



## Clinical

## Surgical Safety Does Not Happen By Accident: Learning From Perioperative Near Miss Case Studies

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## A B S T R A C T

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Adverse surgical events cause negative patient health outcomes and harm that can often overshadow the safe and effective patient care provided daily by nurses as members of interprofessional healthcare teams. Near misses occur far more frequently than adverse events and are less visible to nurse leaders because patient harm is avoided due to chance, prevention, or mitigation. However, near misses have comparable root causes to adverse events and exhibit the same underlying patterns of failure. Reviewing near misses provides nurses with learning opportunities to identify patient care weaknesses and build appropriate solutions to enhance care. As the operating room is one of the most complex work settings in healthcare, identifying potential weaknesses or sources for errors is vital to reduce healthcare-associated risks for patients and staff. The purpose of this manuscript is to educate, inform, and stimulate critical thinking by discussing perioperative near miss case studies and the underlying factors that lead to errors. Our authors discuss 15 near miss case studies occurring across the perioperative patient experience of care and discuss barriers to near miss reporting. Nurse leaders can use our case studies to stimulate discussion among perioperative and perianesthesia nurses in their hospitals to inform comprehensive risk reduction programs.

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Access to safe surgical care is indispensable to promote individual health, welfare, and economic prosperity worldwide.<sup>1</sup> However, surgery is not without consequences, and surgical procedures expose patients to a multitude of risks and potential complications.<sup>2</sup> Unfortunately, preventable patient harm persists in healthcare despite decades of advances to reduce adverse events.<sup>3–5</sup>

Providing safe surgical care in a complex environment is difficult for perioperative clinicians, who are continually challenged by



time-sensitive pressures, technological advances, treatments, and scientific discoveries.<sup>6</sup> Likewise, the array of potential and realized adverse events occurring in the surgical setting are remarkably complex, ranging from hospital-acquired infections, retained foreign objects, surgical fires, medication errors, wrong-site surgeries, and others.<sup>2,7,8</sup> Adverse events occur in nearly one in four hospitalizations, with adverse events related to surgical care causing the majority of these occurrences.<sup>9–11</sup> The incidence rate of surgical adverse events varies depending on the type of procedure, with prior researchers reporting rates ranging from 3.4% to 21.8%.<sup>10,12,13</sup> Because the vast majority of adverse events are preventable, uncovering the fundamental causes of errors in the surgical setting is critical to understanding and addressing the key factors driving persistent patient harm.

While adverse events are medical errors resulting in realized harm to patients, a near miss is defined as “an act of commission or omission that could have harmed the patient but did not cause harm as a result of chance, prevention, or mitigation.”<sup>14</sup> While adverse incidents provide valuable data for improving patient safety, this is a reactive strategy, and patients deserve more purposeful solutions.

Near misses occur far more frequently than adverse events and can inform proactive approaches to prevent patient harm.<sup>15</sup> Near misses occur 7 to 300 times more frequently than adverse events and have comparable root causes that exhibit the same underlying patterns of failure.<sup>14</sup> Understanding the root causes and patterns of near misses provides learning opportunities for all levels of the nursing profession to identify weaknesses in patient care and build appropriate solutions to enhance care and reduce overall healthcare risks.

Surgical safety does not happen by accident; it takes a deliberate and concerted effort from all staff members throughout the organization.<sup>16</sup> Often, nurses do not receive feedback from leaders when reporting near misses, including education and information-sharing improvements, even when submitting detailed reports congruent with organizational policies and procedures.<sup>15</sup> In turn, nurses’ lack of conceptual knowledge regarding near misses frequently contributes to repeated errors and sustained risk for reporting omissions.<sup>15</sup> The purpose of this manuscript is to educate, inform, and stimulate critical thinking by discussing perioperative near miss case studies and the underlying factors that lead to errors. Our authors discuss 15 near miss case studies occurring across the perioperative patient experience of care based on data from personal experiences, medical case reviews, and patient safety reports. Additionally, we identify barriers for perioperative nurse leaders to enhance near miss reporting.

## Perioperative Near Miss Case Studies

### Case Study 1: The Case of the Emergency Ectopic Pregnancy

A 27-year-old experiencing shoulder pain, hypotension, vaginal bleeding, and sharp severe lower abdominal pain presented to the emergency department for care. The surgical team was notified, and the patient was rushed to the operating room (OR) for an emergency open laparotomy for a suspected ruptured ectopic pregnancy. While transitioning from the stretcher to the surgical table, the patient lost consciousness. The team commenced emergency surgery without initiating a sponge, sharp, or instrument count. The registered nurse (RN) circulator requested help, and a second team completed an initial count, albeit after the surgery had started. As per suggested national guidelines<sup>17</sup> and hospital policy, the team paused for an intraoperative radiograph before wound closure. While waiting for the results, the RN circulator and the surgical technologist counted sponges, sharps, and instruments. The radiologist notified the surgeon that a medium laparotomy sponge was left in the patient. The surgeon performed a methodical wound examination and removed the missing item. Finding the sponge confused the surgical team, as

they had 41 sponges but only 8 sponge packages (5 sponges per package). The RN circulator again called for help to reconcile the count, thinking there were an additional four sponges in the room. After an exhaustive search, obtaining an additional intraoperative radiograph, and using a radio-frequency identification adjunct technology device, the team determined that one package contained six laparotomy sponges instead of five.

### Case Review

A ruptured ectopic pregnancy is a life-threatening condition, and the team did not have time to complete the initial count before the incision. The team took immediate action to reconcile the count and followed national guidelines and hospital policies recommending that the surgeon suspend wound closure until an intraoperative radiograph is obtained. Packaging errors with sponges and needles are infrequent but do occur. Empty packages are not an accurate or reliable representation of items counted.<sup>17</sup>

### Case Study 2: The Case of the Taped Dispersive Electrode Pad

The surgical team was providing care for an obese (body mass index < 30) 40-year-old female with Cushing syndrome having an open appendectomy. The surgeon chose open versus laparoscopic surgery due to the patient’s medical history and body habitus. The RN circulator conducted a verbal handoff for lunch relief using the mnemonic Introduction, Patient, Assessment, Situation, Safety Concerns with the relief RN. During the handoff, the RN circulator reported problems grounding the dispersive electrode pad. The circulator applied the pad to multiple anatomical sites but could not obtain ground on the electrosurgical unit (ESU). The nurse’s remedy was to apply 3-inch silk tape over the dispersive pad, which made the ESU unit report a proper ground. The oncoming nurse called for a safety pause, helped remove the drapes, and checked the dispersive pad site for burns or redness. The team transferred the patient to a secondary surgical table with a large gel pad patient return electrode, resulting in adequate grounding. Skin antiseptic and drapes were reapplied, and surgery was restarted.

### Case Review

Proper team communication and a standardized handoff prevented a potential severe burn or other adverse events. Dispersive electrode pads should be placed on clean, dry skin and over a large, well-perfused muscle mass.<sup>17</sup> If inadequate contact occurs between the dispersive electrode and the patient, the RN circulator should remove oil, lotion, moisture, or prep solution; remove excessive hair; change sites; or apply a new pad.<sup>17</sup> Perioperative nurses should operate ESU units per manufacturer guidelines and not use tape to hold the dispersive pad in place or alter the dispersive pad.

### Case Study 3: The Case of the Wrongly Dispensed Medication

During a routine hysterectomy, a healthy 39-year-old patient experienced significant transient hypotension and bradycardia, likely related to a combination of vagal stimulation and mild blood loss. The anesthesia provider chose to treat the hypotension and bradycardia with an indirect sympathomimetic agent, ephedrine. The anesthesia provider entered ephedrine into the computerized medication dispensing terminal, which promptly opened a drawer with only one medication vial present. The anesthesia provider immediately removed the medication and prepared to withdraw the drug into a syringe. While double-checking the medication and labeling the syringe, the anesthesia provider noticed that the drug dispensed was phenylephrine, not ephedrine. Administration of phenylephrine would have exacerbated the bradycardia and potentially caused patient harm. The anesthesia provider again accessed the computerized medication dispensing terminal and found



another vial of phenylephrine present in a drawer labeled for ephedrine. The anesthesia provider then requested that the perioperative nurse obtain an ephedrine vial from the auxiliary machine in the hallway. After completion of the surgery, the pharmacy identified three additional inappropriately restocked vials of phenylephrine within the ephedrine drawers.

#### Case Review

Nurse anesthesia providers maintain high levels of vigilance throughout the perioperative period, scrutinizing all aspects of patient care to ensure the highest levels of safety, especially during medication administration. Computerized medication dispensing systems are commonplace in modern ORs, requiring daily drug restocking by pharmacy technicians. Medication packaging and drug nomenclature from companies may be similar and can lead to inadvertent incorrect placement of medications within the dispensing system by human hands. Policy changes within the pharmacy resolved this issue. In this unique case, simple policy and basic nursing strategies were essential in identifying the problem leading to the near miss event.

#### Case Study 4: The Case of the Nearly Missed Skin Preparation

Two experienced RN circulators were caring for a 40-year-old male having a single-level anterior cervical discectomy and fusion. The hospital recently celebrated a grand opening, and the orthopedic spine surgical service was one of several newly added surgical specialties. Due to a low surgical caseload, perioperative leaders scheduled RN circulators using a team circulating approach, two to a room, to improve efficiency. One RN circulator completed a standard fire risk assessment during the surgical time-out and inquired about the drying time for the surgical skin preparation solution. Each RN circulator stated they believed the other had performed the surgical skin prep. After the RN circulator confirmed a missed skin prep, the surgical team removed the drapes, prepped the surgical site, allowed the appropriate drying time, and redraped the patient. Before the incision, the RN circulator initiated a new surgical time-out to ensure team members correctly followed all safety processes.

#### Case Review

Using more than one RN circulator for cases is a useful technique during periods of low surgical volume to improve operative metrics and enhance case exposure for nursing staff. However, this case study demonstrates that using more than one RN circulator can increase risk due to role ambiguity.<sup>18</sup> The surgical team's accuracy during the surgical time-out ultimately prevented a potential surgical site infection and patient harm.

#### Case Study 5: We are Going to Have to Reprocess That!

A 63-year-old male patient was scheduled for a transforaminal lumbar interbody fusion. Perioperative leaders assigned two experienced RN circulators to the case, a new hire on hospital orientation, and a preceptor with 11 years of hospital experience.

While preparing the OR for surgery, the preceptor showed the orientee several nonsterile instruments that the surgeon requested to have flash sterilized. The surgeon kept his favorite instruments in his office to avoid damage or misplacement and brought them to the OR before the case. The orientee objected to the immediate-use sterilization, stating it was not a best practice, and questioned if there were comparable instruments in the sterile processing department (SPD). The surgical technologist recommended a tray of lumbar spine instruments which included the items the surgeon brought to the OR. The orientee retrieved the tray of correctly reprocessed instruments from SPD for use during the procedure.

#### Case Review

Orientees can offer new viewpoints on risky behaviors. Fortunately, the orientee felt empowered to speak out against unsafe practices in this case study. Following hospital policies for instrument reprocessing and immediate-use sterilization identified learning opportunities for the surgical team and decreased patient risk for a surgical infection.

#### Case Study 6: The Case of the Near Miss Wrong-Site Surgery

The RN circulator prepared the OR for an emergency craniotomy on an intubated patient. The RN circulator checked the consent and site verification forms, and both confirmed a right parietal craniotomy. The patient's right parietal region had initials confirming the consented surgical site. Despite patient intubation, the surgeon and other perioperative team members started the preinduction phase of the World Health Organization (WHO) Surgical Safety Checklist.<sup>19</sup> The first phase of the WHO checklist requires the patient to confirm their identity, procedure, surgical site, and consent.<sup>19</sup> The RN circulator read the consent form aloud while pointing to the initials on the patient's head. Immediately the surgeon questioned the procedure site and requested to view computed tomography images, confirming that the patient required a left parietal craniotomy and was incorrectly consented and marked.

#### Case Review

A wrong-site surgery would have occurred without the surgeon's request to verify the computed tomography image. A root cause analysis revealed that a different provider, who was not a part of the surgical team in the OR, wrote the consent and initialed the patient's head. Surgical team members must follow hospital universal protocol policies for surgical site verification, including consent and site marking procedures for intubated patients.

#### Case Study 7: The Case of the Forgotten Alcohol Container

The surgical team positioned and intubated a 46-year-old female patient scheduled for an occipital lobe tumor resection. The RN circulator performed the initial surgical count with the surgical technologist while the surgeon and physician assistant clipped the hair, cleansed the scalp and hair using alcohol-saturated 4 × 4s, and performed the final surgical skin prep. After meeting the skin prep drying time, the team draped the patient, performed a surgical time-out, and the case proceeded without incident. When the surgical team removed the drapes after the case, the RN circulator found a container with alcohol-saturated 4 × 4s resting on the patient. The surgeon examined the drapes and the patient's skin for burns, finding none.

#### Case Review

The RN circulator and team did not notice the alcohol container inadvertently left on the patient during the surgical skin prep. The location of the alcohol within the surgical drapes could have created vapor tenting. Vapor tenting occurs when oxygen or flammable vapors cannot dissipate because they become trapped and concentrated under the drapes, placing the patient at risk for a surgical fire.<sup>20</sup> An assessment of the patient by the RN circulator before final draping could have prevented the near miss.

#### Case Study 8: The Case of the Consent Form Clarification

A 27-year-old, 39-week gravida 3 para 2 mother arrived at the hospital for a repeat cesarean delivery. After confirming the patient's consent, perianesthesia staff transported the patient to the OR suite. The anesthesia provider failed to place the spinal anesthetic,

potentially due to the patient's anatomy, and prepared the patient for general anesthesia. The team paused to complete the surgical time-out with the patient prepped, draped, and ready for anesthesia induction. The RN circulator read aloud the consented procedure as "cesarean delivery with bilateral tubal ligation." The surgeon alerted the team that the consented procedure was incorrect and that the consent form should state "cesarean delivery with bilateral salpingectomy." The primary surgeon and the patient verbalized the near miss and the correct procedure of cesarean delivery with bilateral salpingectomy. Because the patient was alert and unmedicated, she signed an amended consent form with the correct surgery listed.

#### Case Review

Consenting the patient for surgery in the OR suite is not a best practice. This case demonstrates a very near miss in which the written consent did not match the patient's wishes or the procedure verbalized by the surgeon preoperatively. The surgical team could have avoided the near miss through strict adherence to organizational policies for informed consent and ensuring patient health literacy regarding the planned surgery.

#### Case Study 9: The Case of the Lunch Turnover and Multiple Specimens

Surgeons were performing a neck dissection on a 45-year-old male for suspected cancer. The surgeon excised multiple surgical samples from the patient, which the surgical technologist placed on the back table. A novice surgical technologist replaced the primary surgical technologist for a lunch break. When returning from break, the primary surgical technologist found the back table was disorganized. The experienced surgical technologist asked the team if there were any new specimens, and the surgical technologist reported two. The surgeon overheard and disagreed, stating there were three new specimens. The surgeon instructed the team to pause and verify the specimens' location and labeling. After searching the back table, the surgical technologists located the missing specimen and verified all specimen labeling for accuracy.

#### Case Review

Communication failure is the most prominent factor contributing to specimen management errors.<sup>17</sup> During the preoperative huddle, the surgical team should discuss anticipated specimens and employ read-back procedures during staff member handovers. Improper specimen management can lead to a misdiagnosis and a repeat operation to obtain the specimens. After this near miss, perioperative leaders provided education and training to staff members to lower future patient risk and ensure staff comprehension.

#### Case Study 10: The Case of the Helpful Medical Student

Surgeons were performing a laparoscopic-assisted vaginal hysterectomy on a 39-year-old female. The teams used two back tables to prevent cross-contamination, a clean table for the abdomen, and a dirty table for the surgical instruments coming into contact with the vagina. Two surgical technologists assisted the surgeon while a medical student observed the surgery. The medical student heard an instrument request and attempted to pass an instrument from the dirty back table to the surgical technologist. The RN circulator immediately spoke up, informing the surgical technologist not to touch the instrument offered by the medical student. The RN circulator informed the surgeons, and they asked the medical student to break scrub and observe the surgery from a distance.

#### Case Review

Maintaining surgical asepsis through supervising and evaluating the activities of other team members is a core duty and responsibility of the perioperative nurse.<sup>17</sup> The surgical team avoided cross-contamination, a case delay, and an increased patient risk for surgical site infection through constant vigilance of aseptic techniques.

#### Case Study 11: The Case of the Confusing and Incorrect Medication Dosage

Two surgical patients were scheduled for an endarterectomy to treat peripheral vascular complications, requiring weight-based dosing of preoperative high-alert medications. Both patients were vastly different weights. During the preoperative interview, the nurse verified the medication orders and observed that both patients had high-risk medications in the manufacturer's packaging attached to their charts. The preoperative nurse opened the medication packaging and noticed that while the patient information was correct on the labels, the medication reflected the opposite patient's drug dosing. The preoperative nurse stopped what they were doing, called for an interprofessional safety huddle to verify the mistake, removed the incorrect medications from the area, and requested the correct medication dosage from the pharmacy.

#### Case Review

Nurses possess unique roles and responsibilities in medication administration, as they are the final safeguard to ensure the five rights (5Rs) of medication administration—the right patient, right drug, right time, right dose, and right route.<sup>21</sup> While the right patient, drug, time, and administration route were correct, the medication dosage was inaccurate. The preoperative nurse prevented the administration of two incorrect medication doses by checking the 5Rs and ensuring that an independent double check of high-alert medications occurred during prescription, dispensing, and verification prior to administration, thus avoiding potential patient harm and adverse events.

#### Case Study 12: The Case of the Unlabeled Medication

A 37-year-old male with no significant past medical history underwent an urgent laparoscopic appendectomy under general anesthesia with no complications. While in the postanesthesia care unit (PACU) phase one recovery, he complained of severe nausea. The charge nurse assisted the postanesthesia nurse at the bedside by preparing the medication to relieve nausea. The charge nurse verified the patient's orders, withdrew a 6.25 mg vial of promethazine from the automated medication dispensing system, and mixed it in a 50-mL bag of normal saline for intravenous infusion. The charge nurse used closed-loop communication with the patient's nurse when delivering the medication to the patient's bedside but did not label the normal saline bag as having medication added.

Moments later, another nurse assisted the postanesthesia nurse in providing patient care at the bedside. The postanesthesia nurse requested the assisting nurse to prime the bag containing promethazine for infusion. The assisting nurse noticed that the normal saline bag had no indication of medication added and offered to reconstitute the promethazine into the saline bag. At this time, the charge nurse stated that 6.25 mg of promethazine was already added to the bag. In an abundance of caution, the medication bag was discarded, prepared again, and correctly labeled.

#### Case Review

All medications must be properly labeled, particularly when prepared by someone who is not administering the medication. While cross-coverage of nurses may occur in phase one recovery of



the PACU, teams should be clearly assigned to avoid confusion and potential duplication of efforts. Closed-loop communication is imperative when multiple team members are providing patient care and can help mitigate duplicate efforts or errors.

#### *Case Study 13: The Case of the Incorrect Chemical Indicator*

During a functional endoscopic sinus surgery, the otolaryngologist encountered technical difficulties requiring additional instrumentation from a specialty set. The RN circulator retrieved the set from SPD and checked the external type 1 chemical indicator and the internal type 5 chemical indicators to ensure the instruments met steam sterilization parameters. Upon opening the set, the RN circulator identified the placement of a type 1 process indicator inside of the container when the set should have contained an internal type 5 chemical indicator. Thus, the RN circulator could not verify set sterility. The RN circulator obtained a second set and found it contained the correct type 5 chemical indicators properly placed throughout the set. The RN circulator alerted SPD leadership to the near miss event. The SPD nurse manager discovered the section had exhausted its stock of type 5 chemical indicators, and staff began using type 1 chemical indicators externally for peel packs, wrapped sets, and sets in containers for two sterilizer loads. SPD staff recalled all incorrectly processed items from the two loads and obtained type 5 chemical indicators from a local hospital.

#### *Case Review*

Chemical indicators are part of a comprehensive quality control program to provide confidence in the effective reprocessing of medical devices and surgical instrumentation. Perioperative nurses must have a mastery of sterilization processes, including a knowledge of indicator types to monitor surgical asepsis and prevent risks associated with improper sterilization. This near miss event helped to identify weaknesses in staff knowledge and provided an impetus for leaders to initiate training and education on sterilization processes.

#### *Case Study 14: The Case of the Refused Release of Blood Products During a Mass Transfusion Event*

A 20-year-old trauma patient with blast injuries presented to the OR for emergent surgical care. The patient had a large volume of estimated blood loss and was hemodynamically unstable, necessitating the activation of the organizational mass transfusion protocol. The RN circulator notified the blood bank lab (transfusion services) of the emergency and sent a runner to procure the emergency blood products. The runner provided the blood bank staff with the patient's name, sex, and date of birth but was denied the emergency blood products due to not having a patient identification sticker. The runner stated that no patient identification stickers were available and asked to see the blood bank supervisor. After the runner described the situation, the blood bank supervisor reported that a patient sticker is not required in a mass transfusion scenario, as the minimum information required to release blood products is the patient's name and sex.

#### *Case Review*

The expedient activation of a mass transfusion protocol is essential to manage trauma patients successfully. The delay in obtaining blood could have caused a negative patient outcome or death. After this near miss, perioperative leaders updated the mass transfusion policy with specific language detailing the minimum information required to release emergency blood products and conducted training for staff from both sections to educate, reduce ambiguities, and streamline processes.

#### *Case Study 15: The Case of the Patient With a Metal Hypersensitivity*

The surgical team was caring for a 54-year-old male bricklayer with a known metal sensitivity to nickel scheduled for right total knee arthroplasty. The RN circulator completed the universal protocol while confirming and discussing multiple patient characteristics, including patient allergies, antibiotics, and the need for blood products. The surgeon accessed the joint, removed the damaged bone and cartilage, measured the joint, and requested an implant. The RN circulator passed the requested implant to the surgical technologist on the back table. During the final sizing check, the RN circulator questioned the metallic composition of the implant. After reading the accompanying literature, the RN circulator determined that the implant contained nickel and instructed the surgical technologist to remove the implant from the field. The procedure proceeded after the team procured an alternate implant made from titanium.

#### *Case Review*

Although uncommon, some patients have known metal hypersensitivities. The RN circulator avoided a potential negative patient outcome by removing the implant from the operative field. Preoperative screening for patients with implants should involve assessing for metal hypersensitivities and prior problems with cosmetic jewelry.<sup>22</sup> Ear piercings are a known sensitivity indicator alongside several occupations involving metal exposure.<sup>22</sup> Failure to comprehensively screen these patients correctly puts them at risk for multiple complications, including delayed wound healing, recurrent wound issues, or implant failure.<sup>22</sup> The surgeon should select implants made from titanium, carbon fiber, and other materials for patients with metal hypersensitivities.<sup>22</sup> TeamSTEPPS (Agency for Healthcare Research and Quality (AHRQ)) tools, including preoperative briefings, can help teams systematically discuss patient care issues and bridge the communication gaps leading to near misses.

#### **Barriers to Near Miss Reporting**

Clinicians face numerous obstacles that prevent timely and complete reporting of near misses and medical errors, such as privacy concerns, a lack of management support, a lack of time due to a heavy workload, and fear of disciplinary actions.<sup>23,24</sup> One barrier to reporting near misses is the notion that doing so has little value.<sup>15</sup> In turn, nurses may perceive a lack of managerial priority or leadership support because the occurrence of near misses is not routinely acknowledged or examined. Although a high surgical workload is a genuine concern for some settings, most barriers to reporting near misses or errors can be minimized by improving the hospital's reporting structures and safety culture.<sup>25</sup>

Perioperative leaders can assess the hospital safety culture by understanding an organization's values, beliefs, norms, and behaviors regarding patient safety and how safety-focused behaviors are encouraged, supported, expected, and accepted.<sup>26</sup> Nurses at all levels are integral contributors in establishing and sustaining an organizational safety culture<sup>27</sup> and can foster supportive working environments that encourage reporting of near misses to avoid traditional punitive responses to errors and occurrences of harm.<sup>25</sup> Perioperative leaders should engage staff members in frequent safety improvement discussions, including near miss education, to increase its awareness and perceived value to nurses.<sup>25,28</sup> Creating a safety culture that encourages reporting would involve sharing near miss information with clinicians and working collaboratively to identify system modifications that reduce or eliminate real future adverse incidents. Thus, clinical nurses can help inform safety improvement changes, as they are well aware of the challenges and complexity of their interprofessional work environments. Ultimately, engaging in an ongoing near miss dialogue among



leaders, managers, and employees can help drive an effective learning culture that promotes patient safety, minimizes negative attitudes around error reporting, and elevates the voice of nursing.<sup>28,29</sup>

Interestingly, two separate investigators stated that the form or reporting method employed by the hospital was a major near miss reporting obstacle, because healthcare personnel deemed it unsuitable and overly burdensome.<sup>23,30</sup> At some hospitals, near miss reporting follows the same process and paperwork as an actual event resulting in patient harm. Indeed, clinicians need concise and easy-to-use tools to encourage widespread use of near miss reporting. We recommend that perioperative and perianesthesia leaders review their near miss processes and forms to enhance usability and maximize reporting of all safety-related incidents.

## Conclusion

Adverse surgical events cause negative patient health outcomes and harm that can often overshadow the safe and effective patient care provided daily by nurses as members of interprofessional healthcare teams. Reviewing near miss occurrences and uncovering patterns or similarities between events provides learning opportunities for nurses to identify patient care weaknesses and build appropriate solutions to enhance care. In this manuscript, we discussed 15 near miss case studies occurring across the perioperative patient experience of care and identified barriers for perioperative nurse leaders to enhance near miss reporting. Nurse leaders can use near miss reports and our case studies to stimulate discussion and critical thinking among perioperative and perianesthesia nurses to inform comprehensive risk reduction programs.

## Declaration of Competing Interest

None to report.

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