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# Quiet at Night: A Quality Improvement project

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Quiet at Night: A Quality Improvement Project

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University of San Francisco

School of Nursing and Health Professions

## QUIET AT NIGHT: A QUALITY IMPROVEMENT PROJECT

### **Abstract**

#### **Problem**

Providing a quiet environment is essential in patient's healing and recovery. Last year, the October 15 through May 17 survey period resulted at a 2 Star Rating for the hospital, which is below the top 25th percentile. This result along with the patient population, telemetry designation, and unit size prompted the selection of the inpatient telemetry unit in Northern California for the change strategy plan.

#### **Context**

The microsystem is a 24-bed adult inpatient telemetry unit in Northern California. Assessment of the unit shows that inconsistencies exist when it comes to bundling care at night. Doors are kept open and lights are not dimmed during the nighttime hours. This initiative focuses on patient-centered care and buy-in from front line staff by involvement, education, and shared governance.

#### **Intervention**

A team was formed to assess, evaluate and plan for implementation of the project. The test of change consists of establishing quiet time, designing a visual management, and standardizing the care at night.

#### **Measures**

Process measures include patient rounding feedback and staff adherence to interventions and maintenance of quiet time. Balancing measures include staff engagement and patient participation.

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### **Results**

Data from the post intervention patient questionnaire shows an improvement in the patient's perception of the nighttime noise level after the project intervention was implemented. The results show an improvement of 50% to 78% (scale 4 and 5 combined) who responded, "Always and Frequently" to question "Do you feel like your room and hallway were quiet between 10 pm and 6 am?".

### **Conclusion**

This project increased staff awareness about the impact of noise on patient's sleep. When staff become aware through presentation of patient feedback, they are motivated to act. The structure of the Unit Practice Counsel (UPC) provided a mechanism to channel staff action and engagement to improve care for their patients. Plans for sustainability of results include continuous monitoring of quiet times, weekly patient surveys, overhead announcement, and slow-close door brackets to reduce noise from slamming doors. Further education should also be implemented with other ancillary departments such as Environmental Services, Radiology, and Laboratory.

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### Quiet at Night: A Quality Improvement Project

#### **Introduction**

What is healing? According to the Merriam-Webster dictionary, healing is defined as “to make free from injury or disease; to make sound or whole; to make well again; to restore health” (Merriam-Webster, 2017). Florence Nightingale wrote that healing involved bringing the body, mind, and spirit together to achieve and maintain integration and balance (Nightingale, 1860). A healing environment is needed to help ensure rests occurs. Sleep is a basic human necessity (Pellatt 2007). Psychologist Abraham Maslow introduced the concept of a hierarchy including basic human needs, which include water, breathing, food, and sleep. These are essential physiological need to maintain the human body (Maslow, 1943).

According to the World Health Organization Regional Office for Europe (WHO, 2009) conversations, telephones, and televisions are unnecessary noise. These are identified as major sources of environmental stimuli and can disturb patients. Other factors that can disrupt sleep in an inpatient hospital setting include doors slamming, telemetry alarms, and overhead announcements. Noise can cause awakening by stimulating cortical brain activity and cardiovascular heart rate and blood pressure (Buxton et al, 2012). Lack of sleep experienced by patients during a hospital admission may cause harm to health and well-being (Lavie et al 2002, Cook, 2008). Sleep deprivation contributes to stress, delayed recovery, and possibly results in longer length of stay. In addition, there can be a significant effect on the patient’s care experience in the organization.

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### **Problem Description**

The organization's mission statement is to provide affordable, high quality healthcare services to improve the health of the members and the communities served. This mission statement is aligned with the strategy plan for implementation of providing a quiet environment during sleep hours in addition to delivering safe and patient-centered care.

The Center for Medicare and Medicaid Services (CMS) measures hospital performance on Quiet at Night with the Hospital Consumer of Healthcare Providers and Systems (HCAHPS) survey. Performance on Quiet at Night Star is based on responses to question #9. On the HCAHPS Summary Star Rating, Quiet shares a dimension with cleanliness. Last year, the October 15 through May 17 survey period resulted at a 2 Star Rating for the hospital, which is below the top 25<sup>th</sup> percentile. This result along with along with the patient population, telemetry designation, and unit size prompted the selection of the telemetry unit in a Northern California hospital for the change strategy plan.

### **Available Knowledge**

Research on strategies to reduce noise and improve patient care experience by implementing quiet time on the unit currently exists – In a telemetry unit (P), does implementing quiet time with consistent bundled interventions on the unit (I) as compared to no designated quiet time and inconsistent bundled interventions, (C) improve patients' care experience (O)? A comprehensive search using "Fusion" was completed for peer reviewed articles dated 2004 to 2018 with keywords: nighttime noise, sleep, care experience, quiet at night, and healing which yielded 514 results. The John Hopkins Evidenced-Based Appraisal tool was utilized to review the articles used for this project.

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An article from the Noise and Vibration Worldwide author reports that people will always create noise in a busy healthcare facility and to consider acoustics during planning and construction of hospitals. The useful planning and construction of hospitals to help meet regulatory requirements is important (NVW, 2017). This article with expert opinion was useful in collaborating with the Engineering department to assess and plan to install slow-close brackets on stairwell doors that made a loud slamming sound when closed.

Pellatt (2007) describes the importance of sleep, especially in acute hospitalized patients. Since nurses have a significant role in promoting a quiet environment, it is important that nurses have a basic understanding of sleep problems, patterns and intervention. It is beneficial that staff education is provided on the importance of sleep and measures that may be effective. Participation of the UPC was critical in the education and implementation of the small test of change.

Kathy (2008) describes the sleep environment of older adults in acute care settings. A multidisciplinary approach to identify sources of noise and light, such as equipment and staff interactions could result in modification without compromising the quality of patient care. According to Cmiel, Karr, Glasser, et al (2004), the two most common responses from the study concludes that closing patient room doors and increased awareness of noise provided a quieter environment. In addition, patient comments can help tailor questions that will be asked during patient interviews. This study provided concepts on interventions for implementation. Wilson, LaBarba, Whiteman, Stephens and Swanson-Bearman (2017) conducted a descriptive study on 30 patient interviews. An increase in patient satisfaction scores may be sustained with continued, focused effort on quiet-at-night initiatives. This study can be useful in selecting the types of methods to be used during project implementation. Brown, Davis-Thomas and Yessis (2007)

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recommendations include getting a broad participation, assessing the environment, and providing noise information. This initiative focuses on patient-centered care and buy-in from front line staff by involvement, education, and shared governance.

Although three of the articles are not as robust, they are still helpful in developing interventions and aid creating a standardization for process improvement. In addition, the descriptive studies and patient surveys are helpful in comparing methods used, patient population, survey conception, planning, and implementation.

### **Rationale**

Havelock's change model theory (1973) is a modification of Lewin's three-stage model of change known as unfreezing-change-refreeze model that requires prior learning to be rejected and replaced. Havelock describes an active change agent as one who uses a participative approach to affect the desired change. There are six steps to Havelock's change theory. The first step is establishing a relationship with the system in need of change. The need to build a relationship between the people involved in the change must be carefully developed for success to be achieved. This includes macro system and microsystem assessment, leader participation, and members of the change. The second step is identifying and understanding the issue or problem. The third step is acquiring relevant resources that can help in achieving a resolution to the problem. The fourth step is choosing a solution from several of the possibilities that were developed in the resolution stage. The fifth step is moving the solution toward acceptance and adoption. The last step is the need to stabilize the innovation so that the unit can maintain the change.



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Relationship building and time invested with staff engagement is critical. Connecting the team to the purpose encourages participation and builds a culture of teamwork and trust among staff members. In addition, leadership stability is important for sustainability.

### **Specific Project Aim**

The specific aim of this project is to increase the percent of patients who respond with “Always and Frequently” to 70% (combined) from a pre-assessment baseline of 51% (combined) on the question “Did you feel like your room and hallway were quiet between 10 p.m. and 6 a.m.?” by June 30, 2018.

### **Context**

The 24-bed inpatient med-tele unit located in Northern California provides adult care for cardiac, medical, surgical, trauma, and stroke patients. The target population include short-stay patients converting to inpatient status that require cardiac monitoring and have multiple chronic conditions, patients transitioning out of the Intensive Care Unit (ICU), and stroke patients. In addition, the unit implemented a system which help identify strokes early, provide rapid treatments, prevent another stroke or complications, and assist with rehabilitation. Assessment of the microsystem was completed using the Dartmouth Microsystem Assessment Tool (The Dartmouth Institute, 2015). The information gathered for the year 2016 was received from several disciplines in the microsystem including management, support, and administrative services.

Brown, Davis-Thomas and Yessis (2007) recommendations include getting a broad participation, assessing the environment, and providing noise information. This initiative focuses on patient-centered care and buy-in from front line staff by involvement, education, and shared

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governance. The project was initially discussed with a team of assistant nurse managers (ANM), care experience leader, geriatric clinical nurse specialist, and department manager. The focus of the initiative is to acquire buy-in from front line staff and senior leadership support. The performance improvement project was introduced to the UPC during the last quarter of 2017. The UPC consists of front line staff from all shifts with the support of the department manager and meets monthly. With the decrease in budget this year, all performance improvement projects are channeled through the UPC. Other performance improvement projects include fall prevention, hospital acquired pneumonia (HAP) prevention, and the catheter-associated urinary tract infection (CAUTI) task force.

Leadership support and staff engagement strengthened the project. The relationship gap between patient care technician (PCT's) and registered nurse (RN) became a challenge due to accountability issues. Opportunities include education on HCAHPS score, connecting and understanding the purpose of the project, and a much-needed improvement on the nurse-patient communication and standardization of care. Threats include sustainability, lack of compliance, and lack of shared governance.

### **Intervention**

After comprehensive review of evidenced-based articles and meeting with UPC and Quiet at Night Committee, a unit survey was conducted which determined that quiet time will be from 10 p.m. to 6 a.m. The interventions include dimming the lights, closing of patient doors as appropriate, and offering warm lavender washcloth, unless contraindicated (see Appendix D). The small test of change will take place for two weeks. Day 1 started with one patient, day 2 with two patients, day 3 with five patients, along with the rest up to 14 days. The same patients were surveyed the following morning asking identical pre-assessment questions. After two

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weeks of testing the interventions, the data will be combined and compared with the pre-assessment results.

### **Study of the Intervention**

The questions related to the patient's perception on the nighttime environment was integrated into the existing process for staff and leadership rounds. The pre-assessment questionnaire was completed in a two-week timeframe. 55 patients were surveyed excluding non-verbal and confused patients. 27% (n=15) responded with "Always" (scale 5); 23% (n=12) of patients responded with "Frequently" (scale 4); 36% (n=20) patients responded with "Sometimes" (scale 3); 13% (n=7) of patients responded with "Seldom" (scale 2); 2% (n=1) of patients responded with "Never" (scale 1); using the Likert scale on question #1 "Did you feel like your room and hallway were quiet between 10 pm and 6 am".

Plan-Do-Study-Act (PDSA) cycle was used to plan to test the change for this project. The planning stage include the Quiet at Night Committee and UPC members in establishing quiet time (See Appendix D). Implementation materials such as signage, posters, and huddle message were created by the UPC. The ANM's were responsible for huddling the Quiet at Night information with staff in the beginning of evening and night shifts. The primary RN was responsible for implementation of interventions which included closing of doors, dimming the lights, and offering a warm lavender washcloth during the quiet time of 10 p.m. and 6 a.m. (See Appendix D). Criteria included those who are alert and oriented, willingness to participate, and have no allergies to the lavender scent. The post-assessment patient survey was initially conducted by the ANM. However, due to staffing constraints, the modified RN was given this task.

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### **Measures**

Timely patient feedback will be collected through a survey using Likert scale to evaluate improvements. Outcome measures will be determined by using the three questions asked during the pre-assessment patient survey after the intervention has been completed from each patient. The target is to increase the percentage of “Always and Frequently” to 70% (combined). The outcome measure is the patient’s perception of the nighttime noise level after the project intervention was implemented. The process measure will include the adherence to the small test of change and will be determined by nurse leader rounding and patient survey study. Balancing measures include delayed in intervention time, nighttime interruption due to vital signs and repositioning, and incomplete bundle interventions (see Appendix C).

### **Ethical Considerations**

This project was reviewed by faculty and is determined to qualify as an Evidence-based Change in Practice Project, rather than a Research Project. Institutional Review Board (IRB) review is not required. Ethical considerations may include different sleep patterns. Some patients may not consider 10 p.m. – 6 a.m. as their quiet time. Patients who have chronic sleep disorders may need other interventions to assist with sleep. Sleep hygiene may differ from every individual. Patients may not be fond of the lavender scent. Closing of doors may cause fear or entrapment.

### **Outcome Measure Results**

The post-assessment questionnaire was completed in a two-week timeframe. 55 patients were surveyed excluding non-verbal and confused patients. 47% (n=26) of patients responded with “Always” (scale 5); 31% (n=17) of patients responded with “Frequently” (scale 4); 15%

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(n=8) patients responded with “Sometimes” (scale 3); 5% (n=3) of patients responded with “Seldom” (scale 2); 2% (n=1) of patients responded with “Never” (scale 1); using the Likert scale on question #1 “Did you feel like your room and hallway were quiet between 10 pm and 6 am” (See Appendix D).

According to the Return on Investment (ROI) that is created (see Appendix E), there is significant cost avoidance in reducing average length of stay by one day. Considering inpatient cost per day at \$3,500, decreasing nighttime noise can reduce sleep deprivation, assist with recovery, and shortened length of stay. If the current average length of stay is four days, one day reduction during the 14-day implementation of the performance improvement project will have a total cost avoidance of \$49,000.

### **Summary and Conclusions**

This project increased staff awareness about the impact of noise on patient’s sleep. When staff become aware through presentation of patient feedback, they are motivated to act. The structure of the UPC provided a mechanism to channel staff action and engagement to improve care for their patients. Plans for sustainability of results include continuous monitoring of quiet times, weekly patient surveys, overhead announcement, and slow-close door brackets to reduce noise from slamming doors. Further education should also be implemented with other ancillary departments such as Environmental Services, Radiology, and Laboratory.

Continued collection of patient feedback and monitoring of results is important to maintain current trends. Regular updates should be provided to staff on the project’s results to continue engagement. Structure can be built with a variability of PDSA cycles to maintain sustainability despite the change in leadership and staff. The increase in awareness of the burden of sleep loss among healthcare professionals through continuous education and training can help

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ensure that nurse communication and collaboration exist during the patient's hospital stay.

Evidence-based practices that support the ability of patients to obtain adequate sleep during hospitalization are critical to providing patient-centered care and will improve patient outcomes.

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**Appendices**



## QUIET AT NIGHT: A QUALITY IMPROVEMENT PROJECT

## Appendix A

## CNL Project: Statement of Non-Research Determination Form

**Student Name:** Maria Novales-Fiel

**Title of Project:** Improving Quiet at Night in an inpatient med-tele unit in Northern California.

**Brief Description of Project:** The goals of this project are to decrease nighttime noise level in an inpatient med-tele unit, decrease sleep deprivation among patients, minimize interruptions at night, and improve patient restfulness. These goals can attribute to decreased length of stay, improved patient safety and increased member retention.

**A) Aim Statement:** The specific aim of this project is to increase the percent of patients who respond with “Always and Frequently” to 70% (combined) from a pre-assessment baseline of 51% on the question “Did you feel like your room and hallway were quiet between 10 p.m. and 6 a.m.?” by June 30, 2018.

**B) Description of Intervention:** Bundling care during the quiet night hours of 10 p.m. – 6 a.m. bundling care include closing doors, dimming lights, and offering warm lavender washcloth.

**C) How will this intervention change practice?** Assessment of med-tele shows that inconsistencies exist when it comes to bundling care at night. Doors are kept open and lights are not dimmed during the nighttime hours.

**D) Outcome measurements:** Timely patient feedback will be collected through a survey using Likert scale to evaluate improvements.

To qualify as an Evidence-based Change in Practice Project, rather than a Research Project, the criteria outlined in federal guidelines will be used: (<http://answers.hhs.gov/ohrp/categories/1569>)

This project meets the guidelines for an Evidence-based Change in Practice Project as outlined in the Project Checklist (attached). Student may proceed with implementation.

This project involves research with human subjects and must be submitted for IRB approval before project activity can commence.

Comments:

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### EVIDENCE-BASED CHANGE OF PRACTICE PROJECT CHECKLIST \*

**Instructions: Answer YES or NO to each of the following statements:**

Project Title:	YES	NO
The aim of the project is to improve the process or delivery of care with established/ accepted standards, or to implement evidence-based change. There is no intention of using the data for research purposes.	X	
The specific aim is to improve performance on a specific service or program and <b>is a part of usual care</b> . ALL participants will receive standard of care.	X	
The project is <b>NOT</b> designed to follow a research design, e.g., hypothesis testing or group comparison, randomization, control groups, prospective comparison groups, cross-sectional, case control). The project does <b>NOT</b> follow a protocol that overrides clinical decision-making.	X	
The project involves implementation of established and tested quality standards and/or systematic monitoring, assessment or evaluation of the organization to ensure that existing quality standards are being met. The project does <b>NOT</b> develop paradigms or untested methods or new untested standards.	X	
The project involves implementation of care practices and interventions that are consensus-based or evidence-based. The project does <b>NOT</b> seek to test an intervention that is beyond current science and experience.	X	
The project is conducted by staff where the project will take place and involves staff who are working at an agency that has an agreement with USF SONHP.	X	
The project has <b>NO</b> funding from federal agencies or research-focused organizations and is not receiving funding for implementation research.	X	
The agency or clinical practice unit agrees that this is a project that will be implemented to improve the process or delivery of care, i.e., <b>not</b> a personal research project that is dependent upon the voluntary participation of colleagues, students and/ or patients.	X	
If there is an intent to, or possibility of publishing your work, you and supervising faculty and the agency oversight committee are comfortable with the following statement in your methods section: <i>“This project was undertaken as an Evidence-based change of practice project at X hospital or agency and as such was not formally supervised by the Institutional Review Board.”</i>	X	

**ANSWER KEY:** If the answer to **ALL** of these items is yes, the project can be considered an Evidence-based activity that does NOT meet the definition of research. **IRB review is not required. Keep a copy**

**QUIET AT NIGHT: A QUALITY IMPROVEMENT PROJECT**

**of this checklist in your files.** If the answer to ANY of these questions is **NO**, you must submit for IRB approval.

\*Adapted with permission of Elizabeth L. Hohmann, MD, Director and Chair, Partners Human Research Committee, Partners Health System, Boston, MA.

**STUDENT NAME (Please print): Maria Novales-Fiel**

\_\_\_\_\_  
**Signature of Student: Maria Novales-Fiel** **2/4/18**

\_\_\_\_\_ **DATE** \_\_\_\_\_

**SUPERVISING FACULTY MEMBER NAME (Please print):**

\_\_\_\_\_  
**Signature of Supervising Faculty Member**

\_\_\_\_\_ **DATE** \_\_\_\_\_

## QUIET AT NIGHT: A QUALITY IMPROVEMENT PROJECT

**Appendix B****Evaluation Tables****Maria Novales-Fiel****PICOT Question**

In a telemetry unit (P), does implementing quiet time with consistent bundled interventions on the unit (I) as compared to no designated quiet time and inconsistent bundled interventions, (C) improve patients' care experience (O)?

Study	Design	Sample	Outcome/Feasibility	Evidence rating
Reducing noise at the hospital. (2017). <i>Noise &amp; Vibrations Worldwide</i> , 48(11), 151-153. Doi: 10.1177/0957456517747678	Expert Opinion	none	<p>People will always create noise in a busy healthcare facility. Consider acoustics during planning and construction of hospitals.</p> <p>Useful for planning and construction of hospitals to help meet regulatory requirements.</p>	LV B
Pellatt, G. (2007). Clinical skills. The nurse's role in promoting a good night's sleep for patients. <i>British Journal of Nursing</i> , 16(10), 602-605.	Expert Opinion	none	<p>Nurses have a significant role in promoting an environment enabling patients to get a good night's sleep.</p> <p>Beneficial in educating staff on the importance of sleep.</p>	LV B

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<p>Kathy, M. (2008). Sleep and the Sleep Environment of Older Adults in Acute Care Settings. <i>Journal Of Gerontological Nursing</i>, (6), 15</p>	<p>Descriptive study</p>	<p>Consecutive sample of 7 participants monitored for 3 days in a 300-bed acute care hospital</p>	<p>Describes multidisciplinary approach to identify sources of noise and light, such as equipment and staff interactions, could result in modifications without compromising the quality of patient care. Helpful in identifying what types of modification can be done to reduce noise in 2B.</p>	<p>LIII B</p>
<p>Cheryl Ann, C., Dana Marie, K., Dawn Marie, G., Loretta Marie, O., &amp; Amy Jo, N. (2004). Noise Control: A Nursing Team's Approach to Sleep Promotion. <i>The American Journal Of Nursing</i>, (2), 40.</p>	<p>Quality Improvement – PDSA Cycle</p>	<p>Recordings of decibel levels during NOC shift in three empty patient rooms without staff knowledge.</p>	<p>The two most common responses from study concludes that closing patient room doors and increased awareness of noise level provided a quieter environment.</p> <p>Patient comments can help tailor questions that will be asked during patient interviews.</p>	<p>LV B</p>
<p>Wilson, C. ), LaBarba, J. ), Whiteman, K. ), Stephens, K. ), &amp; Swanson-Biearman, B. ). (2017). Improving the patient's experience with a multimodal quiet-at-night initiative. <i>Journal Of Nursing Care Quality</i>,</p>	<p>Quality Improvement</p>	<p>Random convenience sample of 30 patient interviews</p>	<p>Increase in patient satisfaction scores may be sustained with continued, focused effort on quiet-at-night</p>	<p>LV B</p>

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32(2), 134-140. doi:10.1097/NCQ.0000000000000219			initiatives.  Useful in types of methods during project implementation	
Brown, P., Davis-Thomas, J., & Yessis, (2007) J. Quiet please. I'm trying to recover! Strategies to reduce noise in the hospital environment. <i>NRC Picker Quarterly White Paper</i> .	Consensus Statement	None	Recommendations include get broad participation, assess environment, provide noise information.  Initiative focuses on patient-centered care.	LIV A

## QUIET AT NIGHT: A QUALITY IMPROVEMENT PROJECT

### Appendix C

#### Charter

**Project Charter:** Improving Quiet at Night in an inpatient med-tele unit in Northern California.

**Global Aim:** The aim is to improve patient satisfaction on quiet at night in an inpatient hospital setting in Northern California.

**Specific Aim:** The specific aim of this project is to increase the percent of patients who respond with “Always and Frequently” to 70% (combined) from a pre-assessment baseline of 51% (combined) on the question “Did you feel like your room and hallway were quiet between 10 p.m. and 6 a.m.?” by June 30, 2018.

**Background:** To provide a healing environment, rest is needed. Sleep is a basic human necessity (Pellatt, 2007). Sleep is a basic physiological need to maintain the human body (Maslow, 1943). According to the World Health Organization Regional Office for Europe (WHO, 2009) conversations, telephones, and televisions are unnecessary noise. These are identified as major sources of environmental stimuli and can disturb patients. Other factors that can disrupt sleep in an inpatient hospital setting include doors slamming, telemetry alarms, and overhead announcements. Noise can cause awakening by stimulating cortical brain activity and cardiovascular heart rate and blood pressure (Buxton et al, 2012). Studies show that patients experiencing lack of sleep during hospital admission causes harm to health and well-being (Lavie et al 2002, Cook, 2008). Sleep deprivation causes stress, and delayed recovery, which in turn results in longer length of stay. In addition, significant impact on patient care experience is affected in an inpatient med-tele unit in a Northern California hospital.

**Goals:** The goals of this project are to decrease nighttime noise level in an inpatient med-tele unit in Northern California, decrease sleep deprivation among patients, minimize interruptions at night, and improve patient restfulness. These goals can attribute to decreased length of stay, improved patient safety and increased member retention.

#### Sponsors

Chief Nurse Executive	Cherie Stagg, MSN, RN
Clinical Adult Services Director	Colleen Moran, MBA, MSN, RN

#### Team

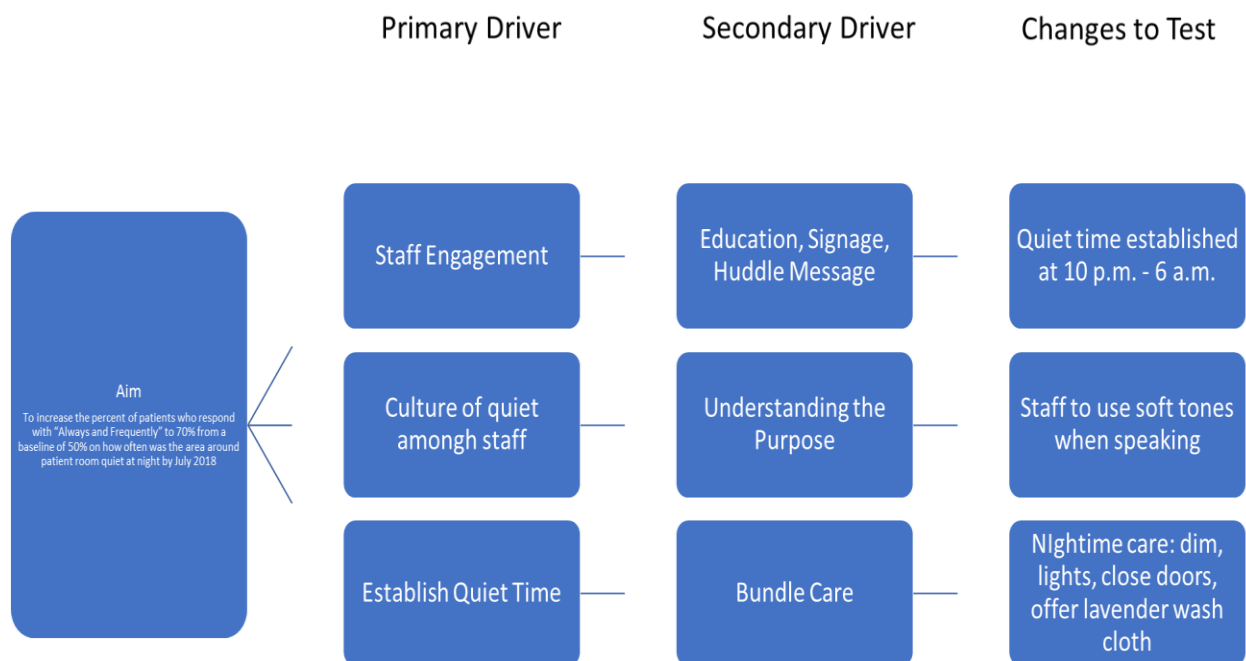
Physician Co-lead	Patrick Gibbons, MD
Department Manager	Maria Novales-Fiel
Clinical Nurse Specialist	Anna Satake
Care Experience Leader	Michelle Bushong
Assistant Nurse Manager	Kim Meredith, Reginald Restauro Alok Sharma
Staff Nurse Champions	Mary Thomas, Erika Tongson-Bilaro, Scott Frank, Tina Potts, Amy Matsukado

## QUIET AT NIGHT: A QUALITY IMPROVEMENT PROJECT

### Family of Measures

Measure	Type	Target	Data Source
Number of staff who adhere to small test of change	Process	70% or greater	Nurse Leader Rounding Patient Survey
Number of patients who answer "Always and Frequently" on question "Did you feel like your room and hallways were quiet between 10 pm and 6 am?"	Outcome	70% or greater	Patient Survey
Delayed intervention and incomplete bundles.	Balancing	25% or less	Nurse Leader Rounding
Nighttime interruptions due to frequent vital signs and/or nursing care every 2 hours.	Balancing	25% or less	Nurse Leader Rounding Patient Survey

### Driver Diagram





## QUIET AT NIGHT: A QUALITY IMPROVEMENT PROJECT

### Measurement Strategy

#### Background (Goal Statement)

The goal of this project is to create and implement a process to decrease the noise level in an inpatient med-tele unit in Northern California to improve patient satisfaction on Quiet at Night which can attribute to decreased length of stay, improved patient safety, and increased member retention.

#### Population Criteria

All patients in the 24-bed inpatient med-tele unit in Northern California are included in the population setting. Exclusions are those patients who are non-verbal and have no family at bedside.

#### Data Collection Method

Data will be obtained from the NSQ website for the “Quiet at Night” HCAHPS survey with final month result. Additional data collection will take place for two weeks prior to implementation date. 55 patients will be surveyed for 14 days asking the following questions:

1. Did you feel like your room and hallway were quiet between 10 pm and 6 am?
2. How frequently did you have interruptions during the night? (10 pm-6 am)
3. What contributed to the noise or interruptions during the night?

#### Changes to Test

The change being implemented in the inpatient med-tele unit utilizes a variety of concepts to ensure a quiet and healing environment is provided for the patients at night. While several factors contribute to sleep deprivation, the assessment questions can assist the CNL in determining specific causes in this unit. Nurse champions can also assist with this process. The CNL plans to recruit the stroke champions who round on patients Mondays, Wednesdays, and Fridays.

#### Project Timeline

	11/2017	12/2017	1/2018	2/2018	5/2018	6/2018	7/2018
Define topic with sponsor and team							
AIM statement and background – develop charter							
Perform Microsystem Re-assessment with patient 3-question survey							

## QUIET AT NIGHT: A QUALITY IMPROVEMENT PROJECT

Meet with team to discuss results of survey							
Identify changes to test							
Test of change implementation and post implementation of survey							
Completion of charter and final presentation							

### CNL Role

The Clinical Nurse Leader (CNL) is a new nursing care model that was developed in response to these challenges, and has been implemented in hospitals across the United States. Implementation of CNL practice is an evidence-based approach that supports improvement in the patient care quality and safety in the current health care environment. Nursing leaders are challenged to explore this role as a viable option in practice model redesign. As the evidence base continues to evolve, CNL practice is demonstrating potential to advance the contribution of the nursing profession towards improving patient care outcomes and a satisfying work environment for nurses. According to the American Association of Colleges of Nursing White Paper on the Education and Role of the CNL (2007), two roles come into mind with the change strategy project of quiet at night. These include outcomes manager and team manager. The outcomes manager can integrate data and knowledge to be able to accomplish client outcomes while the team manager delegates and manages resources while collaborating with the interdisciplinary teams (AACN, 2007).

### Lessons Learned

1. Microsystem Assessment – There were challenges obtaining information from other disciplines such as the Finance Department. In addition, unfamiliarity with accessing websites or databases for material needed for microsystem assessment was problematic.
2. Performance Improvement – realization on how process implementation takes time, effort, support and collaboration. Sufficient evidence based research is necessary to support performance improvement projects and may assist with staff participation and leadership support.

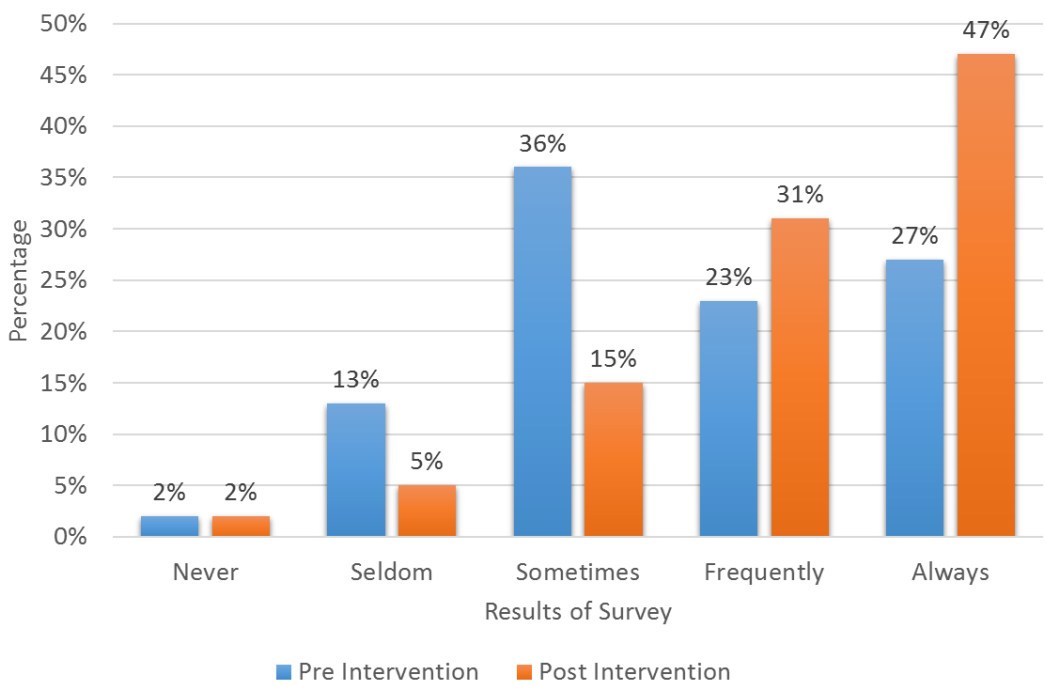
# QUIET AT NIGHT: A QUALITY IMPROVEMENT PROJECT

## Appendix D SWOT Analysis



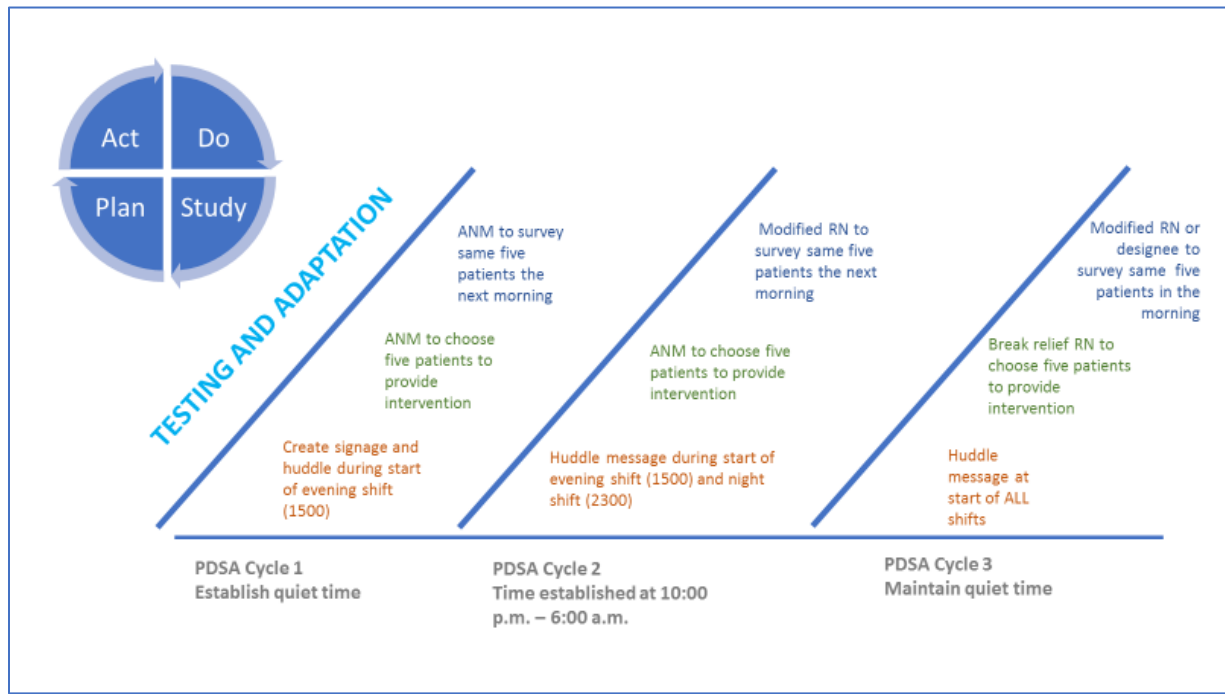
### BAR CHART

Quiet at Night - Patient Perception Survey  
Pre and Post Intervention



# QUIET AT NIGHT: A QUALITY IMPROVEMENT PROJECT

## PLAN-DO-STUDY-ACT (PDSA)



## INTERVENTIONS

- Dim Lights
- Warm lavender washcloths
- Close doors

## QUIET AT NIGHT: A QUALITY IMPROVEMENT PROJECT

**Appendix E**  
**Cost Benefit Analysis**

**ROI**

Cost Avoidance	
Current length of stay (LOS) – 4 days	Projected LOS – 3 days
Cost = (4 X \$3,500) = \$14,000	Cost = (3 X \$3,500) = \$10,500
Cost Avoidance (\$14,000 - \$10,500)	\$3,500
Cost avoidance for 14 days of implementation	\$49,000

Cost Savings	Total Cost
Decrease length of stay (LOS)	\$3,500 x 14 days = \$49,000
Project Implementation Cost	\$14,840
Cost savings	\$34,160

**Appendix F**  
**Budget**

Signs and flyer materials	\$500
UPC Monthly Meetings (4 hours X 6 staff) - \$1,560 \$65/hr	\$1,560/month \$9,360/6 months
Quiet at night committee meeting (1 hour X 5 staff) 6 meetings \$75/hr	\$375/meeting \$2,250/6 meetings
Nursing Hours – Pre-assessment Survey \$65.00/hr – 1 hour/day – 14 days – 14 hours total	\$910
Implementation hours – \$65.00/hr – 1 hour/day for 14 days – 14 hours total	\$910
Nursing Hours – Post-assessment Survey \$65.00/hr – 1 hours/day – 14 days – 14 hours total	\$910
<b>Total Cost</b>	<b>\$14,840</b>

# QUIET AT NIGHT: A QUALITY IMPROVEMENT PROJECT

## Appendix G

### QUIET AT NIGHT - PATIENT SURVEY

Room #:					
1. Did you feel like your room and hallway were quiet between 10P and 6 am?	1	2	3	4	5
	Never	Seldom	Sometimes	Frequently	Always
2. How frequently did you have interruptions during the night (10p to 6 am)?	1	2	3	4	5
	Never	Seldom	Sometimes	Frequently	Always
3. What contributed to the noise or interruptions during the night?	Comments:				

### Quiet at Night Flyer – Created by Unit Practice Counsel



#### Quiet Time is Coming to 4B!

**QUIET TIME is...**  
...an opportunity to provide a quiet environment on a designated period of time to promote good health and healing.

**QUIET TIME HOUR**  
10pm-6am

**WHY QUIET TIME?**  
The non-stop delivery of health care, monitor alarm sounds, overhead paging, hallway noises can be disruptive to patient sleep patterns and can affect their ability to heal and recovery. Providing a quiet environment facilitates sleep quality which in turn enhances patient recovery.

**OUR GOAL is...**  
...to decrease noise levels and promote a quiet and healing environment to our patients.

Here's what we're doing about it:

- S** - Staff awareness by using softer tones when speaking with colleagues
- H** - Help promote relaxation and sleep by providing patient lavender face cloth
- H** - Help provide restful and healing environment by dimming down the lights and closing patient's doors
- H** - Help raise awareness on Quiet at Night by posting signage on the unit

LPC 2015