Sleep Smart:
Exploring the Feasibility of an Evidence-based Sleep Enhancement Intervention

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Background

Patients' sleep is often interrupted during hospitalizations due to various factors, such as overnight vital signs monitoring.[1-6] Sleep disturbances can lead to delirium, prolonged hospital stays, and higher rates of mortality.[7-10] Studies have suggested that reducing overnight vital signs monitoring is a promising step towards enhancing patients' sleep quality.[11-14] The Epic Deterioration Index (EDI) has been shown to be effective in stratifying patients into low-risk and high-risk groups.[15] This study examines the feasibility of utilizing EDI to withhold overnight vital signs monitoring in low-risk patients to optimize their sleep quality and explore the framework of executing a "Sleep Smart" program at a tertiary medical center.

Methods

- Two sequential exploratory pilot studies were executed on a single hospital floor.
- Inclusion criteria were adult patients, on telemetry, with a pre-bed EDI of <25.
- Healthcare teams were informed via electronic communication that overnight risk of code or death was 0.007%, and hence, uninterrupted sleep may be more appropriate than waking these patients to record their vital signs.
- Clinicians were advised to place a nurse communication order for low-risk patients:

"if pre-bed EDI < 25, please do not wake patient for BP nor temperature overnight unless clinical concern or clinical change warrants. Continue monitoring and assessments as you otherwise would."

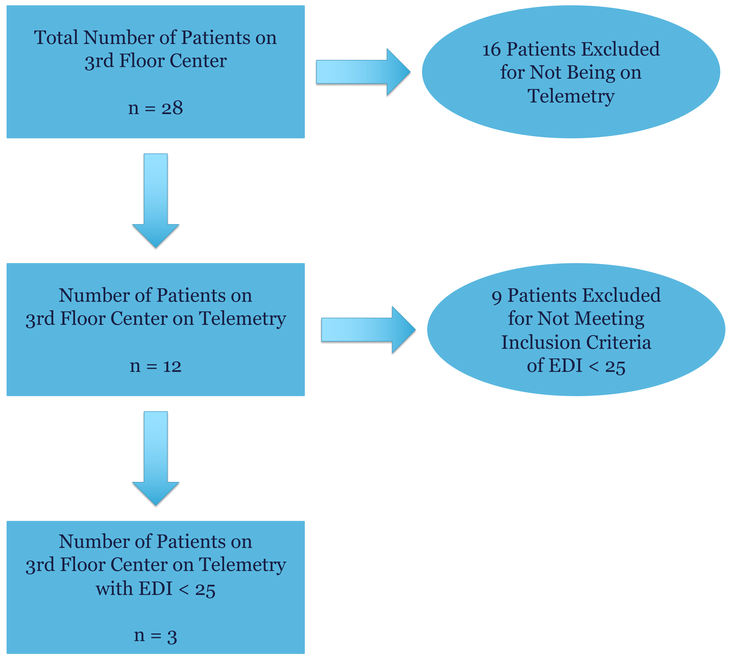
- Sleep Smart team members circulated on the hospital floor and asynchronously corresponded with the healthcare teams.

Results

- Healthcare teams favored the Sleep Smart program pilot and favored its goal to enhance patients' sleep quality.
- Difficulty with locating the patients' EDI and not viewing the nurse communication order were challenges that were reported by the healthcare teams.
- Variability in vital signs assessments performed by nurses and lack of detailed recommendation regarding recording heart rate and respiratory rate led some patients to experience disturbed sleep despite the order.
- Different degrees of clinical comfort prompted some members of the healthcare team to to opt-out of placing the nurse communication for otherwise eligible low-risk patients.

Figure 1A: Patient Selection Process: Sort*

Figure 1B: Patient Selection Process: Flow*



*For exemplary purposes.
Systematic approach to patient selection was utilized by Sleep Smart team members on a regular basis.

Figure 2: Epic Secure Chat Communication to Clinicians

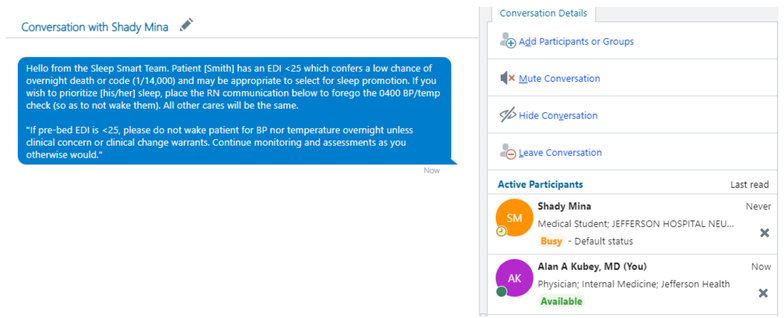


Figure 3: Nursing Communication Order Example

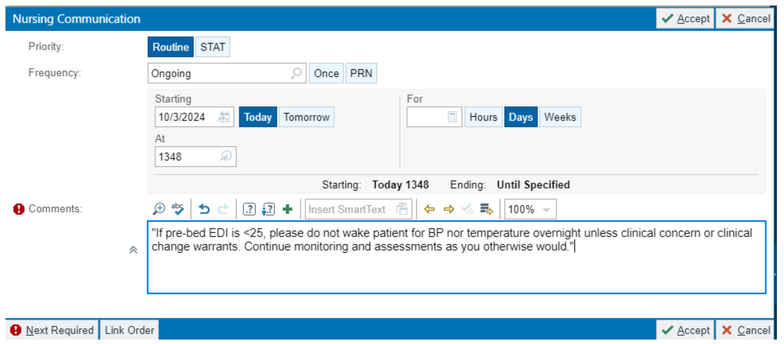


Figure 4: Feedback From Healthcare Teams

Conclusions

- Feedback from healthcare teams suggests feasibility of implementing the Sleep Smart program.
- Components of the system of communication between Sleep Smart team members and healthcare team should be optimized to further promote patients' overall well-being.

Future Directions

- Examine patient sensitive outcomes.
- Interview patients to evaluate effects of permitting uninterrupted sleep overnight.
- Distribute a series of questionnaires to patients to rate their length of sleep and quality of sleep.
- Assess patients' electronic medical record to analyze any changes in the patients' health status and detect any potential overnight clinical emergencies.
- Expand inclusion criteria to low-risk patients with EDI greater than 25 and, subsequently, non-telemetry patients.

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