Perioperative Safety
Keeping Our Children Safe in the Operating Room

Kerwyn C. Jones, MD*, Todd Ritzman, MD

KEYWORDS

• Perioperative safety • Checklists • Huddles • Proficiency • Just Culture

KEY POINTS

- The surgeon functions as a team leader in the operating room. In this role, it is incumbent on the surgeon to act as a role model for ensuring patient safety. Several tools are necessary to achieve this safe environment. These include use of perioperative huddles, surgical checklists, operating room standardization, ensuring surgeon proficiency, and creating an environment that practices Just Culture.
- Perioperative huddles and checklists are modified to accommodate the needs of a patient population served by an institution. These are properly performed in a brief period of time, yet they create improved communication of team members.
- Standardized operating room teams familiar with the procedures performed and teams using standardized protocols provide increased quality of care and safety. This is especially evident when the team is functioning in an environment that is openly committed to Just Culture.

Surgery is one of the few times that parents relinquish all responsibility for their children's well-being to someone else. Thus, surgeons have a tremendous responsibility to their patients. To relinquish their child parents must assume that surgeons will provide their children as safe an environment as possible. Surgeons understand that the operating room (OR) is a highly complex environment with the constant potential for great risk. Therefore, it is incumbent on surgeons to understand the factors contributing to risk and to develop the necessary mechanisms to ensure as safe an environment as possible. There are many complex factors contributing to this risk. These include the following:

- Communication errors between team members[1]
- Inconsistency of team members
- Indifferent team members
- Surgeon proficiency
- Team members' lack of understanding of the procedure and its risks[2]
- Wide variation in procedures, techniques, equipment, and protocols
- Team hierarchy[3,4]

Although it is generally recognized that these risk factors cannot be completely eliminated it is also understood that they are mitigated by several necessary actions. Many surgeons believe that they have little control over many of these factors, attributing obstacles imposed by hospital leadership as impediments to change these behaviors. However, it is the belief of the authors that the surgeon, as a front-line leader, should be the key proponent to ensure safety for the patient in and around the OR. It is the responsibility of the surgeon to continuously challenge his/her staff and the administrative leadership to continually work together to

Disclosure Statement: Neither author has anything to disclose related to this article.
Department of Orthopedic Surgery, Akron Children's Hospital, 1 Perkins Square, Akron, OH 44308, USA
* Corresponding author.
E-mail address: kjones@akronchildrens.org

Orthop Clin N Am 49 (2018) 465–476
https://doi.org/10.1016/j.ocl.2018.05.008

optimize patient safety in and around the OR. Only through relentless pursuit is success achieved.

To optimize (ensure) this safety one must develop a consistent team that communicates well; is not afraid to speak openly about potential risks; is engaged in the process; has a baseline understanding of the procedures and events anticipated for the day; can follow standardized procedures, guidelines, and policies when applicable; and is led by a surgeon that promotes open discussion and is proficient in the surgical technique. Surgeon leaders in the OR can provide or at the least help team members work toward all of these necessary components of safe care. Evidence exists that team performance is most improved through a combined approach of using teamwork training with systems improvement.[5] All of these factors are established by instituting the following protocols in the OR:

- Preoperative huddles or briefings
- Surgical checklists
- OR team standardization
- Ensuring surgeon proficiency
- Just Culture

PERIOPERATIVE HUDDLES OR BRIEFINGS

Most successful sports teams huddle before every game or match and frequently at various times throughout. In the high stress situation of competition, huddles enable each member or the team to gain a better understanding of the game plan, help them to understand their roles for that given plan, give an opportunity to ask questions when the plan is not understood, potentially improve communication of team members, provide a feeling of team camaraderie for the members, and provide a mental model and common goal for the entire team.

Formal team briefings are also a mandatory part of high reliability teams functioning in high-risk processes, such as the airline industry.[6] Team huddles are currently being used in the health care setting in numerous venues. These include the use of huddles on inpatient floors, in labor and delivery, at the managerial or administrative level, and in the OR. Although it is difficult to demonstrate a direct relationship between perioperative or preoperative huddles and improved safety, there is evidence that the huddle improves the surgical teams' attitude toward safety.[7] It is also readily apparent that preoperative huddles decrease communication errors[8] and improve team function,[9,10] which would certainly improve safety for patients. Furthermore, preoperative huddles are believed to be associated with reduced risk for wrong-site surgery and improved collaboration because of increased awareness of the surgical site and the side being operated on.[11]

In addition, there is a discrepancy in the perception of teamwork and communication among teams in the OR. Physicians tend to rate teamwork as high, whereas nurses at the same institution often rate the teamwork as mediocre.[12] This suggests that there may be a surgeon-centric opinion that he/she has a well-functioning team when in fact in Just Culture the team cannot function at its optimum unless all members of the team are empowered to speak up and possibly even "stop the system" if they believe there is inordinate risk to the patient or another team member.

The mechanics of the team huddle may differ slightly among institutions and is often dependent on the best time available, the availability of the team members, geographic space available in the perioperative space, and the previously determined poignant issues to discuss during the huddle. It is important that surgeons understand that they should be free to develop that huddle, along with input from their team, to accommodate these different parameters. However, there are some general key recommendations for huddles that all institutions should strive to perform.

The first consideration is the team members involved in the huddle. At a minimum there should be one representative of each service that will be present in the OR throughout the day. This typically involves one member each of anesthesia, OR nursing, surgical technicians, radiology technicians, and any other ancillary service to be used during the day. If feasible, it is also helpful to include preoperative and postoperative personnel because many issues carry over to and from each of these areas. In our experience, having the preoperative and postoperative team involved has led to markedly improved processing of the patients before and after surgery.

Second, it is necessary to follow a simple, scripted outline of the key considerations to be covered for the huddle. This varies from institution to institution dependent on many factors unique to each institution and the population that it cares for (**Box 1**).

Third, the script should include all cases of the day as they are reviewed in sequence one at