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Did You Know That Noise In The OR Can Actually Be Devastating?

Operating room (ORs) are locations where health care teams do high-risk, complex tasks demanding situational awareness, concentration, and communication among team members. Given the host of medical equipment in use and multiple team members present, ORs also are prone to high levels of noise, which serves as a distraction, increasing risk for error and presenting unsafe conditions for patient safety. Noise and distractions make it hard to hear, discern information and communicate effectively.

It is well documented that ineffective communication is a leading contributing factor to adverse events. Within an OR, noise levels have been associated with ineffective communication, diminished signal and speech intelligibility, poor performance of complex tasks, poor cognitive function and concentration (slower time-to-task completion), stress, fatigue and anxiety. There are many sources of noise and distraction within an OR with the most common being non-case relevant conversations, telephone calls, pagers, and music.

The Environmental Protection Agency's (EPA) recommended level for continuous background noise in hospitals is 45 decibels (dB), which still interferes with concentration. A study measuring noise levels in OR trauma procedures found an average noise level of almost double the recommended EPA level - 85 dB, ranging from 40dB to 130dB. Orthopedic surgery and neurosurgery procedures are among those with higher sustained continuous background noise levels as compared to other procedures, with intermittent peak levels exceeding 100dB more than 40% of the time.

Studies focused on anesthesia found the noisiest periods during surgery are associated with induction and emergence of anesthesia. Noise negatively impacts concentration and work among anesthesiologists, and reduces the ability to detect signals from monitors and other equipment. A 17% drop in accuracy of anesthesia residents noticing changes in saturation on a pulse oximeter was found in a laboratory study simulating OR background noise.

Krug Consulting
was founded by
Sandra Krug,
RRT, CRNA
Legal Nurse Consultant.

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info@LNCKRUG.com

5910 Post Blvd #110296,
Bradenton, FL
34211

www.LNCKRUG.com

Risks are associated with noise and distractions in the OR

Noise can serve as a source of distraction, diverting attention from one task and concurrently orienting to the source of distraction, increasing the risk for lapse or omission.

A prospective study evaluating noise levels in hernia repairs found that, of patients who developed a surgical site infection, noise levels were substantially higher during the period of wound closure, suggesting a potential distraction and lapse in compliance with aseptic processes.

Distractions, such as case-irrelevant communication, during urologic procedures were found to negatively correlate with completion of safety checks.

Within OR trauma surgeries with an average noise level of 85 dB, distractions and interruptions were found to have occurred on average 60.8 times.

Common sources of noise and distraction in the OR:

Technological and environmental

- Phones
- Paging systems [personal and overhead]
- Computers
- Wireless communication systems
- Music devices
- Medical equipment/devices
- Monitors/clinical alarms
- Metal equipment, instruments
- Environmental conditions [for example, ventilation]

Behavioral

- Case-related conversation
- Non-case related conversation
- Staff entering, leaving OR

When you have clients that have bad surgical outcomes, do you ever consider the noise in the OR as a line of questioning during depositions? It can be a key part of the incident. Let our legal nurse consultants assist you with this element of your case. We will help determine if there was a distraction during the procedure, and if it affected your clients outcome. Legal nurse consultants are the healthcare expert part of the legal team. Let us identify factors that caused or contributed to the alleged damages and/or injuries. We can assist with interviewing plaintiff and defense clients, key witnesses and experts. We will also identify and recommend potential defendants for your case.

Contact Krug Consulting, 1 (844) LNC-KRUG, for your next medically related case.