

Clinical Alarm Management: Improving Alarm Responsiveness and Decreasing Alarm Fatigue

Team Leader: Jaclyn Hughes BSN RN CCRN

Team Member: Grace Song BSN RN CCRN CPAN

New York Presbyterian, New York, NY

Abstract Background Information: In the Post-Anesthesia Care Unit (PACU), clinical alarms from monitors, IV pumps, and other devices are essential for patient safety, but their high frequency and occasional false activation contribute to excessive noise, staff desensitization, and alarm fatigue. Staff reported that constant alarms disrupted workflow, decreased concentration, and increased stress, all of which may compromise patient safety.

Objectives of Project: The purpose of this project was to (1) enhance nursing responsiveness to alarms, (2) reduce false and unnecessary alarm frequency, and (3) mitigate alarm fatigue through targeted education and policy reinforcement.

Process of Implementation: Baseline data were collected using the CDC/NIOSH Sound Level Meter application to measure alarm duration, intensity (in decibels), and response times. The average ambient noise level was 49.7 dB, increasing to an average of 61.2 dB during active alarms lasting a mean of 11.5 seconds. Data included alarm type (high-priority/red, medium/yellow, or technical/blue), who silenced the alarm, and how quickly. Staff were also surveyed on alarm frequency, confidence in troubleshooting, perceived impact on noise, and overall alarm fatigue.

Education sessions were then provided, focusing on proper lead placement, individualized alarm parameter adjustment per policy ($\pm 10\%$), and shared responsibility for alarm management. Hospital policies and evidence-based strategies were reinforced during staff huddles and in-service presentations.

Statement of Successful Practice: Following implementation, staff demonstrated increased awareness of alarm-management principles, greater confidence in troubleshooting, and improved response times. The initiative fostered a stronger culture of shared accountability for alarm management across all team members.

Implications for Advancing the Practice of Perianesthesia Nursing: Effective alarm management directly enhances patient safety and staff well-being. Reinforcing evidence-based alarm-management strategies in the PACU can reduce noise pollution, minimize alarm fatigue, and allow nurses to maintain sharper clinical focus and more meaningful patient engagement ultimately advancing perianesthesia nursing practice through a safer, calmer recovery environment.