

How vital are vital sign checks?

A quality improvement project to reduce nighttime vitals monitoring



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BACKGROUND

- Vital signs are important clinical markers, though the need for frequent monitoring is unclear.
- Hospitalized patients will have regular vital sign checks regardless of clinical stability, which can lead to sleep interruption. This can cause increased use of pharmacological sleep aids, increased delirium, prolonged hospital stay, and higher healthcare costs.

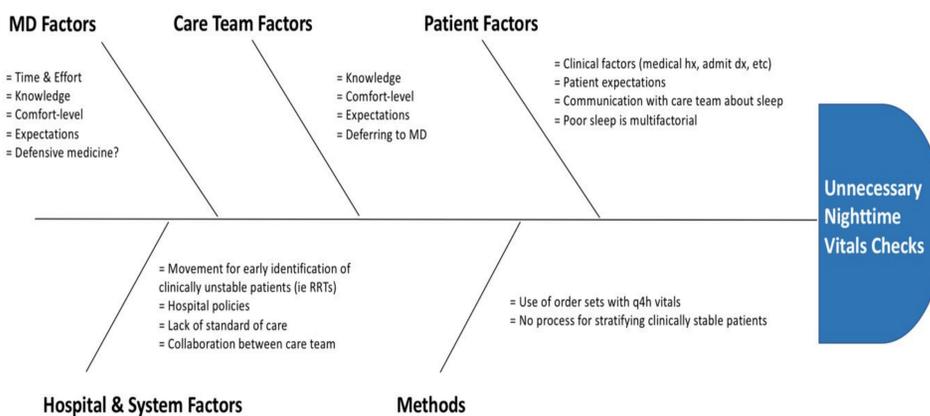
CURRENT CONDITION

- At our hospital, vital signs are checked every 4 hours, typically occurring at: 0400, 0800, 1200, 1600, 2000, 0000.
- This is the default option in admission order sets, and it is not routinely modified or reviewed by providers

AIM

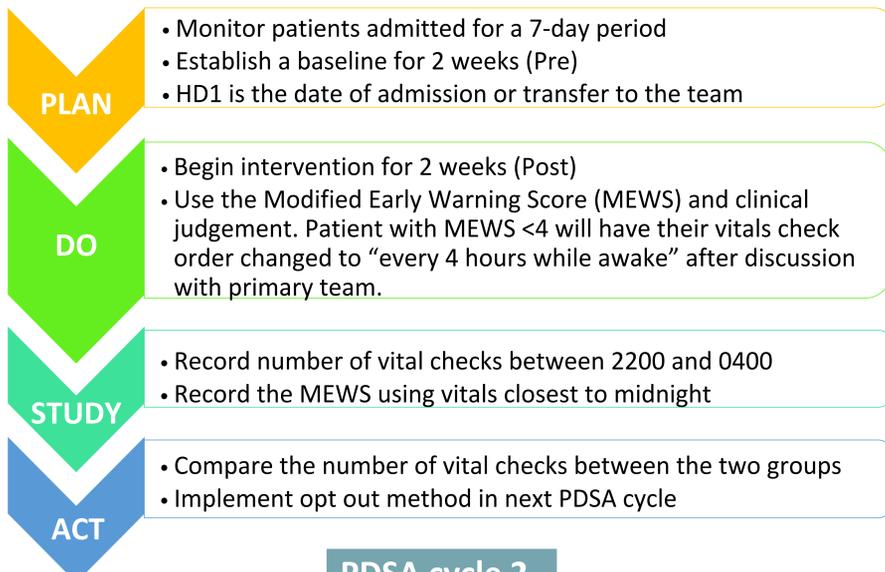
- Reduction of nighttime vital sign checks by 20%
- Decrease number of pharmacological sleep aides use in 10% of patients

ROOT CAUSE ANALYSIS

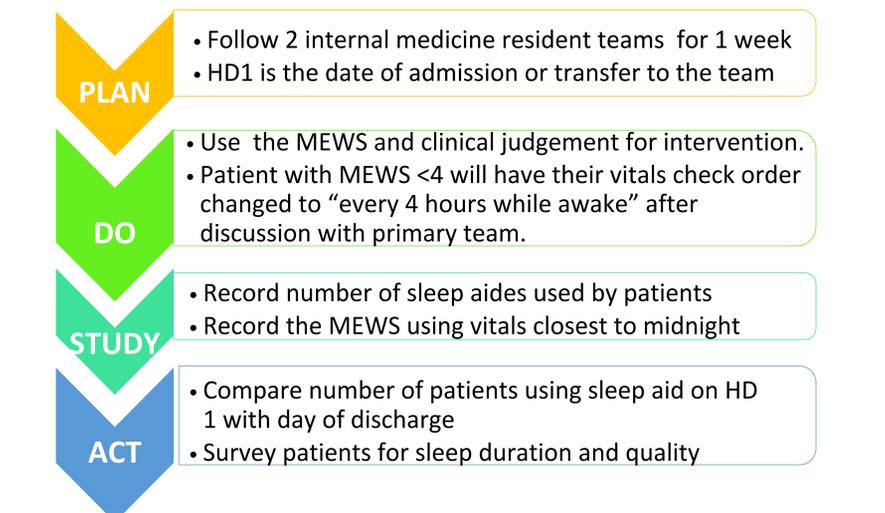


METHODS

PDSA cycle 1

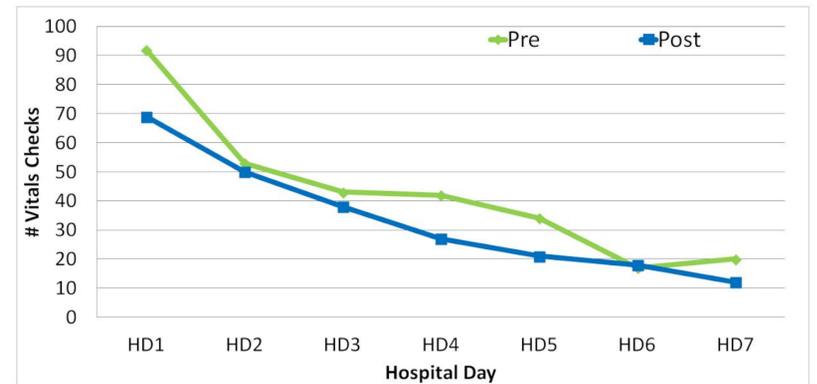


PDSA cycle 2



RESULT

Figure 1: Number of vitals checks pre and post intervention



≥25% reduction in vitals checks on HD 1, 4, & 5

Average length of stay in days

Pre = 6.6 → Post = 4.7

Figure 2: Average MEWS pre and post intervention

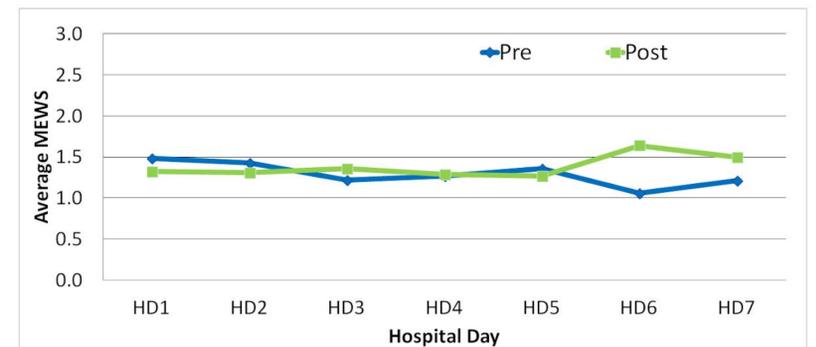
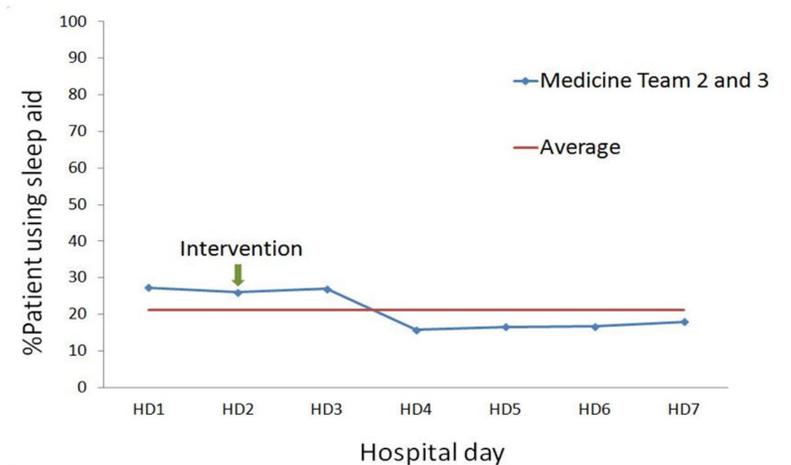


Figure 3: Percent of patients using sleep aid post intervention



LESSONS LEARNED

- The MEWS can be a tool to identify patients for which nighttime vitals checks can be reduced.
- The intervention resulted in the reduction of nighttime vitals checks on HD1, HD4, and HD5.
- There is decrease in length of stay in post-intervention group and >10% decrease in use of sleep aid, but it is unclear if the intervention alone impacted this.
- Limitations to this study: limited patient survey data, no balancing measures, and no coordination with the care team as patients still had vitals checks despite modification of orders.

FUTURE DIRECTIONS

- Collaboration and education with care providers, modify order sets to include option for no nighttime vitals
- Determine if the intervention can improve subjective sleep quality and/or reducing delirium

References

- Zeitz K, McCutcheon H. *Int J Nurs Pract*, 2003; 9(5): 272-9.
- Yoder JC, et al. *JAMA Int Med*, 2013;173:1554-5.
- Storm-Versloot MN, et al. *Jour Nurs Scholar*, 2013; 46(1): 39-49.
- Martin JL, et al. *Sleep*, 2011; 34(12):1715-21.
- Manian F & Manian C. *Am J Med Sci*, 2015; 349(1): 56-60.
- Subbe CP, et al. *QJM*, 2001; 94(10): 521-6.