

Peace in the PACU

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Introduction: Open-bay Post Anesthesia Care Unit (PACU) environments can be loud and overstimulating for patients, caregivers, and healthcare workers. Literature describes noise interferes with the patient's surgical recovery and increases the need for analgesia. In patients and healthcare workers, physiologic (increased heart rate, blood pressure) and psychologic (sleeplessness, stress) changes are associated with increased noise levels as well as medical errors, miscommunication, and surgical site infections.

Identification of the Problem: Reports of a noisy, loud pediatric PACU environment has been identified as an area of improvement by healthcare workers, patients, and caregivers.

Purpose of the Study: Evaluate the effects of noise-reducing curtains on PACU noise level and noise perception by caregivers.

Methodology: Institutional Review Board approval was obtained. A pre/post- intervention study design was employed to evaluate the effectiveness of noise-reducing curtains on noise level and caregiver perception. Noise decibels were measured with calibrated dosimeters. An acoustical assessment was performed and caregiver perception of noise was measured by anonymous surveys.

Results: Following noise-reducing curtain installation no statistical significance in overall decibel levels was observed, however intrusive noise was reduced by 35% - 50%. Additionally, 54.7% of caregivers reported the area around the bay was never quiet before installation compared to 15.5% after noise-reducing curtain installation.

Discussion: This study was done to validate results from a 2019 study in the same PACU where a statistically significant reduction in decibel levels was observed following noise-reducing curtain installation. This study did not validate an improvement in decibel levels likely due to pandemic-related effects such as decreased surgical volumes and an intentional reduction of caregivers and healthcare workers at the bedside. However, this study does validate the use of noise-reducing curtains to improve noise perception.

Conclusion: Noise and sound are multi-dimensional. Though a statistically significant reduction in noise levels was not observed, sound transmission, speech privacy, and reverberation measurements revealed statistically significant reduction in noise perception. Caregiver surveys supported the use of noise-reducing curtains in providing a more therapeutic environment.

Implications for perianesthesia nurses & future research: Literature describes noisy hospital environments lead to negative outcomes for patients, caregivers, and healthcare workers. Noise-reducing curtains are an evidence-based intervention that can improve noise perception in PACUs.