

AORN Position Statement on Managing Distractions and Noise During Perioperative Patient Care

POSITION STATEMENT

AORN believes:

- A multidisciplinary team approach is required to reduce distractions and noise in perioperative settings and create a safer environment for patients and perioperative team members.
- Distractions and noise that do not serve a clinical function should be minimized.
- During critical phases of the surgical procedure, surgical team members should create a no-interruption zone in which nonessential conversation and activities are prohibited.
- Interventions to reduce distractions and noise should be adaptable to all areas where invasive procedures are performed (eg, traditional ORs, ambulatory surgery centers), and the actions included should be applicable to the specific practice and team members.

RATIONALE

The perioperative setting is one of the most complex work environments in health care and is an information-intensive environment in which performance and safety are heavily reliant on the smooth flow of information.^{1,2} Distractions and noise contribute to the complexity of the care environment.³

Distractions occur frequently in the perioperative setting. Intrinsic sources of distraction include noise and alarms from monitors; equipment; and communication relevant to the patient, procedure, and environment. Extrinsic distraction sources include personal electronic devices, pagers, phone calls, computers, traffic, visitors, and communication from personnel outside the OR.^{4,5}

The use of personal electronic devices (eg, mobile phones, tablets, laptop computers) has greatly increased and may distract caregivers from focusing on the patient.⁶⁻⁸ Ring tones and alarms from personal electronic devices contribute to distraction.⁶ Undisciplined use of cellular devices in the OR by any member of the perioperative team may be distracting and may affect patient care.^{4,9} In a survey of perfusionists, 55.6% reported they had used a cell phone while performing cardiopulmonary bypass, and 49.2% reported sending text messages during procedures.¹⁰ Distractions increase the possibility of adverse patient outcomes (eg, incorrect counts¹¹; wrong procedure, side, or site)¹² by diverting a team member's attention from the current task, which could lead to omissions, prolonged procedure duration,^{13,14} and mental lapses.^{3,15-20}

Excessive noise in the health care environment may minimize the ability to communicate effectively, make it difficult to understand content, and contribute to miscommunication^{15,21} that could potentially lead to an error.²²⁻²⁴ The Environmental Protection Agency (EPA) recommends that the level of continuous background noise in hospitals not exceed 45 decibels (dB) during the day. The World Health Organization recommends that environmental noise levels not exceed 30 dB.²⁵ The Occupational Safety and Health Administration permissible exposure limit (PEL) for noise is 90 dBA for all workers for an 8-hour day.²⁶ Studies measuring noise levels during surgery demonstrate high noise levels, with many exceeding the

EPA recommendation.²⁷⁻³⁴ Specialties in which powered surgical tools and impact-producing equipment are used (eg, orthopedics³¹, otolaryngology³³) demonstrated higher noise levels than other specialties.³⁰⁻³³ Noise has been linked to poor task performance³⁵⁻³⁷; poor concentration^{38,39}; and the inability to perform complex, problem-solving tasks. Working in a noisy environment has been associated with physical and psychological symptoms, including tachycardia⁴⁰, fatigue, illness and injury, irritability, anxiety, emotional exhaustion, job dissatisfaction, stress,^{22,23,41} emotional exhaustion,²² and burnout.²²

Noise is also a distraction that interrupts patient care and potentially increases the risk for error.⁴² In a prospective study that measured noise and distraction in the OR during 50 trauma procedures, the average noise level was 85 dB, with a range of 40 to 130 dB.⁴³ The average number of interruptions and distractions was 60.8 for each surgery, with a range of five to 192. The main causes of distractions and interruptions were team members entering and leaving the room, equipment alarms, parallel conversations, and telephones or pagers.⁴³ Studies by Kurmann et al,⁴⁴ Dholakia et al,⁴⁵ and Tschan et al⁴⁶ found that increases in noise (eg, talking during the closing phase of a surgical procedure⁴⁵) may be associated with increases in surgical site infection.

Factors that contribute to distractions and noise levels in the perioperative practice setting may include

- patient care activities:
 - medical records (eg, charting, viewing test results)
 - clinical alarms^{40,43,47}
 - monitors^{23,40}
 - medical equipment and devices (eg, lasers, radiology equipment, waste management, smoke evacuators, forced-air warming units)⁴⁰
- behavioral activities:
 - conversations (essential and nonessential)
 - personnel moving in and out of the room^{43,48-50}
- mechanical (physical) environment:
 - heating, ventilation, and air conditioning systems
 - metal equipment (eg, instruments, basins, rigid containers)^{23,40}
 - powered surgical instruments^{40,51,52}
 - moveable equipment
 - equipment operations and troubleshooting^{14,19}
 - acoustic surfaces on floors, walls, and ceilings^{41,53}
 - pneumatic tube systems^{22,47}
- technology:
 - telephones (eg, smart phones, cell phones,^{54,55} land lines)^{43,48,56}
 - wireless devices (eg, tablet computers, personal digital assistants, personal gaming devices)²⁰
 - wireless communication systems^{20,57}
 - paging systems (eg, personal pagers,^{48,56} intercoms, overhead paging systems)^{20,43}
 - computers
 - music devices (eg, radios, subscription music services)^{48,51,52}
- electronic activities:
 - email
 - texting
 - use of applications and social media
 - Internet searches
 - games

Identifying critical phases of a surgical procedure may assist surgical team members in ensuring nonessential conversation and activities do not occur.^{20,58,59} Critical phases are times during the patient's surgical experience when any activity could distract surgical team members or interfere with the safe conduct of their duties. Critical phases may include time-out periods, critical dissections, surgical counts, medication preparation and administration,⁶⁰ confirming and opening of implants, induction⁶¹ and

emergence from anesthesia, and care and handling of specimens.⁵⁹ The reduction in activity and noise during the critical phases has been referred to as a no-interruption zone,⁶² sterile cockpit,^{43,58} zone of silence,⁴⁷ and red zone.²⁰ Surgical team members should give their full attention to performing their responsibilities during critical phases. Critical phases may occur at different times for different team members.

Operative and invasive procedures are high-risk activities that require vigilance, concentration, and situational awareness.¹⁵ Distractions and noise can cause disruptions in communication and teamwork, which may contribute to errors that can compromise patient safety.^{2,63} Distractions and noise cannot be eliminated completely from the perioperative environment; therefore, AORN is committed to advocating for a controlled environment in which distractions and noise are minimized to the greatest extent possible.^{5,43}

GLOSSARY

Decibel (dB): A logarithmic unit that measures the intensity of sound.

Distraction: That which diverts attention from or prevents concentration on a task.

Interruption: An unplanned or unexpected event that causes a discontinuation of a task or performance.

Noise: Any sound that is undesired or interferes with the ability to hear.

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ORGANIZATIONAL RESOURCES

American Association of Nurse Anesthetists

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