Managing Operating Room Noise and Distractions

Diligent concentration, vigilance, and clear communication are paramount in completing the intricate and complex tasks required in surgery. However, noise and distractions that occur in the operating room (OR) can compromise patient safety and potentially increase the risk of errors.

To manage noise and distractions, it is important to identify their sources in the OR. Sources may include medical equipment devices (e.g., clinical alarms), fixed communication devices (e.g., overhead announcements), environmental devices (e.g., HVAC systems), electronic activities by OR staff (e.g., internet browsing), and healthcare personnel entering and leaving the room.

Commonly cited distractions include conversations unrelated to the surgical procedure, telephone calls, technology use, and music.[1] These noises might lead to ineffective communication; diminished signal and speech intelligibility; poor performance of complex tasks; poor cognitive function and concentration; and stress, fatigue, and anxiety.[2]

One strategy to reduce noise and distractions is to enact a protocol similar to the sterile cockpit rule, in which aircraft crew members are prohibited from engaging in any activity except those duties required for the safe operation of the aircraft during critical phases of flight. In terms of the OR, this strategy prohibits surgical staff members from engaging in any activity except their specific duties during critical times of a surgical procedure.[3]

A few hospitals in the United States use data obtained from new technology — an OR Black Box — to improve safety. An OR Black Box is a system of sensors and software that interacts with video, audio, patient vital signs, and data obtained from medical devices. Data from a Black Box may be used to help identify noise and distractions in the OR as well as address other safety hazards.[4]

Beyond applying the sterile cockpit approach and considering the potential use of an OR Black Box, the following strategies can help mitigate the risks associated with noise and distractions in the OR.[5]

1. Use a sound level meter or a dosimeter to assess whether the OR has a noise problem. The Environmental Protection Agency's recommended level for continuous background noise in hospitals is 45 decibels, but this level can still interfere with concentration. A study measuring noise levels in OR trauma procedures found an average level of almost double the recommended level. The World Health Organization recommends that the level of continuous background noise in hospitals should not exceed 30 decibels.

2. Consider the OR's physical environment and what can be done to lessen noise. For example, advise surgical staff to place metal instruments onto trays as quietly as possible. Also, emphasize reducing transmitted noise into the OR as part of designing healthcare facilities when they are being conceived and maintained.

3. Educate all surgical staff members about the sources of noise in the OR and how they affect patient and staff safety. If possible, incorporate the risks of noise and distraction into training programs for surgeons and perioperative personnel.

4. Minimize distractions and noise that do not serve a clinical function, and carefully consider rules related to music in the OR. Research has shown that music can be beneficial to the surgical team and the patient, but it also can contribute to noise pollution.

5. Create a no-interruption zone in the OR where nonessential conversation and activities are prohibited during the critical phases of surgical procedures.

6

Control/limit the amount of healthcare personnel entering and exiting the OR during surgery to minimize interruptions and potential distractions.

7

Direct surgical staff members to use fixed communication devices (such as overhead announcement systems and landline telephones) only for essential communication in the OR, and ensure that those devices are operated on the lowest volume available.

8

Consider simulation training to model specific strategies for reducing noise and distractions (such as equipment use and communication techniques).

9

Foster a culture of safety in which surgical staff members feel empowered and comfortable to ask for reduced noise or silence when noise levels are high.

10

Devise specific guidelines and policies about technology use in the OR, including guidance related to personal electronic devices. Educate surgical staff members about these guidelines and policies, and provide regular reminders.

11

If surgical staff members are permitted to have mobile communication or electronic music devices in the OR, then direct them to silence ring tones and forward calls to voicemail. Ask staff members to minimize any tones that sound similar to OR monitors and alarms.

12

Consider limiting internet access in the OR only to patient-care-related websites to avoid discretionary browsing if surgical staff members are permitted to use mobile communication devices in the OR.

Resources

- American College of Surgeons: Statement on Distractions in the Operating Room
- American Hospital Association: How OR 'Black Boxes' Are Helping to Improve Safety
- American Society of Anesthesiologists: Statement on Distractions
- Anesthesia Patient Safety Foundation: Distractions in the Operating Room: An Anesthesia Professional's Liability?
- Association of periOperative Registered Nurses: AORN Position Statement on Managing Distractions and Noise During Perioperative Patient Care
- Becker's Hospital Review: 'Black Boxes' Make Their Way into Hospital ORs
- OR Management News: Distractions in the OR: How to Identify and Manage Them
- OR Today: Reducing OR Noise
- The Joint Commission: Quick Safety 35: Minimizing Noise and Distractions in the OR and Procedural Units

Endnotes

[1] Pellegrini, C. A. (2017). Noise and distractions in the OR can affect patient, staff safety. *Bulletin of the American College of Surgeons*. Retrieved from https://bulletin.facs.org/2017/10/noise-and-distractions-in-the-or-can-affect-patient-staff-safety/

[2] Ibid.

[3] Ibid.

[4] Kallis, M. P., Petrick, A., & Gadaleta, D. (2021, February 1). Raising the standard: The effect of operating room distractions and how objective data can identify ways to improve surgeon focus and patient outcomes. *Bariatric Times, 18*(2), 12-13. Retrieved from https://bariatrictimes.com/effect-of-operating-room-distractions/

[5] Pellegrini, Noise and distractions in the OR can affect patient, staff safety; Thomas, B. J. (2017). Distractions in the operating room: An anesthesia professional's liability? *APSF Newsletter, 31*(3), 59–62. Retrieved from www.apsf.org/article/distractions-in-the-operating-room-an-anesthesia-professionals-liability/; Association of periOperative Registered Nurses. (2020). *AORN Position Statement on Managing Distractions and Noise During Perioperative Patient Care.* Retrieved from www.aorn.org/docs/default-source/guidelines-resources/position-statements/patient-workplace-safety/posstat-safety-distractions-and-noise.pdf; The Joint Commission. (2017, August). Minimizing noise and distractions in the OR and procedural units. *Quick Safety, 35.* Retrieved from www.jointcommission.org/resources/news-and-multimedia/newsletters/newsletters/quick-safety/quick-safety-issue-35-minimizing-noise-and-distractions--in-the-or-and-procedural-units/; Bahr, K. (2022, October). Music in the operating room. *The Surgical Technologist, 54*(10), 446–451. Retrieved from www.ast.org/uploadedFiles/Main_Site/Content/Publications/Surgical_Technologist_October2022.pdf; Peng, L., Chen, J., & Jiang, H. (2022). The impact of operating room noise levels on stress and work efficiency of the operating room team: A protocol for systematic review and meta-analysis. *Medicine, 101*(3), e28572. https://doi.org/10.1097/MD.0000000000028572