AORN

POSITION STATEMENT

Noise in the Perioperative Practice Setting

PREAMBLE

Perioperative registered nurses, along with other surgical team members, routinely must deal with the issue of elevated and excessive noise and its effect on patient safety. The perioperative setting is one of the most complex work environments in health care.[1] Like other complex systems, the perioperative setting is information intensive with performance and safety relying heavily on how well information flows.[1]

AORN recognizes that noise is unavoidable in the perioperative work environment.

Limited research and information exist on sound levels present in operating rooms and the related effects on patients and surgical team members.[2] In acute care hospitals, the average daytime sound level grew from 57 decibels (dB) in 1960 to 72 dB in 2005.[3]

The Environmental Protection Agency (EPA) suggested levels of 45 dB during the day and 35 dB at night in hospitals for continuous background noise.[4] Various accrediting agencies (eg, Joint Commission, National Integrated Accreditation for Healthcare Organizations) address noise control in health care organizations.[5,6]

The effects of noise on human performance have been studied more extensively in controlled laboratory settings and non-health care settings such as factories. In the controlled laboratory setting, noise has been associated with poor task performance, poor concentration, and greater anxiety among subjects. The ability to perform complex, problem solving tasks may be particularly effected by noise and a lack of personal control over noise worsens the effects. Several large factory-worker studies have shown that noise is associated with job dissatisfaction, irritability, fatigue, illnesses, and injuries.[7]

Noise is a distraction that interrupts patient care and potentially increases the risk of error.[4] With team members wearing personal protective equipment (PPE), noise may minimize the ability to communicate effectively, make it difficult to understand content, and contribute to miscommunication. The American Society of PeriAnesthesia Nurses' (ASPAN) "Position statement on safe medication administration" supports the principle that work environments should restrict unnecessary noise and distractions in the medication preparation area.[8]

Patients recovering during the immediate postoperative period have expressed dissatisfaction with increased noise levels and overhearing staff members' conversations. Improvement in patient satisfaction scores can be achieved when the noise level is decreased in the postanesthesia care unit (PACU).[9]

Contributing factors to the level of noise generated in the perioperative practice setting are

- beepers;
- cell phones;

- clinical alarms;[4,5]
- communication;[1]
- electronic music devices (eg, radios, CD players);
- environment (eg, HVAC system and reflective surfaces on floors, walls, and ceilings);[4]
- medical equipment and devices (eg, radiology equipment, waste management system, smoke evacuator, drills);[4]
- monitors;
- overhead pages and announcements;[4]
- pneumatic tube systems;[5] and
- telephones.[3]

POSITION STATEMENT

Operative and invasive procedures are high risk activities; therefore, AORN is committed to promoting a noise-controlled environment that minimizes interruptions and distractions.[10]

AORN believes a team approach is required to reduce the level of noise in order to create a safer environment for patients and perioperative team members.

AORN recognizes the numerous types of settings in which operative and invasive procedures may be performed. These practice settings include operating rooms, ambulatory surgery centers, cardiac catheterization suites, endoscopy suites, radiology departments, emergency departments, and the patient's bedside. AORN believes that noise-reduction interventions in the following domains should be considered when developing an action plan adaptable to these various practice settings.

Administrative interventions

- Promote a team effort to brainstorm noise-control strategies.[5]
- Evaluate communication methods and devices used in the practice setting.
- Use multidisciplinary meetings for problem resolution of noise issues that effect patient safety and the work environment.[5]
- Request that perioperative team members leave their cell phones and pagers with someone outside of the procedural environment whenever possible.[4]
- Ensure cell phones and pagers that must be answered are identified properly.
- Mute or stand-by all non-essential communication devices during surgery.
- Limit external communication to urgent or emergent conversations.
- Limit the type of music and specify a volume setting.
- Conduct change-of-shift reports in an enclosed room to ensure patient confidentiality and to minimize noise distraction for patients and personnel.[5]

Engineering/facilities and biomedical interventions

- Measure noise levels in the work environment to provide empirical data to support noise-reduction strategies.[4]
- Use risk criteria to address the effect of demolition, renovation, or new construction projects on noise and vibration.[5]
- Use building supplies that reduce noise during new construction or renovation.
- Conduct a noise-impact evaluation as part of every renovation or construction project and equipment purchase.

- Set trigger points appropriately on monitors.[3]
- Maintain door closures and lubricate doors as needed.
- Repair and oil squeaky equipment.
- Replace noisy metal carts with plastic ones.[3]
- Use plastic- rather than metal-lidded receptacles.
- Use trash and linen receptacles that have a damping system to close the lid slowly.[3]
- Encourage vendors to develop quieter, environmental-service product lines.
- Promote research and development on noise-level, feedback-monitoring engineering controls.
- Investigate less distracting ring-tone alternatives.

Behavioral interventions

- Reduce noise by increasing staff member awareness via education and new employee orientation.[5]
- Educate environmental service personnel about noise sources and reduction strategies during cleaning.[3]
- Identify sources of noise in the practice setting to determine whether, how, and if these noises can be lessened.
- Assess one's own voice tone and volume and moderate appropriately.
- Expect every team member to be personally responsible for managing how much noise he or she generates (eg, minimize or eliminate irrelevant conversation during procedures).[4]
- Limit telephone conversations to brief communications.
- Practice telephone etiquette protocol when answering a call or page.
- Use structured communication methods (eg, standardized communication templates to disseminate pertinent patient care information).[1,11]
- Minimize the number of people present during procedures and frequency of door openings.[12]
- Establish times when noise levels routinely should be reduced (eg, induction, emergence).[4]
- Lower ring-tone volume on telephones and cell phones.[3]
- Limit overhead pages with the use of text paging.
- Place pagers on silent mode whenever possible.
- Display "Quiet, Please" posters in the practice setting to remind health care workers to reduce noise.[3]

GLOSSARY

Decibel (dB): a logarithmic unit to measure the intensity of sound.[4]

Distraction: that which divides the attention or prevents concentration.[13]

Noise: any sound that is undesired or interferes with the ability to hear.[14]

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Original approved by the House of Delegates, Chicago, Illinois, March 2009
Sunset March 2014