

Patient Safety Tip of the Week

October 4, 2022

Successfully Reducing OR Traffic

Opening and closing doors to the OR is of concern for two primary reasons:

1. The risk of surgical site infections is increased
2. Consequent distractions can lead to other errors in the OR

Our November 24, 2015 Patient Safety Tip of the Week [“Door Opening and Foot Traffic in the OR”](#) discussed a study from Johns Hopkins that formally studied how often OR doors are opened during joint arthroplasty surgeries and the impact on OR air flow ([Mears 2015](#)). The effects of the door opening on OR pressure and air flow clearly has implications for surgical infections. Our July 26, 2016 Patient Safety Tip of the Week [“Confirmed: Keep Your OR Doors Closed”](#) discussed a Canadian study on a program to reduce unnecessary door openings and reduce surgery-related infections ([Camus 2016](#)). They achieved an amazing reduction in OR traffic from between 42 and 70 door openings to 3.2 door openings per case. They felt this intervention may have contributed to a decrease in orthopedic SSI’s from 2.8 percent to 2.1 percent.

Regarding distractions, our January 11, 2022 Patient Safety Tip of the Week [“Documenting Distractions in the OR”](#) discussed a recent pilot study used Operating Room Black Box (ORBB) technology in a Canadian tertiary care academic hospital ([Nensi 2021](#)). The researchers documented an incredible average 89 door openings per case! That translates to an OR door opening every 1.8 minutes!

A recent article in AORN Journal ([AORN 2022](#)) highlighted a quality improvement project at one large hospital that substantially reduced the number of OR door openings. Nurses at Houston Methodist Hospital gathered baseline data on the frequency of door openings during procedures, the job titles of staff members who were responsible for the door openings, and the reasons for the door openings. They also did an online survey to all perioperative staff members to determine their knowledge regarding OR traffic and to identify reasons for door openings

The most common reason to open doors was to retrieve supplies and equipment. The staff members most commonly opening doors were the RN circulators and scrub nurses. More than 95% of respondents knew that door openings alter OR airflow and contribute to SSI’s. Suggested interventions to reduce OR door openings were more accurate surgeon

preference cards, verification of equipment and supplies during the time out, and signs on the doors to remind staff to keep OR traffic to a minimum.

They found that almost 70% of staff members did not feel comfortable speaking up about unnecessary traffic in the OR. Therefore, during inservices, they focused on calling OR traffic a patient safety issue and speaking up and holding others accountable for unnecessary traffic in and out of the OR.

They designed a sign to place on each OR door, with the slogan “Mo’ Traffic Mo’ Problems”, a photo of a construction worker, and message that foot traffic should be limited.

Because of a hurricane, the COVID-19 pandemic, and a lack of staffing and resources, they were only able to obtain follow-up data in one OR suite. But an audit in that suite showed that the average number of door openings decreased by 32%. Door openings for the top five job roles contributing to door openings also decreased.

The signs on the doors served as a “conversation starter” and helped staff members educate each other about the importance of minimizing door opening.

One barrier they encountered was that the door signs sometimes fell or otherwise disappeared. Future plans include having more signs available and designating someone in each unit to ensure the signs are posted on the doors.

In our thinking, two of the most important opportunities to reduce OR door openings are the pre-op huddle and the post-op debriefing. During the **pre-op huddle** it is imperative that the team ensure that all necessary equipment, supplies (and implants if applicable), medical records, documents, and images are present in the OR. During the **post-op debriefing** concerns about equipment and supplies should be discussed. Did we have to go outside the OR to get any equipment or supplies during the case? Were there problems with any of the equipment we already had in the OR. We can’t tell you the number of times, when a piece of equipment fails, that staff says “yeah, we had a problem with that last week” and no one did anything about it.

We’ve previously suggested two “nudges” that could reduce OR door openings: (1) using a sign akin to the “On Air” signs recording studios use to indicate a procedure is in progress and (2) requiring those opening and closing the OR doors to record the reason for their action. Having data is essential for any quality improvement project. The Houston Methodist project collected data on both the frequency of and reasons for OR door opening. You can’t get buy-in from OR staff if you can’t convince them you have a problem. And you can’t fix the problem unless you understand the reasons behind frequent OR door opening. Video recording in the OR, as described in our January 11, 2022 Patient Safety Tip of the Week “[Documenting Distractions in the OR](#)” can provide a good estimate of the frequency of door opening and might give you a good idea of the reasons for door opening, but more formal recording of the reasons is important. That

may mean putting someone outside the OR to actually record those reasons or having the person opening the door record the reason(s) in a log.

The Canadian study by Camus et al. ([Camus 2016](#)) that we discussed in our July 26, 2016 Patient Safety Tip of the Week “[Confirmed: Keep Your OR Doors Closed](#)” found reasons for entering and exiting the OR during their total joint operations included retrieving charts, instruments, or equipment, and taking a break. Their CUSP (Comprehensive Unit-Based Program) team brainstormed and came up with key changes, including stopping all traffic in and out of the OR between total joint capsule opening and closure, communicating by phone, and increasing the use of templates to identify implant size prior to each operation. They also put a sign on the OR door reminding staff to minimize traffic and asking them to record why they are entering the OR during an operation.

Reducing OR door opening is important for reducing surgical infections and reducing distractions that can lead to errors in the OR. Not enough hospitals or other surgical venues have paid attention to the frequency of and reasons for OR door opening. This remains an important patient safety issue that merits more attention.

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](#)”

References:

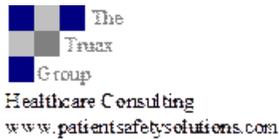
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