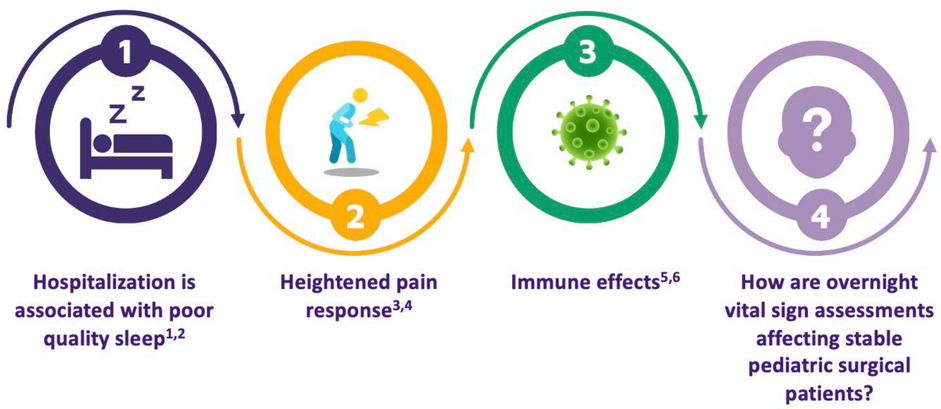
LET THE KIDS SLEEP: ASSESSING THE UTILITY OF ROUTINE OVERNIGHT VITAL SIGN ASSESSMENT IN STABLE PEDIATRIC SURGICAL PATIENTS

Morgan Brown MD, Rebecca Moreci MD MS, Hannah Robinson, Elizabeth Long, Michael Mauer, Benjamin Bienvenu, Denise M. Danos PhD, James H. Wood MD

Background



Aims

To determine the frequency with which routine overnight vital sign assessment resulted in new adverse clinical events in stable pediatric surgery patients

Measures

- Retrospective chart review of pediatric surgical patients admitted to a Children's Hospital during October 2019-2021
- Inclusion criteria = all stable postoperative patients older than 5 years old admitted for trauma or acute care surgery
- The primary outcome was number of flagged vital signs between 10 PM-6AM which resulted in clinical intervention

Results

Demographics	
Gender	
Male	63.7% (n=263)
Female	36.3% (n=150)
Race	
White	48.9% (n=202)
Black	39.2% (n=162)
Hispanic	5.3% (n=22)
Other	6.5% (n=27)

Table 1. Demographic and clinical characteristics of 413 study subjects

- 52% of patients had ≥1 flagged night time vital sign during their hospitalization
- Abnormal blood pressure was the most commonly flagged vital sign (44.1%) followed by temperature (20%)
- Of the patients with flagged vital signs, an intervention occurred in 57.4%
- The most common intervention was administration of medication (54.6%)
- Two patients (0.9%) returned to the OR
- Three patients (1.4%) were transferred to the ICU

Change Recommendations

- This is a pilot study designed to investigate the frequency of intervention based on abnormal vital signs overnight in pediatric surgical patients
- The results of this study validate the need for additional research to identify subsets of patients who would benefit from discontinuation of routine overnight vital signs

Conclusions

- Although abnormal vital signs were not uncommon in pediatric surgery patients, escalation of care or other serious interventions were infrequent
- Future research is required to identify these populations within pediatric surgery who will benefit from routine overnight vital sign assessment

References

1. Wesselius HM, Van Den Ende ES, Alsma J, et al. Quality and quantity of sleep and factors associated with sleep disturbance in hospitalized patients. *JAMA Intern Med*. 2018;178(9):1165-1171. doi:10.1001/jamainternmed.2018.2669
2. Dolan R, Huh J, Tiwari N, Sproat T, Camilleri-Brennan J. A prospective analysis of sleep deprivation and disturbance in surgical patients. *Ann Med Surg*. 2016;6:1-5. doi:10.1016/j.amsu.2015.12.046
3. Finan PH, Goodin BR, Smith MT. The association of sleep and pain: an update and a path forward. *J Pain*. 2013;14(12):1539-1552. doi:10.1016/j.jpain.2013.08.007
4. Haack M, Mullington JM. Sustained sleep restriction reduces emotional and physical well-being. *Pain*. 2005;119(1-3):56-64. doi:10.1016/j.pain.2005.09.011
5. Gamaldo CE, Shaikh AK, McArthur JC. The sleep-immunity relationship. *Neurol Clin*. 2012;30(4):1313-1343. doi:10.1016/j.ncl.2012.08.007
6. Faraut B, Boudjeltia KZ, Vanhamme L, Kerkhofs M. Immune, inflammatory and cardiovascular consequences of sleep restriction and recovery. *Sleep Med Rev*. 2012;16(2):137-149. doi:10.1016/j.smrv.2011.05.001