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Patient Safety Tip of the Week

January 28, 2025

Reducing Traffic in the OR

Another of our favorite topics: how do you reduce unnecessary traffic in the OR? Foot traffic in and out of the OR clearly has patient safety implications. It raises the risk of surgical site infections (SSI's). It can lead to interruptions and distractions that lead to errors. And it may have a detrimental effect on team communication.

AORN Journal recently summarized some studies addressing the issue of OR traffic (Fischer 2024). A study on automated traffic monitoring of neurosurgical operating room (Schafer 2024) showed that average OR traffic with direct observation was 20 people per hour, and that 87% of the time the door opened, only one person entered or exited the OR. On average, door opening occurred 18 times per hour, or every three minutes and 18 seconds. Automated monitoring using a door sensor showed an average of 31 people entering or exiting the OR per hour but was probably less accurate than direct observation. These numbers far exceeded estimates made by OR staff.

Observed reasons for door opening included:

- Supplies 18%
- Hand hygiene 5%
- Clear task 16%
- No task 59%

Schafer et al. conclude that, despite its limitations, coupling an automated monitor with regular feedback to staff and implementing staff-suggested interventions would reduce OR traffic. We've often mentioned that "black box" video monitoring in the OR, which has multiple applications, can also provide estimates of OR traffic.

A study by Hamilton et al. (Hamilton 2018) found that simply monitoring door opening did not reduce OR traffic in total joint arthroplasty cases but, after a novel educational seminar given to all personnel, they were able to significantly reduce the incidence of operating room door openings.

Low-cost interventions like placing a noticeable sign on the door prohibiting nonessential traffic, along with retractable tape that creates a small barrier to opening the door, may increase awareness. Perhaps the most effective intervention is ensuring that necessary equipment and supplies are in the OR before the start of the procedure. That requires proper planning and knowledge of needs for individual surgeons and/or anesthesiology staff. That's where pre-op huddles may be very important. And post-op debriefings can identify supplies or equipment that can be incorporated for future cases. Proper planning to schedule staff breaks should also help reduce unnecessary door opening.

Alternative means of communication, such as using phones or the intercom, has also been suggested as a way to reduce OR door opening. However, we would caution that such audible means could also create distractions or interruptions that could be detrimental. Perhaps more directed silent methods (like texting) would be less likely to distract multiple members of the OR team. Keep in mind we have also written frequently about the dangers of cell phones and texting in the OR.

Unless you have a good understanding of why the OR door is opening, you are unlikely to have a successful intervention. In several of our columns we've advocated keeping a log where staff are required to log in every time they leave and enter the OR for each case. To counter your staff's objections that this might be time consuming, use a voice assistant like Amazon's "Alexa" to simply add each reason to a list.

As in the Schafer study, your OR staff probably significantly underestimates how often those OR doors open and close. The first step is getting an accurate estimate and identifying the common reasons for such. Increasing awareness and understanding why it is important to reduce unnecessary OR traffic is just a first step. You then need to tailor your interventions to address the specific reasons at your facility.

Our prior columns focusing on surgical OR foot traffic and door opening:

- March 10, 2009 "Prolonged Surgical Duration and Time Awareness"
- January 2010 "Operative Duration and Infection"
- August 26, 2014 "Surgeons' Perception of Intraoperative Time"
- December 30, 2014 "Data Accumulates on Impact of Long Surgical Duration"
- November 24, 2015 "Door Opening and Foot Traffic in the OR"
- July 26, 2016 "Confirmed: Keep Your OR Doors Closed"
- December 2017 "A Fix for OR Foot Traffic?"
- April 23, 2019 "In and Out the Door and Other OR Flow Disruptions"
- June 8, 2021 "Cut OR Traffic to Cut Surgical Site Infections"
- January 11, 2022 "Documenting Distractions in the OR"
- October 4, 2022 "Successfully Reducing OR Traffic"
- August 20, 2024 "Air Traffic Control for the OR?"

References:

Fischer L. Reducing Traffic in the OR. AORN J 2024; 120: P4-P7
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Schafer M, Dixon H, Palladino K, et al. Automated traffic monitoring of neurosurgical operating room. Am J Infect Control 2024; 52(6): 630-634
https://www.ajicjournal.org/article/S0196-6553(24)00055-5/fulltext

Hamilton WG, Balkam CB, Purcell RL, et al. Operating room traffic in total joint arthroplasty: identifying patterns and training the team to keep the door shut. Am J Infect Control 2018; 46(6): 633-636
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