Time to tone it down: Strategies for managing noise, distractions

“O ur society has become a lot louder, and we tolerate a lot more noise,” says Verna Gibbs, MD, director of NoThing Left Behind and professor of clinical surgery, University of California, San Francisco. That includes the OR, where phones, overhead pages, alarms, suction, ventilation equipment, medical devices such as drills, electronic music devices, conversation (both essential and extraneous), and much more push noise levels higher.

The AORN position statement, Noise in the Perioperative Setting, recognizes that noise is “a distraction that interrupts patient care and potentially increases the risk of error.” The statement calls for a team effort to reduce noise. OR management teams need to understand the danger of noise and strategies for reducing it.

The danger of noise
Noise poses several threats: hearing loss, negative physiologic changes such as increased cortisol levels, patient and family anxiety, and distraction.

Yet, often not enough is done to dispel those threats according to Michael H. Fritsch, MD, FACS, who has studied the issue. “You need to recognize you have a problem before you can do something about it,” he says. “Too often, OR staff and physicians don’t really seem to care about the noise.”

But they should care. “The ear is a wear and tear organ,” says Dr Fritsch. Although clinicians readily understand potential hearing damage from sources such as jet flight or a jackhammer, they fail to appreciate the dangers in their own ORs. In a 2010 study published in Otology & Neurotology, Dr Fritsch and colleagues reported that instrument noise levels for average-length surgical cases may exceed Occupational Safety and Health Administration (OSHA) and National Institute for Occupational and Health (NIOSH) recommendations. Orthopedics, neurosurgery, and otolaryngology are specialties particularly at risk. Commonly used instruments generated frequencies as high as 131 dB, adding to the typical baseline noise level of 53 dB.

Higher frequency noise is the loudest and therefore the most damaging, but even occasional but recurrent loud sounds can add up to a serious problem.

Potential harm isn’t limited to the ears. A pilot study of 35 patients published in the British Journal of Surgery found higher noise levels during elective abdominal procedures were associated with an increased risk of surgical site infections during 30 days after surgery. Talking about nonsurgical topics significantly increased noise levels.

What’s acceptable?
Although experts agree noise causes harm, determining acceptable noise levels is challenging because OSHA and NIOSH use different metrics to determine noise exposure limits. Dr Fritsch recommends NIOSH standards because they are more protective; maximum noise exposure limits are 8 hours at 85 dB.

A 2010 review article in the Journal of PeriAnesthesia Nursing reported average noise
levels in the OR between 51 and 75 dB, with maximum levels between 80 and 119 dB. The noisiest period was anesthesia induction, with staff activities the biggest source of noise.

Dr Gibbs says an additional problem in managing noise is “normalization of deviance.” For example, people start performing a deviant behavior, such as playing music in the background at too high a volume. As a result, equipment alarm volumes need to be set higher.

“Humans get used to talking louder in order to be heard. People don’t recognize that they are shouting at each other,” says Dr Gibbs. “The deviant behavior becomes normal.”

Changing the environment
Many ORs are changing the environment to reduce noise. Some hospitals have piped in calming music in the hallway that tends to reduce conversation. But music in the individual OR poses a problem for Dr Gibbs, who doesn’t allow music to be played while she is operating. She sees music “not as a distraction but as a source of abrasion. Music is a way the dominant members of the hierarchy exert control over the others.”

She adds, “Why should the surgeons be the ones to choose the music? The air is public space.”

If the surgeon likes country music, and the staff doesn’t, “it creates a hostile environment for everyone else in the room.” Music can be beneficial for patients, so she suggests having them use headphones so they can listen without disturbing others.

Designing out noise
ORs like Memorial Sloan-Kettering Cancer Center in New York are using design to reduce noise.

“We have a main corridor that we only use for transport; we call it ‘5th Avenue,’” says Michelle Burke, MSA, RN, CNOR, associate hospital administrator and director of nursing, perioperative services.

“All the OR rooms are set back from that corridor. It reduces hustle and bustle.” The design of the main postanesthesia care unit (PACU) with pods of 3 to 4 beds rather than a single open unit also cuts down on noise.
Enlisting technology

Technology can create noise, but it’s also being used to reduce it. Memorial Sloan-Kettering OR staff and anesthesiologists use the Vocera wireless communication system (www.vocera.com) to communicate and eliminate overhead pages.

Aileen Killen, PhD, RN, director of patient safety at Memorial Sloan-Kettering and former director of the OR, says that technology integrated into the hospital’s system also helps avoid distraction. “When you accept a call from pathology, for example, the system automatically turns off the music in the OR.”

Methodist West Hospital, West Des Moines, Iowa, implemented the Responder 5 Nurse Call communication system (www.rauland.com/responder5.cfm) in its surgical department.

“It has far exceeded our expectations,” says Laurie Johnson, RN, executive director for the orthopedic service line and surgical services. “We haven’t had an overhead page in the OR for 18 months.”

The hospital, which focuses primarily on orthopedics, assigns the Responder Nurse 5 system’s wireless phones to a role as opposed to an individual; for instance, the x-ray technician assigned to the OR carries a phone so he or she can be easily reached.

Each OR has an interface panel consisting of touch-screen buttons (illustrations, p 12). Depending on what button is selected, the system sends text messages to the appropriate phones. For instance, the “Prep” button summons the patient care technician. When it’s room turnover time, the nurse pushes a button to send text messages to staff who assist with the turnover or need to know it’s occurring.

Tools such as Vocera and the Responder 5 Nurse Call can be pricey, but not all environmental solutions require a large investment.

Tracking the yacking

“The preop area is the biggest noise producer,” says Jane Wagner, BSN, RN, CNOR, director of perioperative services for Shea Medical Center in Scottsdale, Arizona. “It’s where everyone congregates, including family members, surgeons, nurses, and anesthesiologists.” The area now has a wall-mounted Yacker Tracker (http://yackertracker.com), which lights up when a preset noise level is reached.

“We can set it to whatever sensitivity we want,” says Wagner. “When it lights up, you can just point to it, and you don’t have to say anything.” This low-cost solution — the basic model is well under $100 — originated in the classroom where teachers use them to reduce chatter. Wagner is now considering the Yacker Tracker for the surgery control desk and PACU.

A beeper program

Burke says Memorial Sloan-Kettering is piloting a beeper program. “We ask fellows and attendings to leave their beepers at an assigned desk while they are in surgery.” A service coordinator manages the beepers and triages phone calls. The coordinator calls the OR if the surgeon is needed urgently.

“Chief residents and fellows get most of the pages,” says Burke, “so the expectation is for them to hand off while they are in surgery so there aren’t an excessive number of pages.”

Attending surgeons who have a BlackBerry or smart phone can transfer their beeper calls to a designated number as part of the program, which runs Monday through Friday. Burke was able to make the additional position budget neutral. All of the OR service coordinators have been educated about the program. Although they are not nurses or technicians, Burke says their experience in the OR made it easy for them to triage calls. Physicians have been pleased with the program.

Tips for reducing OR noise

“Sounds in the OR don’t act as a distraction; it’s that it takes more to get someone’s attention. We need to reset the ambient level of sound in the OR,” says surgeon Verna Gibbs, MD. Causes of noise can be grouped into roughly two categories: equipment and people behavior. Here are a few examples of how to reduce noise:

- Wear earplugs or muffs during critical times such as drilling. Caution: It may be harder to hear alarms and voices.
- Write noise reduction strategies into OR policies. For example, don’t allow music during the time-out or counts.
- Keep equipment in good repair to avoid squeaking and other noises.
- Do construction at night.
- Change from metal to plastic shelving in case carts and storage areas.
- Mute cell phones during surgery or better yet, leave them outside the OR.
- Use the technology of cell phones, beepers, and other devices to reduce overhead paging.
Quiet: Counting in progress
Some ORs have integrated noise reduction into the Universal Protocol for surgical site verification, calling for staff to reduce noise during critical events such as time-outs. Noise can cause significant distractions during counting, so hospitals have targeted that time frame in their policies. According to Stephanie Davis, MS, RN, CNOR, assistant vice president, surgical services for the clinical services group, Hospital Corporation of America (HCA), the organization’s count policy includes, “Unnecessary activity and distractions (eg, multitasking, radio, equipment, pagers, conversations) will be curtailed during the counting process to allow the scrub person and RN circulator to focus on counting tasks.”

Zone of Silence
Another strategy is to apply the “sterile cockpit” concept from aviation: Nonessential activities during critical phases of flight such as takeoff and landing are prohibited. At Memorial Sloan-Kettering, the surgical count time is called the “red zone.” “When the circulator nurse calls the red zone, no handoffs, no phone calls, and no visitations are accepted,” says Killen.

Tony Dawson, MSN, RN, vice president for operations at New York-Presbyterian Hospital, New York City, says the OR uses a “Zone of Silence” to reduce distraction from noise and other factors, such as calling for an ICU bed or for a room turnover.

John Evanko, MD, vice president of perioperative services, makes the case for the procedure: “Anesthesiologists need quiet while they are putting the patient to sleep, and when I clamp the aorta, I need to give my full attention and not be distracted. It’s the same with nurses and the count. It’s a critical part of their role and we need to respect that.”

The steps for the Zone of Silence:
1. The scrub nurse tells the circulating nurse when closure will begin.
2. The circulating nurse announces to the team that closing counts are about to start.
3. The surgeon performs a “sweep” and visual inspection of the surgical wound, and then the count begins.
4. The intraoperative team maintains and respects the “quiet time” needed for the count.

“The nursing staff appreciated that we recognized their contribution and that doing a count is an important thing,” says Dawson.

A healing environment
Wagner says OR noise reduction is part of a general hospital effort to get back to the basics. “We’re trying to create a healing environment and one way to do that is to reduce noise.”

—Cynthia Saver, MS, RN

Cynthia Saver, a freelance writer, is president, CLS Development, Inc, Columbia, Maryland.
References

