

Can You Turn It Down? Assessing Noise and Distractions from Music in the Operating Room

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Introduction: It has been noted that music has become a universal phenomenon in the operating room.¹ Music may serve as a distraction and pose a safety hazard by impairing alarm detection, communication and concentration.¹⁻³ This hazard has been acknowledged in a formal manner by statements on distraction and noise in the operating room by the American College of Surgeons (ACS), American Society of Anesthesiologists (ASA) and the Association of periOperative Registered Nurses (AORN).⁴⁻⁶ More specifically, noise adversely affects patient safety by impairing alarm detection, communication, and cognitive processing.^{3,7-11}

The acoustics in the operating room are generally poor *with* flat walls that cause sound reverberation. In addition, surgical masks preclude lip reading in acoustically suboptimal environments.¹² Noise levels in operating rooms frequently exceed Occupational Safety and Health Administration (OSHA) safe exposure standards of 45 dB.¹³ A previous study found that noise levels in trauma operating rooms had average noise levels almost double the recommended EPA level.¹⁴ Other rooms which are prone to high levels of noise include orthopedic and neurosurgery rooms, where peak sound levels intermittently exceed 100dB more than 40 percent of the time. As a reference, noise on a busy freeway is 110dB. 1 Studies focused on anesthesia have found that the noisiest periods during surgery are associated with induction and emergence of anesthesia.¹⁵

It is postulated that music levels may interfere with managing alarms. This is of additional importance given The Joint Commission in 2015 cited alarm management as a top priority and more recently included it in *Quick Safety* to raise awareness. To help address this potential safety issue, technology has been developed (CanaryBox™) that can automatically adjust intraoperative music at clinically appropriate times.

The goal of this study was to assesses anesthesiologists' perceptions to music in the operating room in order to determine the perceived clinical need for technology that automatically adjusts music volume.

Methods: A survey was electronically sent out to anesthesiologists at a large academic medical center. Surveys were completed anonymously and data was aggregated for analysis.

Results: 84% of respondents admitted to have experienced alarm fatigue. 64% of respondents felt that music can make it difficult to hear, discern information, or communicate effectively. 52% of respondents felt that music in the operating room can be distracting, increase the risk for error, or compromise safety. Approximately 1 out of 3 responded that they felt uncomfortable asking for the intraoperative music to be turned down. 48% responded that music reduces their ability to detect signals from patient monitors.

Conclusion: Approximately half of anesthesiologists surveyed felt that music reduced their ability to detect vital sign changes. This finding suggests that intraoperative music is a recognized patient safety concern. The data suggest that anesthesiologists recognize the clinical problem and are in need of solutions to overcome this safety issue. In light of these findings, solutions that could automatically adjust music levels when clinically appropriate may prove valuable.

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