Helping Understand Sleep Heals-ICU Alarm Counts and Richard-Campbell Sleep Questionnaire

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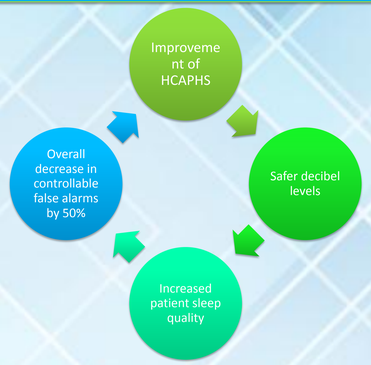
Background

- The United States Environmental Protection Agency (EPA), the guidelines for background noise are 45 decibels (dβ) during the day and 35 dβ at night in patient rooms.
- Research has shown that hospital noise levels exceed this recommended guideline of the EPA, making sleep difficult in an already hectic environment.
- Poor sleep quality leads to:
  - Slower healing
  - Poor immune response
  - Decreased cognitive function
  - Increased length of hospital stay

- Sleep deprivation has been linked to:
  - A rise in patient falls
  - Increased patient confusion
  - The increased use of medication
  - The increased use of restraints and 1:1s
- It can take as little as 24 to 48 hours for the body to begin reacting negatively to a lack of sleep in patients.
- The purpose of the current study was to decrease the level of noise and the number of controllable alarms to help aid in increased patient and staff satisfaction.

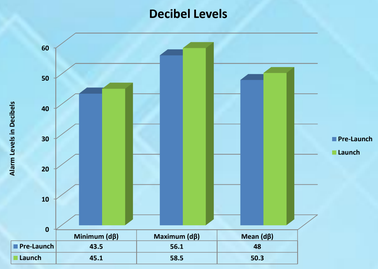
Goals & Evaluation Methods

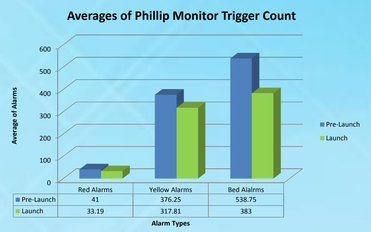
- Goals:

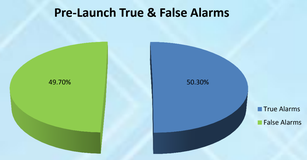


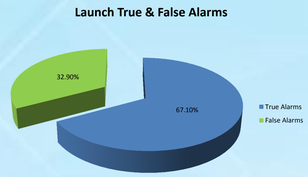
- The tools for measurement and evaluation of the project include:
  - HCAPHS
  - Manual Alarm Counts
  - Decibel Meter Readings
  - Phillips Monitor Alarm Trigger Printouts
  - Richard-Campbell sleep study

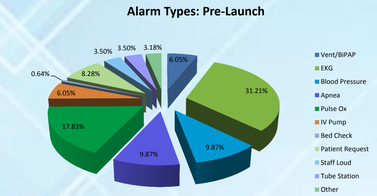
H.U.S.H. Results

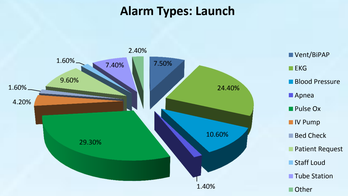


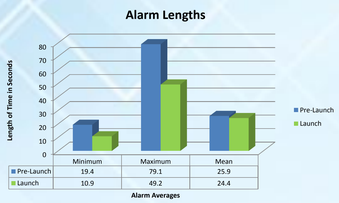


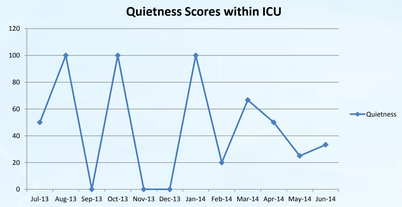


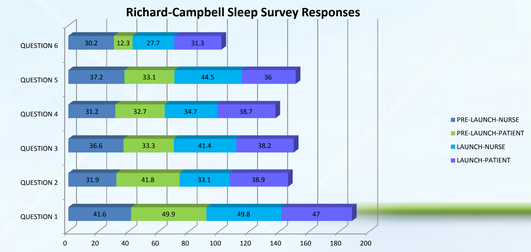












Interventions

- Quiet Time is observed everyday in the ICU from 1am-4am and 2pm-4pm.
- During Quiet Time:
  - Lights are dimmed
  - Television volumes should be turned down
  - Head sets and ear buds may be used
  - Staff will interact quietly and remind anyone entering the unit that "quiet time" is in progress
  - Staff will limit nursing activities during these times and not enter the patient room unless necessary
  - Patient's door will be closed. . .if able to safely
  - When therapeutic interventions are necessary they will be performed as quietly as possible

- Removal of hallway ventilator alarms that averaged 86 to 90 plus decibels

Conclusion

- Most of the data collected had no significant difference, but there were some exceptions.
- Percentage of false alarms, the maximum of alarm lengths, and the patient scoring of noise on the Richard-Campbell sleep study did show slight improvements.
- From the data that was collected, one can see why noise levels in the hospitals are a main concern especially in regards to sleep and the EPA guidelines.
- The correction of high noise levels can possibly lead to better sleep at night. This trickle-down effect can lead to a shorter stay in hospitals, and eventually decreasing the hospital cost.

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