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A Multicomponent Quality Improvement Project to Improve Sleep in Hospitalized Patients: A Single Center Pilot Experience

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Abstract

Title: A Multicomponent Quality Improvement Project to Improve Sleep in Hospitalized Patients: A Single Center Pilot Experience

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Introduction

Hospital systems and environment contribute to poor patient sleep which leads to poor patient outcomes. After identifying promising interventions through literature review, our team created a single-academic-medical-center-specific combined provider-education-and-patient-device-based quality improvement project to improve patient sleep.

Methods

First, through in-person provider education and individual and workroom/nursing station/patient room displays, providers were encouraged to promote light exposure and activity during the day and darkness and quiet at night and to order labs, medications, and vital monitoring in ways that minimized 10PM-6AM disruptions (PE). Second, patients were provided a “care package” of earplugs, earbuds, and eye mask with education on use; a subset of patients in atrium-facing rooms were additionally provided red-wavelength and/or blue-wavelength lights (CP). Pre-post subjective patient data was obtained through

patient questionnaires in time intervals to allow separate evaluation of PE and PE+CP; pre-post objective data was obtained through retrospective chart review.

Results

Five of seven process measures non-significantly trended toward goal. With 31 control and 18 intervention patients, the PE and PE+CP interventions revealed trends toward improved sleep (4.4 hours/night [control] vs 5.1 [PE, $p=0.23$] vs 6.0 [PE+CP, $p=0.10$]) and fewer overnight disturbances (3.61 disturbances/night [control] vs 2.65 [post-intervention, $p=0.06$]). The interventions significantly increased sleep efficiency (61% vs 81% [PE, $p=0.01$] vs 80% [PE+CP, $p=0.04$]). Epworth Sleepiness Scale (ESS) scores trended toward increased sleepiness (8.57 [control] vs. 9.88 [intervention, $p=0.25$]).

Conclusions

A combined provider-education-and-patient-device-based intervention increases patient sleep efficiency and shows non-significant though promising trends in improved patient sleep. Future, appropriately-powered study is warranted.