hours (Barden et al., 2021; Gode et al., 2020; Graham et al., 2020; & Holleck et al., 2023). The time set by Barden et al. (2021) was 11 p.m.-5 a.m., in Gode et al. (2020) was 1 a.m.-6 a.m., in Graham et al. (2020) was 11 p.m.-5 a.m. in one of three hospitals, and 12 a.m.-4 a.m. in the other two, and in Holleck et al. (2023) was 11 p.m.-6 a.m. While Hillman et al. (2023) did not set designated quiet times, the focus was on minimizing

interventions, aligning lighting and noise levels, and designating sleep times with the biological clock to preserve patients' circadian rhythm better and positively impact sleep quality. Hillman (2020) also did not set quiet times but also focused on the recommendation that most adults obtain seven to nine hours of quality sleep each night, determined by the circadian rhythm and internal biological clock.

Measurement Tools

A variety of measurement tools were used across the inclusion articles. For evaluation purposes, HCAHPS scores and patient surveys were used. Four articles used HCAHPS as a measurement method (Barden et al., 2021; Gode et al., 2020; Graham et al., 2020; Hedges et al., 2018). HCAHPS scores were obtained before, during, and after implementation to measure success. Each study demonstrated improvement in HCAHPS scores. Moreover, Hillman et al. (2023) used the St. Mary's Hospital Sleep Questionnaire, Holleck et al. (2023) used a unique pre- and post-patient survey, Sweity et al. (2019) used the SureSleep Questionnaire post-intervention, and Williams (2022) used a 5-point Likert scale patient survey.

Three articles used the Early Warning System (EWS) or Modified Early Warning System (MEWS) to determine appropriate patients for sleep quality interventions (Holleck et al., 2023; Tan et al., 2019; & William, 2022). Williams (2020) was the only article to quantify EWS scores appropriate for patient inclusion. According to the critical appraisal of the evidence performed by Williams (2020), vital sign measurements performed on patients with an EWS score of less than or equal to one had little to no effect on patient outcomes, supporting the omission of vital sign measurement during the nighttime sleeping hours (i.e., 1200, 0200, 0400).

Design and Methodology

This EBP and quality improvement project will compare the implementation of hospitalized medical-surgical patient satisfaction pre- and post-sleep protocol through a small pilot project. The project will follow the PDSA model and incorporate Kotter's eight-step model (Appendix E) as a guide for change implementation. This project will implement an evidence-based sleep protocol focused on collaboration between patient care departments to promote clustered patient care.

Setting

The unit consists of four wings. One wing stretches north, one east, one south, and one west. The unit houses 63 single-bed patient rooms. Each wing has a pantry with a medication room behind it and a staff bathroom attached to the medication room. There are two clean supply rooms for the floor, one on the north wing and one on the south wing. A short hallway next to each clean supply room leads to the unit breakrooms. There are two nurse's stations on the floor, one on the elbow between the north and west wings and one on the elbow between the south and east wings. Twelve patient rooms are directly across from the nurse's station, three on each elbow and three on the east and west wings.

Patient Selection

The hospital unit where this pilot takes place specializes in the care of renal and oncology medical-surgical patients. Despite the specialization, some general medical diagnosis overflow does happen. All patients in this unit will be included in the pilot EBP QI project.

Stakeholders

The International Organization for Standardization (ISO) defines key stakeholders as anyone interested in an organization's decisions or activities (American Society for Quality, n.d.). For this EBP QI project, the key stakeholders are:

- Nursing administrator – help facilitate key stakeholder communication with project lead, offer guidance through the project by facility policy and protocol
- Inpatient department director - offer guidance through project by facility policy and protocol, assist with buy-in at the unit level
- Inpatient unit nurse manager – assist with buy-in at the unit level, identify facilitators and barriers to plan, help formulate and facilitate staff education, patient rounding to discuss project success or barriers with patients
- Unit-based clinical nurse specialists (CNS) - identify facilitators and barriers to plan, represent, and support bedside nurse perspective; assist with buy-in at the unit level; help formulate and facilitate staff education, collect data, analyze data, disseminate data
- Clinical unit leader (CUL) - help lead and enforce project plan, communicate project plan and importance with patients, facilitate project plan, share, and collect patient survey
- Bedside nurses – identify facilitators and barriers to plan, communicate project plan and importance with patients, facilitate project plan, share, and collect patient survey
- Certified nursing assistants – identify facilitators and barriers to plan, communicate project plan to patients, facilitate project plan
- Unit clerical associates – identify facilitators and barriers to plan, facilitate project plan, assist with collection and storage or delivery of completed patient surveys to CNS
- VIP nurses (nurses performing patient discharges) – identify facilitators and barriers to plan, facilitate project plan, assist with collection and storage or delivery of completed patient surveys to CNS

- Phlebotomists – identify facilitators and barriers to plan, facilitate project plan
- Laboratory technicians – identify facilitators and barriers to plan, facilitate project plan
- Respiratory therapists – identify facilitators and barriers to plan, facilitate project plan
- Transport technicians – identify facilitators and barriers to plan, facilitate project plan
- Patients – identify problems, identify facilitators and barriers to plan, complete satisfaction surveys

Sleep Protocol

A sleep protocol was developed with input from all stakeholders, including patients and the patient advisory council. The protocol consists of dimming the lights, reducing noise, and clustering necessary care between 2300-0500. Before 2300, the nursing staff will perform bedtime rounds to meet the patient's comfort and needs. Routine morning phlebotomy draws will be delayed until after 0500. The protocol will utilize a laminated sign on each patient's door reading "Please see nurse before entering between 11 pm-5 am" (Appendix F). This sign will serve as a visual cue for all staff members to contact the nurse before entering and awakening the patient and allow for the organization of clustered care amongst the patient care delivery team.

Staff and Patient Education

Staff and patient education are essential for communicating the vision of the sleep protocol. Staff education explained the project's goals, the need for change, and the specific interventions to improve patients' sleep quality, such as lighting, noise, clustering care, phlebotomy times, and closed doors. The laboratory, transport, respiratory therapy, and imaging departments also received education on how their roles will change to support the

project. An education one-pager was provided during all staff education and placed on units for staff reference prior to the project's implementation (Appendix G). Patient education started on admission and continued throughout their stay. Patients were encouraged to share their opinions with nursing staff and management and complete the inpatient hospital survey on paper or electronically using a QR code (Appendix H).

Resources

Patient survey resources included print materials for paper surveys. Electronic surveys were created using a QR code link, which did not require any extra resources beyond the time spent creating the link. Resources for the laminated signs on each patient doorway included print materials, lamination materials, and double-sided tape to adhere them to the patient room doors.

Timeline

Faculty meetings began in June 2023, with monthly meetings planned for the completion of this project in April 2024. The first faculty and stakeholder meeting took place in July 2023, where a formal timeline (Appendix I) was arranged. Implementation began December 6, 2023, and continued through February 28, 2024, for ten weeks of data collection.

Barriers and Facilitators

Despite the positive discussion and collaboration efforts to develop a clear vision, gaining buy-in from physicians continued to cause delays in planning and project development. Due to time constraints for this project's timeline, the stakeholders made the collaborative decision to move forward without a physician champion. Moving forward without physician buy-in and physician champion required an intervention adjustment to include in the sleep

protocol. Without physician involvement, there was only a focus on nursing and environment-related interventions.

MEWS was delayed until after the start of 2024, causing another barrier for this project, specifically to the patient selection process. However, once the protocol was adjusted to accommodate the lack of physician buy-in, the delay in MEWS was no longer a barrier as a patient selection process would not be needed because all patients would be included in implementing a sleep protocol with nursing and environment-related interventions only. As mentioned, the lack of physician buy-in and physician champion caused a barrier to the inclusion of some of the planned initial interventions for sleep protocol, like adjustment to medication times, elimination of vital sign measurement through the night, and delay in any non-urgent imaging, leading to the development of nursing and environment related sleep protocol interventions.

Ethical Considerations

This project was submitted to the Michigan State University Internal Review Board (IRB) and a hospital-specific (IRB) for approval before this project was implemented. The hospital-specific IRB was deferred to the Michigan State University IRB, which determined this to be an EBP QI project.

Evaluation and Outcomes Measures

Inpatient satisfaction surveys and HCAHPS scores measured this project's success in determining if a sleep protocol improves patient satisfaction. Data was collected at monthly intervals to reveal incremental results of the project.

Results

Before staff education and protocol implementation, in October 2023, unit specific HCAHPS scores revealed that only 16.67% of hospitalized patients stated that the unit was always quiet at night. After staff education took place in early November 2023, HCAHPS scores increased to 58.14% for November 2023. After protocol implementation in December 2023, month-end scores returned to 56.25%. January 2024 scores increased to 70%, and the final month of data collection returned a February 2024 HCAHPS score for always quiet at night of 82.35% (Hospital Patient Experience, personal communication, March 22, 2024). See Appendix J for a visual display of data.

Along with HCAHPS scores, a voluntary patient satisfaction survey was offered in the unit at discharge. The survey asked patients how often routine tasks awakened them between 11 p.m. and 5 a.m. This survey was offered before sleep protocol implementation to gather data and assist in formulating appropriate interventions. The pre-protocol data was then compared to each survey's results after the sleep protocol implementation. Before implementation, patients were asked how often they were awakened between 11 p.m. and 5 a.m. The results were 0.08% of patients stated they were often or always awakened by lights in their room, 41.6% of patients stated they were often or always awakened by noise in the hallway, 50% stated they were often or always awakened for routine vital signs, 41.6% stating they were often or always awakened for routine blood draws, 0% of patients stating they were often or always awakened to transfer rooms. After implementation, the results decreased to 0% of patients stating they were often or always awakened by lights in their room, 0% of patients stating they were often or always awakened by a noise in the hallway, 0.04% stating they were often or always awakened for routine vital signs, 0% stating they were often or

always awakened for routine blood draws, and 0% stating they were often or always awakened to transfer rooms. See Appendix K for a visual display of data.

The pre-and post-sleep protocol survey also measured overall patient satisfaction scores. Prior to implementation, only 17% of patients rated their sleep satisfaction at a five or highly satisfied level. After implementation, that score increased to 37%. In contrast, 8% of patients rated their sleep as one or highly dissatisfied before implementation. This score improved to 0% after implementation. See Appendix K for a visual display of data.

Sustainability

Sustainability for this project will take continued reinforcement of the optimistic impact sleep protocol can have on patients. Recognition that changes take time will be important as key stakeholders adjust their workflow to achieve the project aim. Changing the organizational culture to one that recognizes and prioritizes sleep as necessary for healing will be a significant focus in achieving sustainability and the success of utilizing a sleep protocol.

Discussion/Nursing Implications

Overall, this project aims to improve patient satisfaction regarding the quality of sleep in the hospital by prioritizing quiet hours between 2300-0500. During 2300-0500, hallway lights will be dimmed, patient room lights will be turned off, patient doors will be closed, hallway conversations will be minimized and kept quiet, and phlebotomy draws will be timed after 0500 when possible. In unavoidable situations, such as the necessity of bed transfer to make room for new admissions, the care will be performed in the quietest manner possible, such as low lighting, low voice volume, and closing patient doors in the surrounding area. Furthermore, care

clustering with all patient care departments will be utilized to decrease the number of disruptions if care during these quiet hours is unavoidable.

Along with poorer patient satisfaction scores, studies have shown that reduced sleep in the hospital has led to increased hospital length of stay, delirium, and risk of falls (Auckley, 2022; Williams, 2022). Therefore, by focusing on noise and light reduction and adjusting the timeframe of patient care delivery to allow for uninterrupted sleep to increase patient satisfaction scores in the medical-surgical unit, there is also potential for improved patient outcomes, decreased risk of falls, and cost avoidance for the hospital. Hospital staff must work together and advocate for the patient.

Conclusion

In 2002, the Center for Medicare and Medicaid Services (CMS) partnered with the Agency for Healthcare Research and Quality (AHRQ) to develop the HCAHPS survey (Centers for Medicare and Medicaid Services, 2021). CMS and AHRQ determined hospital noise levels impacted patient care and satisfaction (Centers for Medicare and Medicaid Services, 2021). Evidence-based practice supports adjustments to the hospital patient care schedule, reduction of noise and light, and clustered patient care to improve patient sleep satisfaction. This evidence-based quality improvement project improved patient satisfaction scores through a sleep protocol. The goal now will be continued improvement and sustainability with the expansion to other units in the hospital.

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Appendix A: SWOT Analysis**Strengths**

- Magnet hospital with highly skilled nurses
- One of nation's leading health systems in research and education - research & teaching hospital
- Emphasis and focus on delivery of patient-centered care
- Ongoing shift toward value-based care

Weaknesses

- HCAHPS score for always quiet at night was 53%
- Resistance to change in policies
- Staff shares feeling unengaged in decision making for quality improvement
- Older equipment, producing noise

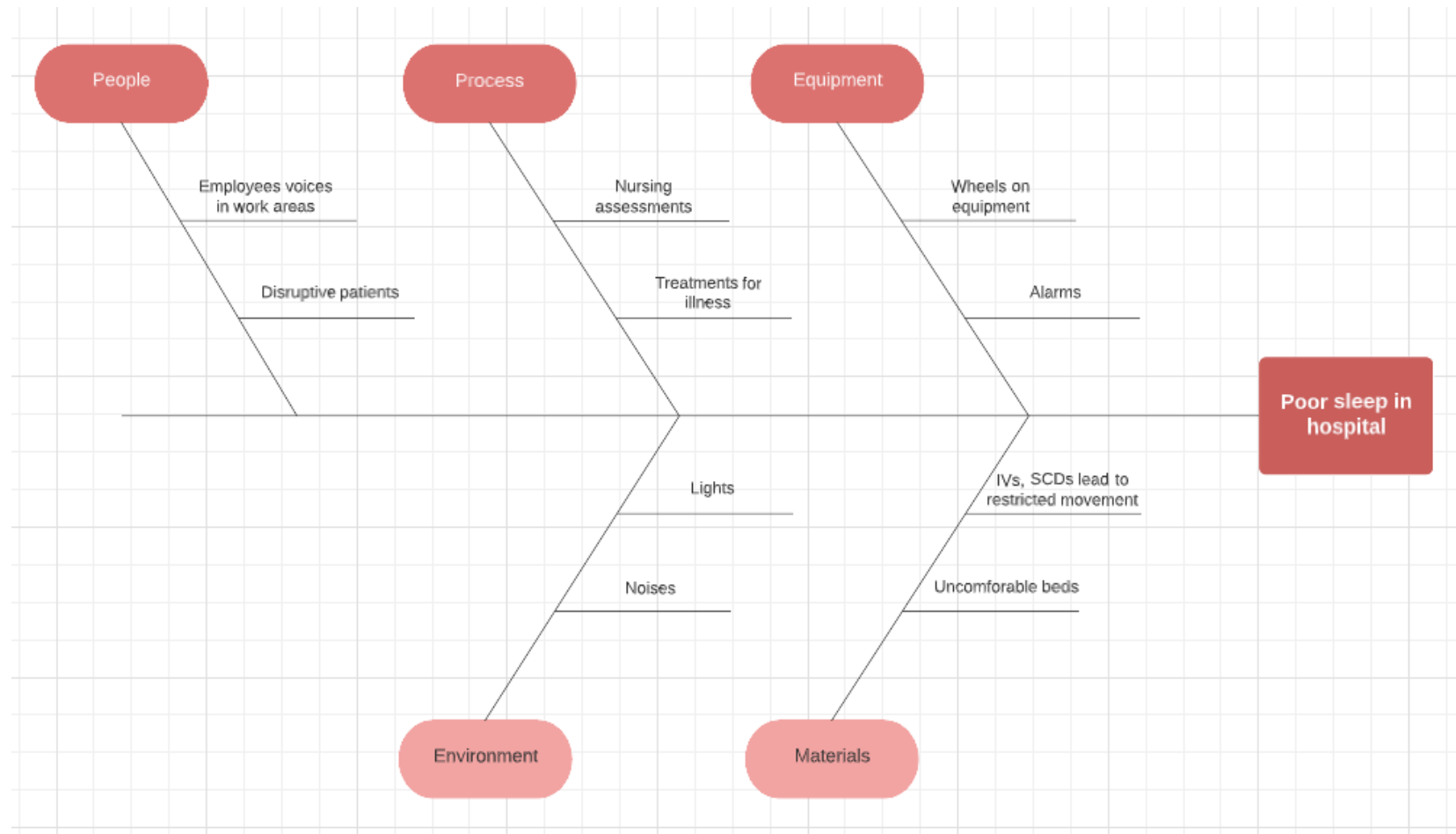
Opportunities

- Full clinical integration of value-based care to improve patient care, outcomes and healthcare reimbursement
- Creation of a new, innovative protocol to improve patient experience, satisfaction, and outcomes, while reducing healthcare costs

Threats

- Many area hospitals outperform this facility in the always quiet at night survey question
- New facilities and advancements in technology at surrounding competitor hospitals

Appendix B: Gap Analysis: Fishbone Diagram



Appendix C: Literature Table

Problem Statement: In patients hospitalized in medical-surgical units, how does a sleep protocol compared to no sleep protocol affect patient satisfaction?						
Article Citation	Design/Purpose	Sample/Setting	Measurement and Instruments	Results	LOE and Quality	Relevance to Problem
Barden et al., 2021	Retrospective case study; outline and discuss how a healthcare system improved "Quiet and Night" HCAHPS scores	15 of Northwell's adult inpatient hospitals	HCAHPS	Between 2017 and 2020, overall system HCAHPS "Quiet at Night" Top Box performance increased by 4.7, improving 30%; 12 out of the 15 Northwell hospitals (80%) saw a Top Box increase of at least 3.5	LOE = V, Quality = B	Increase in HCAHPS scores after implementing quiet hours at night
Gode et al., 2020	Quasi-experimental, evidence-based practice project implementation of sleep promotion to reduce the development of delirium	2 inpatient units at a metropolitan quaternary medical center in the upper Mid-west region in the United States; patients older than 65; positive delirium screening	Nursing Delirium Screening Scale; diagnosis coding; HCAHPS scores	HCAHPS quietness at night showed a statistically significant increase (P=.0005; CI, 0.05-0.67); positive delirium screening decreased from 26.3% to 17.9% (P<.00001) on the medical oncology unit and from 14.1% to 7.8% (P<.00001) on the surgical spine unit; cost avoidance for 2018 was \$160 505 and \$241 802, respectively, for the 2 units.	LOE = II, Quality = B	Statistically significant increase in patient satisfaction as evidenced by increased HCAHPS quiet at night scores using No Wake Zone between 1 am-6 am.
Graham et al., 2020	Quasi-experimental; Pilot study; determine evidence-based	3 units across 3 acute tertiary care tertiary hospitals: 13-bed medical unit in a	HCAHPS score; Yacker Tracker noise detector	Improvement in HCAHPS scores across all three hospitals, including patients/areas not participating in project.	LOE = II, Quality = B	Improvement in HCAHPS scores/patient satisfaction after implementation

	practice interventions to improve the patient experience with sleep and rest in the hospital. Three aims: (1) coach nurses in implementing EBP about sleep and rest for hospitalized patients; (2) evaluate barriers and promoters of the first aim for the nurses, patients, and other health team members; (3) improve patient satisfaction for quiet at night as measured by the HCAHPS survey.	110-bed Magnet-designated suburban hospital; 48-bed blood and marrow stem cell transplant unit in a 723-bed Magnet-designated university teaching hospital; 50-bed medical unit in a 600-bed inner-city hospital		Hospital A - HCAHPS prior to implementation = 53, post-implementation = 65; Hospital B HCAHPS prior to implementation = 59, post-implementation = 66; Hospital C HCAHPS prior to implementation = 56, post-implementation 59		of sleep protocol measures using Yacker Tracker, ear plugs/eye masks, education and sleep/quiet hours
Hedges et al., 2018	Quasi-experimental; improve HCAHPS scores for quiet at night	2 inpatient units at University of North Carolina Medical Center, a Magnet-recognized 803-	HCAHPS scores	HCAHPS scores increased on both units, one of the units exceeded the goal of 5% increase in score after 90 days	LOE = II, Quality = B;	Through use of noise reduction, warm water and sleep menu - including options such as extra pillows, ear plugs,

		bed level I trauma center				eye masks, warm blankets
Hillman, 2021	Expert opinion; address the causes and potential outcomes of poor patient sleep in the hospital and what interventions can improve patient sleep	Acute care hospitals			LOE = V, Quality = C	Provides list and examples of appropriate interventions to address poor sleep in the hospital
Hillman et al., 2023	Expert opinion; address the causes and potential outcomes of poor patient sleep in the hospital and what interventions can improve patient sleep	Acute care hospitals	St Mary's Hospital Sleep Questionnaire		LOE = V, Quality = B	Provides examples of appropriate interventions to address problem
Holleck et al., 2023	Survey-based pre- and post-intervention cross-sectional study using convenience samples; to determine the	Hospitalized veterans on a 23-bed general medical ward at a tertiary Veterans Administration Hospital	Patient survey (pre and post); MEWS	BP checks (56% of surveys (84/149)) and medication administration (40% (59/149)) were the two most frequent causes of sleep interruption. Other reasons were noise from hallway (39% [58/149]);	LOE = III, Quality = B	Restructuring of the clinical workflow significantly reduced disruptions and improved sleep

	impact of a sleep promoting nighttime workflow on sleep disruptions in hospitalized patient			blood collection (35% (52/149)); and pain (34% (51/149)). Post intervention med admin causing disruption became infrequent (4% (4/99) in post-surveys vs. 40% (59/149) in pre-surveys; $p < 0.001$). BP checks as a source of sleep disruption were also reported less frequently (42% (42/99) post-surveys vs. 56% (84/149) pre-surveys; $p = 0.04$).		
Shah & Krishnan, 2019	Expert opinion; discusses potential causes and consequences of poor sleep in the hospital and provides examples of interventions that could reduce patient awakenings during nighttime hours	Hospital setting			LOE = V, Quality = C	Examples of patient led interventions
Shapiro, 2023	Expert opinion; share interventions that could reduce	Acute care hospitals			LOE = V, Quality = B	Examples of appropriate interventions to implement

	patient awakenings during nighttime hours					
Sweity et al., 2019	RCT - single-center, open-label, two-arm, parallel group; to determine the short-term effects of supplying hospital inpatients with earplugs and eye masks on sleep quality	Patients 18 years and older who were admitted overnight, could read, understand and sign an English language consent and had the ability to complete the study questionnaire and use earplugs and eye masks unaided; 13 medical and surgical wards in a large teaching hospital in the UK	Sure Sleep Questionnaire; Measured after the first night of using earplugs and eye masks. Also measured were use of earplugs and eye masks, number of falls throughout inpatient stay, use of zopiclone during inpatient stay, length of stay and recruitment rate	Out of the 1600 patients admitted, 626 (39%) were eligible and 206 (13% total, 33% eligible) recruited (intervention group, 109). The intervention group's mean sleep quality score was 6.33 (95% confidence interval (CI): 5.89-6.77), compared with 5.09 (95% CI: 4.66-5.52) in the control group ($p < 0.001$). There were no differences in use of zopiclone, falls or length of stay between the groups. Of the intervention group, 91 (86%) reported using the earplugs and/or eye masks	LOE = I, Quality = B	Eye mask and ear plug use resulted in a highly significant increase in sleep quality
Tan et al., 2019	Narrative review; discuss how patient characteristics, hospital routines and environment affect sleep and what interventions can help decrease	Various inpatient settings	Early warning system score - MEWS	34% of 166 inpatients reported nocturnal VS monitoring as a major sleep disrupter; A study identified patients with significantly lower MEWS had overnight vital signs taken at a similar rate as high-risk patients; two studies found that 27-43% of patients identified noise	LOE = V, Quality = B	Discusses possible interventions to implement for the common factors causing poor sleep in the hospital;

	sleep interruptions			as a major cause of poor sleep; acoustic measurements revealed an average noise level of 38 dB in the patient rooms between 11pm and 7am, with a mean peak of 70 dB = vacuum cleaner		
William, 2022	Critically appraised topic (CAT); appraise evidence to determine need for practice change surrounding clustered care at night to decrease patient sleep interruption.	34 bed med-surg unit within a 55-bed training hospital	Early warning system (EWS) score; patient survey using 5-point Likert scale	Patient satisfaction using the Likert scale for the first 3 months was 71-83%, but the following 9 months were 86%, 87%, 91%, 91%, 98%, 99%, 99%, 100%, and 100%. Statistically significant reduction in administration of hydrocodone ($p = .02$), along with reductions in hydromorphone ($p = .25$), morphine ($p = .118$), oxycodone ($p = .054$), and oxycodone/acetaminophen ($p = .266$). Sleep medications Lunesta, Ambien, and Remeron had a reduction in use from 35 doses to 15 doses per month. 75% reduction in fall rates over the 12-month time frame, including 6 consecutive	LOE = II, Quality = B	Increased patient satisfaction, statistically significant reduction in opioid pain medication use, reduction in sleep medication use, significant reduction in fall rate using clustered care and noise reduction

				months with zero falls.		
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IMPROVING PATIENT SATISFACTION BY REDUCING SLEEP DISTURBANCES

Appendix D: Intervention Table

Citation	Ear Plugs/ Eye Masks	Vital Sign Times	Phleb Times	Medications	Reduce Noise	Reduce Light	Set Quiet Times	Patient Sleep Menu	Timing of Transfers
Barden et al., 2021	x				x		x (11p-5a)		
Gode et al., 2020	x	x	x	x	x	X (gen)	x (1a-6a)	x	
Graham et al., 2020	x	x	x		x	x	x (11p-5a & 12a-4a)		
Hedges et al., 2018					x			x	
Hillman, 2021		x (gen)	x (gen)	x	x	x			x
Hillman et al., 2023	x	x	x	x	x	x	x (bio clock)		x
Holleck et al., 2023		x	x	x	x		x (11p-6a)		
Shah & Krishnan, 2019	x	x	x	x	x	x			
Shapiro, 2023		x	x	x	x	x			
Tan et al., 2019		x		x	x	x			
Sweity et al., 2019	x								
William, 2022		x		x	x	x			
(gen) = generalized statement regarding timing adjustments to interventions and treatments to allow sleep during night hours.									

Appendix E: Kotter's Eight Step Change Model

KOTTER'S EIGHT STEP CHANGE MODEL

1. CREATE A SENSE OF URGENCY

Presentation of a clearly defined problem for EBP QI project as evidenced by low HCAHPS scores in the always quiet at night category. Making this the topic of the facilities scrub club generated conversation and involved some of the stakeholders who would continue to help create urgency.



2. FORM A GUIDING COALITION

This EBP QI project requires stakeholders and team members from many roles and departments. The team needed to be representative and all-inclusive. This stage allows for a gain of trust and commitment from the organization.



3. DEVELOP THE VISION

Building a clear vision for the EBP QI which supports best evidenced based practices. Development of clear and realistic goals and an achievable timeframe.



4. COMMUNICATE THE VISION

Communication is key. Sharing the vision for this EBP QI project takes communication with and buy-in from all involved stakeholders. This is achieved through effective communication, education and encouragement of support for the change vision.



5. REMOVE OBSTACLES

The identification of lack of physician buy-in and delay in patient selection tool led to the development and adjustment to the project plan.



6. CREATE SHORT-TERM WINS

To keep the momentum going and to encourage employees to keep backing the initiative, it's important to have short-term goals that can be measured by monthly measurement of patient satisfaction, HCAHPS top box scores, and leadership rounding to gain real-time feedback from patients. Recognition for work done is key to momentum and encouragement.



7. BUILD ON CHANGE

Can be achieved by identifying what is working well and make adjustments to areas that will benefit from improvement. Continue to reinforce the positive impact sleep protocol can have on patients and recognize that change takes time.



8. MAKE IT STICK

Changing the organizational culture to one that recognizes that sleep is necessary for healing and prioritizes it will be a major focus to achieve sustainability of the success of utilizing a sleep protocol.



Appendix F: Doorway Sign

**Please See
Nurse Before
Entering
Between
11pm – 5am**

Appendix G: Education One-Pager

SLEEP PROTOCOL PROJECT OVERVIEW

Why is sleep important for our patients?

Fragmented and disrupted sleep can lead to:

- ◆ Increased severity of illness
- ◆ Encephalopathy
- ◆ Delirium
- ◆ Poorer patient outcomes
- ◆ Impaired respiratory and immune function
- ◆ Increased pain and anxiety
- ◆ Decreased alertness
- ◆ Memory loss
- ◆ Impaired decision-making
- ◆ **ALL of which increase a patient's fall risk** (Auckley, 2020, & Burger et al., 2022).

What is the purpose of this project?

This project aims to improve patient satisfaction scores by using a sleep protocol designating quiet hours at night to reduce sleep disturbances in 6th floor med-surg patients. In October 2023, only 16% of 6th floor patients stated it was always quiet at night. So, 99% of hospitals in the country performed better than us in this HCAHPS category!

What are we doing for this project?

Between 11p-5a: A sign will be placed on door to 'see nurse before entering'.

Nurses	CNAs	Lab, RT and Imaging	Transport	Clerks and VIP nurses
Ensure hallway lights are turned off Turn patient room lights off (if they agree) Keep voices down During every 2 hour rounding keep noise down, keep light use dim, allow patient to sleep unless they need to be awakened Cluster care: give scheduled meds during every 2 hour rounds, have CNA go in at the same time if they have care to provide, retil IV infusions prior to 11pm	Ensure hallway lights are turned off Turn patient room lights off (if they agree) Keep voices down During every 2 hour rounding keep noise down, keep light use dim, allow patient to sleep unless they need to be awakened Collaborate with nurse to cluster care	Collaborate with nursing team to cluster care	Ensure surrounding patient room doors are closed to keep noise down when transferring patients Keep voices down Offer warm blankets for comfort during transport	Assist with delivery and collection of patient satisfaction surveys Notify patient that survey can be done on paper or accessed electronically via QR code located in upper corner of paper survey

Key Information

- ◆ Scheduled patient care should not be postponed or delayed because of this project. (*i.e., hourly rounds should still be performed, MRIs/imaging during these hours are still to be completed, lab draws will still be done – focus is to cluster as much care as possible when patients are awakened for this care!!*)
- ◆ Nurses numbers can be found on an assignment sheet at the clerk's desk on each unit.
- ◆ A patient survey will be given to each patient prior to discharge. If the patient chooses to complete the survey, it should be turned in to the clerk's desk where there will be a designated collection folder.

Appendix H: Pre and Post Patient Satisfaction Survey



Patient Satisfaction Survey



Option to complete the survey electronically!

Just scan with your smartphone camera!

Age _____

Gender ☐ Male ☐ Female ☐ Prefer not to say

How many nights have you been on the medical-surgical unit? _____

Between the hours of 11pm and 5 am I was awakened by lights in my room.

☐ Never ☐ Occasionally ☐ Often ☐ Always

Between the hours of 11pm and 5 am I was awakened by noise in the hallway.

☐ Never ☐ Occasionally ☐ Often ☐ Always

Between the hours of 11pm and 5 am I was awakened to take routine vital signs (blood pressure, temperature).

☐ Never ☐ Occasionally ☐ Often ☐ Always

Between the hours of 11pm and 5 am I was awakened for routine blood draws.

☐ Never ☐ Occasionally ☐ Often ☐ Always

Between the hours of 11pm and 5 am I was awakened to transfer hospital rooms.

☐ Never ☐ Occasionally ☐ Often ☐ Always

How would you rate your overall satisfaction with the quality of your sleep?

Very Satisfied ☐ ☐ ☐ ☐ ☐ Very Dissatisfied

1 2 3 4 5

What woke you up, kept you up, or what did staff awake you for at night in the hospital?

Do you have any suggestions for how we can improve the noise level, the quality of your sleep or your level of satisfaction with your quality of sleep? (Open-ended response)

Please turn in to the Clerk's Desk/Nursing Station. Thank you!

Your feedback will help us improve our care.

Appendix I: DNP Project Timeline

[illegible]

Appendix J: HCAHPS Data Results

HCAHPS Scores					
23-Sep	23-Oct	23-Nov	23-Dec	24-Jan	24-Feb
37.84	16.67	58.14	56.25	70	82.35
2	1	47	41	85	98

Appendix K: Unit-Based Patient Satisfaction Survey Data Results