

ECRI Institute Perspectives

Postanesthesia care 'action plan' aims to ensure optimal patient safety

The most important room in the hospital": that's what a landmark 1969 case in Canada—*Laidlaw v. Lions Gate Hospital*—called the phase I postanesthesia care unit (PACU) because of the dangers to patients receiving that level of care (ASPAN). Especially during the first phase of postanesthesia care, patients are typically in a physiologically vulnerable state and require close monitoring of their basic life-sustaining body systems. They may be unconscious or semiconscious and thus unable to fully participate in their care, answer questions, or advocate for themselves.

Further challenges to optimal postanesthesia care include high patient volume and fast turnover, which may mean a high potential for wrong-patient errors, constant handoffs to and from the setting, challenges to communication and care coordination, and pressure to "keep patients moving."

This article offers an action plan to help risk managers and their organizations address issues such as safety culture, personnel and care coordination issues, handoffs, patient assessment and monitoring, specific clinical and safety challenges, and discharge.

The issue in focus

Patient safety risks abound in postanesthesia care, a fact highlighted by a 2006 study of 1,000 randomly selected patients at 1 hospital. The rate of anesthesia-related complications was 23% in phase I PACU care, compared with 4% in the OR. Of all complications occurring during phase I PACU care, the most common were need for upper airway support to maintain a patent airway (40%), nausea and vomiting (31%), tachycardia (13%), hypertension (11%), and hypotension (7%). The author concluded that the results "reinforce that the PACU is a critical care setting" (Tarrac).

The American Society of PeriAnesthesia Nurses (ASPAN) has identified specific safety issues that require attention. Those that are pertinent to postanesthesia care relate to communication, care coordination, medication safety, infection control, staffing, provider behavior, infusion pump and other equipment use, and involvement of the patient and family, among others (Krenzischek et al.).

Claims and lawsuits

Most anesthesia malpractice claims result from intraoperative events. However, postanesthesia care deserves special risk management attention because of the potential for serious adverse outcomes.

According to data from the American Society of Anesthesiologists' (ASA) Closed Claims Project Database, 7% of the 1,332 claims that have occurred since 2000 were PACU events and 11% were postoperative events (occurring after PACU discharge but before discharge from the facility).

Severity of patient injury was greater in postoperative and PACU claims than in



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intraoperative claims, even though the median payment amount of \$312,500 was similar across the 3 phases. Other ways in which intraoperative, PACU, and postoperative claims differed are shown in the sidebar on p 15.

A separate analysis of 33 closed PACU claims over a 15-year period found that the most common allegations were improper management of the surgical patient (18%), anesthesia-related allegations unrelated to anesthesia administration (15%), improper administration of anesthesia (12%), and failure to monitor the patient's physiologic status (9%). Most commonly, the primary responsible party was an anesthesiology professional (48%) or nurse (39%).

The most common risk management issues were failure to note clinical information (eg, vital signs), provider communication about the patient's condition, failure to follow policies and procedures, issues involving physiologic monitoring, inadequate training, inconsistent documentation, inadequate documentation of the date and time, lack of clinical assessment, and alteration of documentation (Ross and Ranum).

Action plan

This action plan outlines key steps organizations can take to ensure safety and minimize liability and regulatory risks in postanesthesia care. It is not exhaustive; other efforts not listed here include evaluating the effectiveness of and adherence to patient safety practices, assessing and managing patients' pain, screening for postoperative delirium, setting standards for staff competency and assessing whether staff meet those standards, and ensuring appropriate staffing and scheduling.

Foster a culture of safety

Tasked with developing "an organizational infrastructure to promote perianesthesia safety," ASPAN's Safety Committee created the ASPAN Safety Model that emphasizes advocacy, communication, teamwork, and efficiency as the focus for patient safety improvement. The authors encourage perianesthesia nurses to keep asking themselves, "Where is the harm? What can we do to prevent it? If something was to go wrong, what would it be and how would it happen? What will we do about it?" (Krenzischek et al.).

Nurses play a central role in establishing organizational culture. One article describes several ways perianesthesia nurses can advocate for patient safety, including speaking up for patients, advocating for a safe work environment, assessing for nurse fatigue, and advocating for the nursing profession (Windle et al.).

Safety culture surveys, teamwork and communication training, clinical standards, predictive and reactive system analysis, results of studies on patient safety issues, and SBAR (Situation, Background, Assessment, Recommendation) are some tools that can be used to systematically improve safety.

Institute formal quality improvement

Postanesthesia care can benefit from formal quality improvement activities that promote continuous surveillance and improvement. ASPAN's standard on quality improvement states that perianesthesia nurses should continually monitor and evaluate care and that a multidisciplinary approach should be used to address opportunities for improvement. Both process and outcome measures should be used (ASPAN).

Organizations may also wish to participate in the Anesthesia Quality Institute's National Anesthesia Clinical Outcomes Registry. Participants can submit data on demographics of the anesthesiology practice, case-specific process and demographic data, outcome data, and data for risk adjustment. The outcome data includes a list of

26 critical adverse patient care events compiled by ASA. Participants receive summary reports with their data and aggregate data.

Ensure adequate space, equipment, and supplies

Necessary space, equipment, and supplies must be available in every location where postanesthesia care is provided. The Centers for Medicare & Medicaid Services' (CMS) Conditions of Participation generally require hospitals to have "adequate provisions for immediate postoperative care." According to CMS's interpretive guidelines, this means that postoperative care conforms to acceptable standards of practice, the postoperative care area is a separate area of the hospital with limited access, policies and procedures outline requirements for transfer to and from the postoperative care area, and the hospital has provisions for close observation of patients not transferred to the postoperative care area (CMS).

DNV (Det Norske Veritas) standards require hospitals to have "equipment, clinical staff, and plan of care provisions" for postoperative care (DNV). ASA's standards for postanesthesia care specify that a physician who can manage complications and provide cardiopulmonary resuscitation to postanesthesia patients should be available in the facility (ASA "Standards").

ASPAN also has a practice recommendation that lists equipment necessary for each phase of perianesthesia care, including phase I, phase II, and extended postanesthesia care. The practice recommendation notes that equipment should be of appropriate sizes to meet the needs of the populations served (ASPAN).

Define anesthesiologists' responsibilities

CMS requires policies to delineate postanesthesia responsibilities (CMS). Nurses perform most direct patient monitoring and care during the postanesthesia period, but anesthesiologists are responsible for medical supervision and coordination of care in the PACU (ASA "Standards"). The anesthesiologist should remain responsible for evaluating and treating postanesthetic complications (ASA "Statement on the Anesthesia Care Team") and should stay with the patient "as long as medically necessary" and until the receiving provider has all necessary information (ASA "Guidelines").

Anesthesiologists are also responsible for documentation of anesthesia care in the record. Elements include the patient evaluation on PACU admission and discharge; records of vital signs, level of consciousness, and medication administration; unusual events, including complications; types and amounts of intravenous fluids and blood products administered; and postanesthesia visits (ASA "Statement on Documentation").

ASA's standards for postanesthesia care generally state that "an accurate written report of the PACU period" should be maintained. They encourage scoring patients' physical status at admission, appropriate intervals thereafter, and discharge (ASA "Standards").

Characteristics of intra- and postoperative claims			
	Intraoperative claims	PACU claims	Postoperative claims
Severity			
Patient death	30%	47%	58%
Payment made on claim	62%	68%	47%
Injury types and causes			
Respiratory injury	24%	44%	42%
Regional anesthesia	7%	8%	14%
Equipment problems	21%	12%	8%
<i>Source: Posner, Karen L., PhD (Project Manager, ASA Closed Claims Project).</i>			

Implement structured handoffs

Handoffs are especially risky for postanesthesia patients, and the quick progression of patients through the PACU means that handoffs occur all the time. An initial step is defining when patients are ready for transfer. CMS's general interpretive guidelines on immediate postoperative care state that policies and procedures should outline requirements for transfer to and from the recovery room (CMS).

Handoffs start when the patient leaves the OR. ASA's standards state that a team member who is knowledgeable about the patient's condition should accompany the patient to the PACU. During transport, the patient should be "continually evaluated and treated . . . with monitoring and support appropriate to the patient's condition." On arrival, the accompanying provider should reevaluate the patient and give the PACU nurse an oral report, including information on the patient's preoperative condition and surgical and anesthetic course. The patient's status should be documented. The accompanying provider may leave the PACU only once the PACU nurse accepts responsibility for the patient's care (ASA "Standards").

Barriers to effective handoffs include incomplete transfer of information, other communication issues, distractions, incomplete or inconsistent teams, omission or inefficient performance of clinical tasks, and poor standardization (Segall et al.).

Recommendations include teamwork and handoff training, standardized handoff processes and protocols, ready availability of equipment and fluids before patient arrival, completion of urgent clinical tasks before information exchange, and allowing discussion of questions or concerns (Segall et al.).

An ASPAN practice recommendation likewise emphasizes the importance of using a structured handoff process and lists elements to include in handoff reports as well as when preparing the patient for transport (ASPAN).

Patient assessment and monitoring

While the patient is in the PACU, his or her condition must be evaluated continually. Observation and monitoring methods should be chosen based on the patient's medical condition, but the ASA standards state that oxygenation, ventilation, circulation, level of consciousness, and temperature require "particular attention" (ASA "Standards").

Similarly, the Joint Commission requires that hospitals assess the patient's physiologic status "immediately after the operative or other high risk procedure and/or as the patient recovers from moderate or deep sedation or anesthesia" and monitor physiologic status, mental status, and pain as indicated by the nature of the procedure and anesthesia administered. The medical record must contain information on the patient's postoperative vital signs and level of consciousness; medications, fluids, and blood products administered; and unanticipated events and their management (Joint Commission).

Medication safety

In an analysis of 645 PACU medication errors from MEDMARX, 6.8% resulted in harm. Of the 44 errors that resulted in harm, 1 led to a near-death event and another required further hospitalization.

Of all errors, 60% occurred during administration, 22% occurred during prescribing, and 11% occurred during transcription or documentation of the order. The most common types of errors were improper dose or quantity (25%), omission (20%), prescribing error (15%), and unauthorized drug (14%). The most common reported causes were performance deficit (46%), failure to follow procedure or protocol (24%),

communication (17%), documentation (13%), and knowledge deficit (11%). Contributing factors were identified in 161 records; the most common were distractions (47%), workload increase (16%), and inexperienced staff (15%).

Review of the reports revealed recurring issues, such as hanging the incorrect epidural solution, wrong-dose and wrong-drug errors involving patient-controlled analgesia, administration of medications despite previous identification of allergies or contraindications, extra or omitted doses of medications (ketorolac, antibiotics, and pain medications, most frequently), lack of proper patient identification, and errors involving high-alert medications (Hicks et al.).

Practices to improve medication safety include the following (Windle et al.; ASPAN):

- proper labeling
- easy identification of high-alert medications
- no unit storage of concentrated high-alert medications
- opioid medications in a secured place at the bedside
- bedside medication labeled with patient name and drug and dose
- use of standardized abbreviations
- use of safe practices for verbal and telephone orders
- communication of patient allergies and drug reactions
- maintenance of nurse competencies in medication use.

Monitor adherence to discharge policies

Patients may be discharged from postanesthesia care only when they are physiologically ready. To that end, healthcare organizations should have postanesthesia discharge policies and procedures to promote safety and ensure that physicians maintain responsibility for discharge.

Discharge criteria, when used, must be approved by the anesthesiology department and may vary depending on the patient's destination. If the physician responsible for discharge is not available, the PACU nurse may determine that the patient meets discharge criteria and document the name of the physician who accepts responsibility for discharge in the record (ASA "Standards"; Joint Commission; DNV).

CMS's general interpretive guidelines on immediate postoperative care state that policies and procedures should outline requirements for transfer to and from the recovery room. These guidelines state that the postoperative check performed before transfer out of the PACU should assess some of the following, depending on the type of anesthesia and length of surgery (CMS):

- level of activity
- respirations
- blood pressure
- level of consciousness
- patient color.

References

American Society of Anesthesiologists (ASA):

Guidelines for patient care in anesthesiology [online]. 2011 Oct 19 [cited 2013 May 30]. <https://www.asahq.org/~media/For%20Members/documents/Standards%20Guidelines%20Stmts/Patient%20Care%20in%20Anesthesiology.pdf>

Standards for postanesthesia care [online]. 2009 Oct 21 [cited 2013 May 30]. <https://www.asahq.org/~media/For%20Members/documents/Standards%20Guidelines%20Stmts/Postanesthesia%20Care%20Standards%20For.pdf>

- Statement on documentation of anesthesia care [online]. 2008 Oct 22 [cited 2013 May 30]. <https://www.asahq.org/~media/For%20Members/documents/Standards%20Guidelines%20Stmts/Documentation%20of%20Anesthesia%20Care.pdf>
- Statement on the anesthesia care team [online]. 2009 Oct 21 [cited 2013 May 30]. <https://www.asahq.org/~media/For%20Members/documents/Standards%20Guidelines%20Stmts/Documentation%20of%20Anesthesia%20Care.pdf>
- American Society of PeriAnesthesia Nurses (ASPAN). 2012-2014 perianesthesia nursing standards, practice recommendations, and interpretive statements. Cherry Hill (NJ): ASPAN; 2012.
- Centers for Medicare & Medicaid Services (CMS). Appendix A—survey protocol, regulations and interpretive guidelines for hospitals. In: State operations manual [online]. 2011 Dec 22 [cited 2013 May 29]. http://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/downloads/som107ap_a_hospitals.pdf
- Det Norske Veritas (DNV). National Integrated Accreditation for Healthcare Organizations (NIAHO) interpretive guidelines and surveyor guidance. Cincinnati (OH): DNV Healthcare Inc.; 2012 Nov 1.
- Hicks R W, Becker S C, Krenzischek D A, et al. Medication errors in the PACU: A secondary analysis of MEDMARX findings. *J Perianesth Nurs*. 2004 Feb;19(1):18-28. PubMed: <http://www.ncbi.nlm.nih.gov/pubmed/14770379>
- Joint Commission. Comprehensive accreditation manual for hospitals. Oakbrook Terrace (IL): Joint Commission Resources. 2013 Jul 1.
- Krenzischek D A, Clifford T L, Windle P E, et al. Patient safety: Perianesthesia nursing's essential role in safe practice. *J Perianesth Nurs*. 2007 Dec;22(6):385-392. PubMed: <http://www.ncbi.nlm.nih.gov/pubmed/18039510>
- Ross J, Ranum D. Improving patient safety by understanding past experiences in day surgery and PACU. *J Perianesth Nurs*. 2009 Jun;24(3):144-151. PubMed: <http://www.ncbi.nlm.nih.gov/pubmed/19500746>
- Segall N, Bonifacio A S, Schroeder R A, et al. Can we make postoperative patient handovers safer? A systematic review of the literature. *Anesth Analg*. 2012 Jul;115(1):102-115. PubMed: <http://www.ncbi.nlm.nih.gov/pubmed/22543067>
- Tarrac S E. A description of intraoperative and postanesthesia complication rates. *J Perianesth Nurs*. 2006 Apr;21(2):88-96. PubMed: <http://www.ncbi.nlm.nih.gov/pubmed/16600829>
- Windle P E, Krenzischek D A, Mamaril M. Development and initial testing of the perianesthesia safe practices instrument: An ASPAN pilot study. *J Perianesth Nurs*. 2007 Dec;22(6):370-384. PubMed: <http://www.ncbi.nlm.nih.gov/pubmed/18039509>

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