Title: Evaluating vital sign frequency in a pediatric hospital: A retrospective chart review to evaluate variation and significance of vital signs during night shift

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Problem: Limiting sleep interruptions and promoting good sleep hygiene positively impacts health. In pediatrics, vital signs are taken in four-hour intervals; however, no literature exists to support this frequency. This study will describe and determine the variation in stable patients' overnight vital signs starting 24 hours after admission in medical-surgical units.

Purpose: To determine if 4am vital signs for patients admitted to medical surgical floors after the first 24 hours are significantly different from their midnight and 8am vital signs.
Hypothesis: Variation in vital signs are not significant overnight for patients hospitalized for more than 24 hours in a medical surgical unit.

Study Design: Longitudinal retrospective chart review.

Setting: St. Christopher's Hospital for Children in Philadelphia, PA. An urban, 188 bed, acute care hospital.

Population:
Inclusion Criteria: Patients one to 18 years old admitted to medical-surgical units for >24 hours and up to 5 days, from February 2021 to February 2022. "Stable" diagnoses, including orthopedics, diabetes, urinary tract/kidney infections, abscess, cellulitis, failure to thrive, asthma, gastrointestinal disorders, traumatic injuries, and migraines.
Exclusion criteria: Patients <1 or >18 years, admitted <24-hours, and not admitted to medical-surgical; with peripheral nerve or epidural blocks, primary or secondary cancer, cerebral palsy or developmental delay diagnoses.

Outcome Measures:
Primary: Four am vital signs were not significantly different from midnight and 8 am.
Secondary: Vitals signs in the abnormal range tend to stay in the abdominal range. Vital signs were statistically different between days.

Results: The data analysis was conducted on 100 subjects. To test the hypothesis, multiple iterations of generalized linear mixed model regression analysis were done. No significant variation in vital signs overnight. Variation noted between days of stay.

Conclusions: Clinically, lack of variation in overnight vital signs indicates that the benefit of sleep may outweigh information 4am vital signs provide.