

**Title:**

**Successful decrease in nuisance (SpO2) alarms to promote healing**

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**Purpose & Rationale:** Our surgical progressive care unit is committed to creating a quieter healing environment. During rounding, patients often mentioned monitor alarms as an obstacle to rest. Review of unit central monitoring alarm data demonstrated frequent non-actionable oxygen saturation alarms for patients on room air (upwards of 10 alarms per hr). Upon evaluation with the interdisciplinary team, we realized that unnecessary continuous monitoring was contributing to noise. Intermittent assessment of SpO<sub>2</sub> in stable patients on room air eliminates opportunities for nuisance alarms.

**Research Question:** Does a brief educational intervention that coaches RNs to review each day the appropriateness of continuous vs intermittent SpO<sub>2</sub> assessment for patients on room air reduce the percentage of patients continuously monitored?

**Synthesis of Review of Literature:** The Joint Commission approved clinical alarm safety as a National Patient Safety Goal in 2014, indicating that non-actionable alarms contribute to staff alarm fatigue and impede a quiet, healing environment for patients. In 2013, the AACN issued an Alarm Management Practice Alert that identified benefits of SpO<sub>2</sub> monitoring review, RN education, and use of inter-professional teams to reduce the number of non-actionable alarms on a unit. An integrative review of the literature (Cvach, 2012) demonstrated that excessive alarms may hinder patient recovery.

**Methods/Procedures:** The Plan-Do-Study-Act cycle was used for this quality improvement project. An educational intervention was designed to encourage staff nurses to collaborate with medical providers in a daily review of the necessity of continuous SpO<sub>2</sub> monitoring for patients on room air and to discontinue unnecessary monitoring as soon as clinically indicated. Convenience sampling was used to collect the frequency of continuous SpO<sub>2</sub> monitoring before and after the educational intervention. Significance of the RN intervention was determined with chi-square analysis. Sampling/analysis was repeated 6 months after implementation to determine sustainability. HCAHPS survey quiet scores were reviewed.

**Results:** Prior to the intervention in January 2015, 40% (N=107) of the patients on room air were being continuously monitored via an alarmed device. The majority (55%) of these devices triggered 'Desat' alarms, of which 96% were non-actionable (faulty probe, poor conduction, excessive movement). Continuous SpO<sub>2</sub> monitoring significantly decreased from 40% to 10% (N=68) after the intervention ( $\chi^2 (1, N=175) = 18.2047, p=.00002$ ). This significant positive

effect was sustained 9 months later (11%, N=60;  $X^2(1, N=167) = 13.0686, p=.0003$ ). Annual HCAHPS quiet scores on our unit improved from 47.4 (2014 – pre intervention) to 54.9 (2015 – post intervention).

**Discussion/Application to Practice:** An evidence-based solution encouraging staff nurse daily triage of SpO2 monitoring (continuous vs intermittent) significantly reduced the number of continuously monitored patients on room air, thereby eliminating nuisance alarm opportunities. Assessment of sustained improvement has not required re-education, however the unit champion engages in regular discussion with fellow RNs around opportunities to remove unnecessary continuous SpO2 monitoring. The increased trend of HCAHPS quiet scores supports our efforts toward improving the healing environment on our unit and is suggested for other central monitoring units. Reducing the false-alarm rate lessens alarm fatigue for nurses, thereby promoting a safer environment for patients.

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