Implementation of an Operating Room (OR) Safety Reporting System

Luke Tseng MD, Isha Garg MD, Samantha Levine MD, Brandon Scott MD, and Brian Egan MD

Columbia University Department of Anesthesiology, Columbia University Irving Medical Center, New York, NY

INTRODUCTION

The perioperative environment presents unique hazards for staff, including trip hazards (cords and cables), poor floor and equipment lighting, inadequate room space, and poor OR design. The positioning and transferring of patients, particularly overweight and obese patients, is another significant source of workplace injury. These hazards can result in personal injury, decreased job satisfaction, financial costs, and lost work time. Such hazards may often go unreported due to near misses or the lack of a mechanism to report such events. Unfortunately, there remains a lack of data on the incidence and severity of such events.

METHODS

We developed an operating room (OR) safety reporting system in the form of a Qualtrics survey. The URL for the survey was distributed to the CUIMC Department of Anesthesiology (including attendings, fellows, residents, interns, CRNAs and anesthesia technicians) via email broadcast. The survey is accessible online via computer as well as via a mobile device. The components of the survey are as follows:

- Are you reporting an injury or near miss?
- Date of Incident
- What type of incident occurred? (SELECT from: trip, slip, head injury from collision, other injury from collision, patient positioning/transfer injury, needle stick, exposure to patient flood or body fluid)
- Briefly describe the incident
- Will you seek or was medical care sought?
- Injury severity (SELECT from 1-5)
- Have you missed or do you anticipate missing work due to this event? (SELECT from: No work missed, 1-2 work days, 3-4 work days, 1-2 weeks of work, greater than 2 weeks of work)
- Briefly describe how you think this type of incident can be prevented in the future. Please include factors you think may have contributed (e.g., low lighting levels in the OR).
- Attach any relevant photos of the incident. (Of note, this feature was a late update to the survey)

RESULTS

16 survey responses were submitted from November 2021 to April 2022. Of this data, 11 participants sustained injuries and 5 sustained near-misses. 3 participants sought medical care. 1 participant missed greater than 2 weeks of work, but the remainder did not miss any work. The mean injury severity was 2.07/5 with a SD of 1.57. No photographs were submitted.

Most incidents were related to collisions in the OR. Examples of these collisions included hitting heads with stretching poles attached to hospital beds, colliding with low-hanging monitors or light sources, and maneuvering hallways cluttered with hospital equipment/supplies/empty stretchers.

The other most common incidents related to injuries during patient transfer and positioning. Examples of this include transporting patients without appropriate surgical or ancillary staff present for support. Another example is failing to use the slide board to transfer patients between beds because the equipment was not present in the room and nobody was able to retrieve it for the sake of time. Finally, slipping/tripping on fluids/wires/stray equipment in the OR was a common mechanism of injury, especially when lighting was insufficient.

CONCLUSIONS

This OR safety reporting system allows us to analyze the frequency and types of injuries/near misses that occur in the OR setting, laying the groundwork for future safety interventions. Most injuries were related to collisions (particularly head collisions) and trip incidents. There was a high degree of near misses and minor injuries that were unknown prior to this system, suggesting the inherent need for both the survey as well as the subsequent safety interventions. A limitation of our study is the reduced sample size and sampling/ascertainment bias which may limit the accuracy of our estimates of prevalence and incidence. However, we expect that the effect of these biases will decrease as we continue to collect responses over time.

Informed by the survey data, we have piloted a safety intervention to reduce head collision injuries in the OR. We are working with OR nursing staff to ensure hazards, such as hanging monitors and surgical boom, are sufficiently above head level prior to anesthesia induction. Moving forward, as part of the presurgical pause/timeout, we will identify safety hazards and briefly discuss surgical equipment placement prior to proceeding with surgery. Over time, our safety tracker will allow us to determine whether this intervention is effective at preventing safety incidents and has led to meaningful change.

ACKNOWLEDGMENTS

We would like to thank our mentor Brian Egan, MD and the Columbia University Department of Anesthesiology for their support.

REFERENCES


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