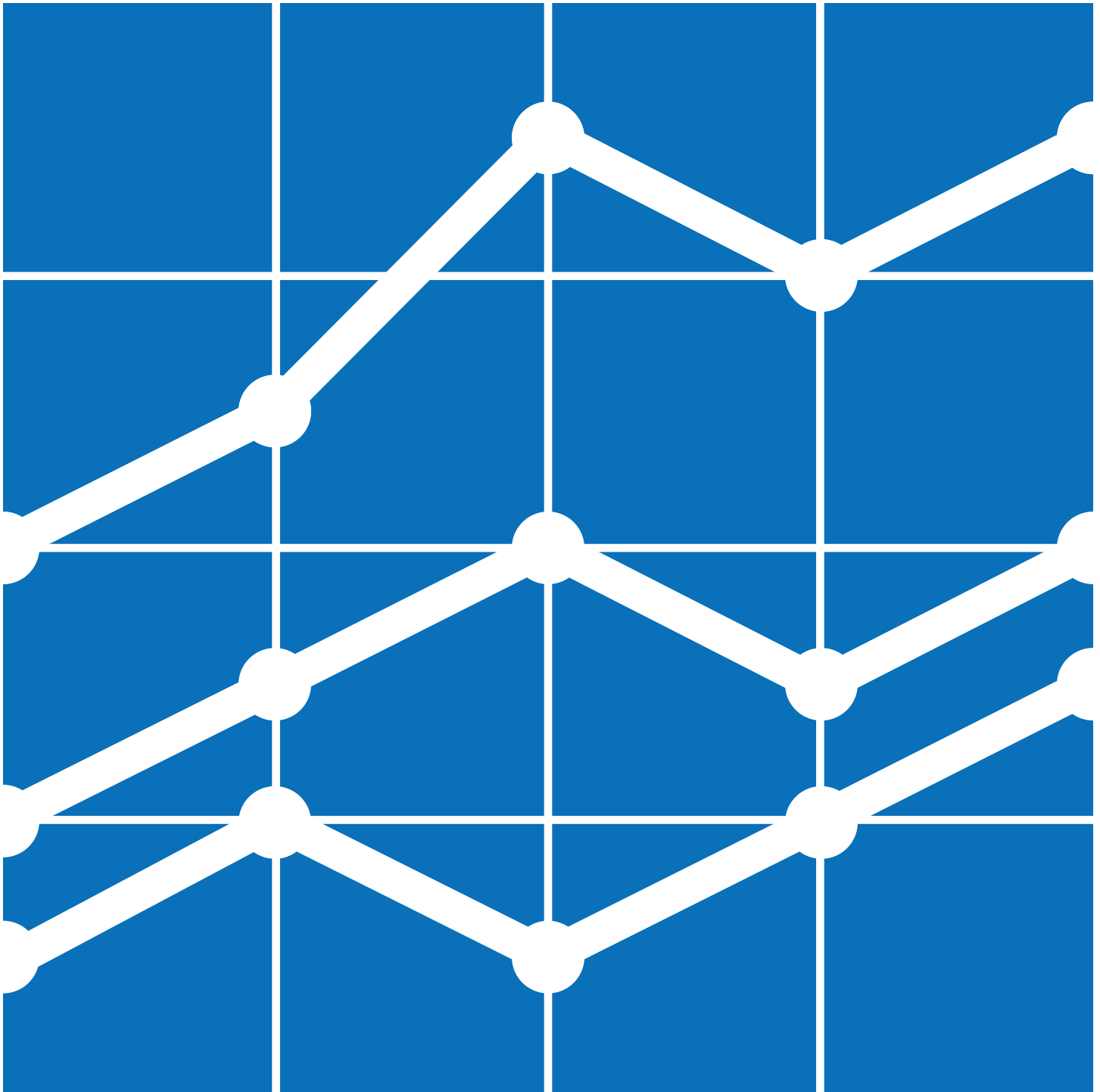


Anesthesia

Specialty
Report



July 2014

Clinical Risk Management
Department

 **MedPro Group**
Berkshire Hathaway's dedicated healthcare liability solution

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Introduction

This report is an analysis of the aggregated data from Medical Protective's anesthesiology claims from 2003 to 2012. The report is designed to provide our insureds with detailed claims data to assist them in purposefully focusing their risk management and patient safety efforts.

Analysis is focused on cases involving traditional anesthesia services; it does not include pain management claims. Additionally, data are based on claim counts, not on dollars paid (unless otherwise noted).

The type of claims and the details associated with them should not be interpreted as an actuarial study or financial statement of dollars paid; however, the information may be referenced for issues of relativity.

A Note About Medical Protective Data

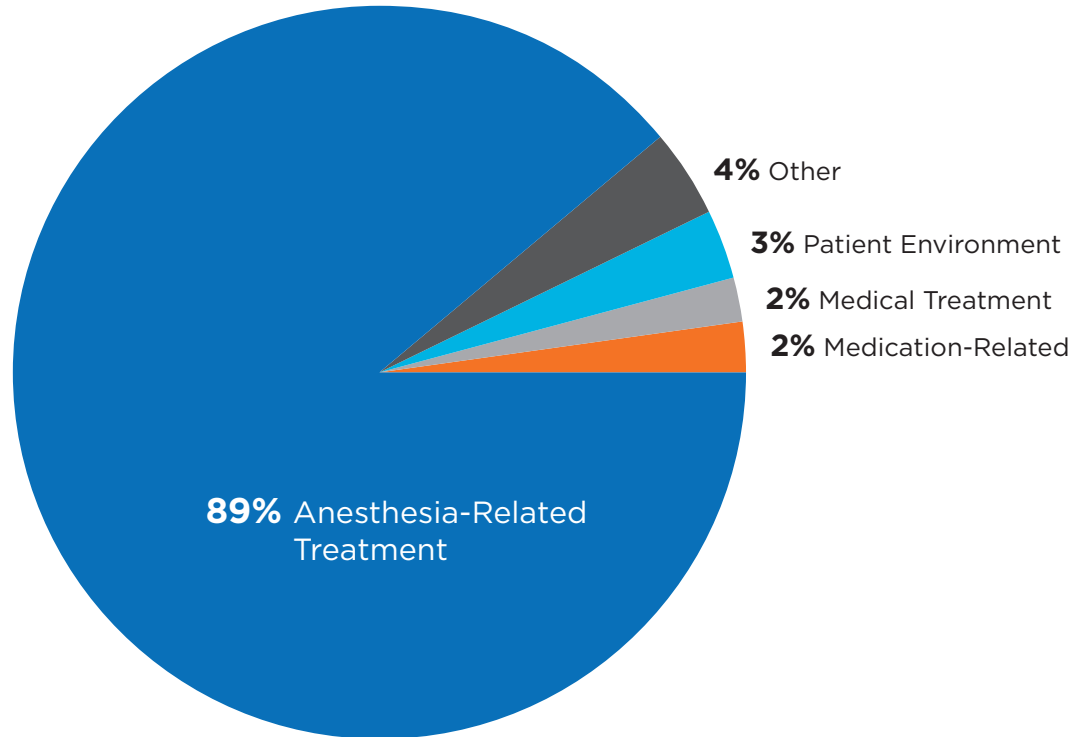
Medical Protective has entered into a partnership with CRICO Strategies, a division of the Risk Management Foundation of the Harvard Medical Institutions. Using CRICO's sophisticated coding taxonomy to code claims data, Medical Protective is better able to identify clinical areas of risk vulnerability.

All data in this report represent a snapshot of Medical Protective's experience with anesthesia claims, including a deep dive into risk factors that drive these claims.

Anesthesia: All Claims Overview

Anesthesia claims are those that occur in a hospital or ambulatory surgery center setting. Figure 1 shows the volume of anesthesia claims by allegation category. Claims related to anesthesia treatment are the most frequent claims for anesthesia providers and involve complications of using anesthetics, positioning for surgical procedures, and the technique used for administering anesthetics.

Figure 1.
Claim Volume by
Allegation Category,
2003-2012



Only 11 percent of all allegations against anesthesiologists fall outside of the anesthesia-related treatment category, including:

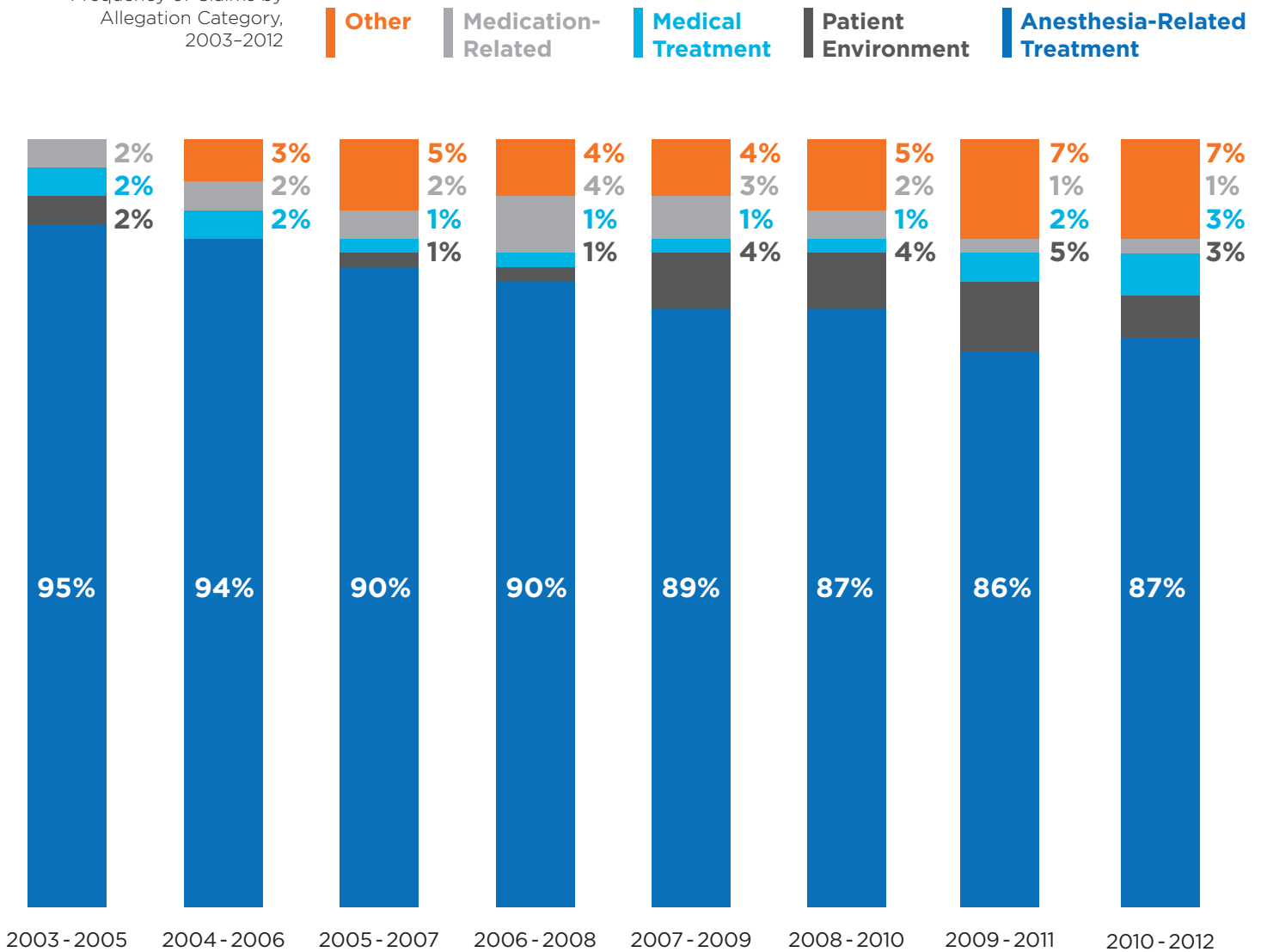
- Patient environment claims, which involve falls and infections.
- Medical treatment claims, which are related to anesthesiologists providing medical care, but not anesthesia (such as placing intravenous [IV] lines in the absence of an IV team, performing spinal taps, or managing an airway).
- Medication-related claims, which include wrong medication or wrong dose given. These claims are strongly related to team communication issues and clinical decision-making, and the medications involved vary.
- “Other” claims, which represent the remainder of the data, in which no one category represents a significant individual amount.

Most of the analysis in this report is based on the anesthesia-related treatment allegations, unless otherwise noted.

Anesthesia: All Claims Frequency

Although anesthesia-related treatment allegations account for the majority of anesthesia claims, a slight increase in the frequency of medical treatment and patient environment claims has occurred over the past 5 years. Figure 2 shows the average frequency of claims over a 10-year period, grouped in 3-year increments.

Figure 2.
Frequency of Claims by
Allegation Category,
2003-2012



NOTE: Any totals not equal to 100 percent are the result of rounding.

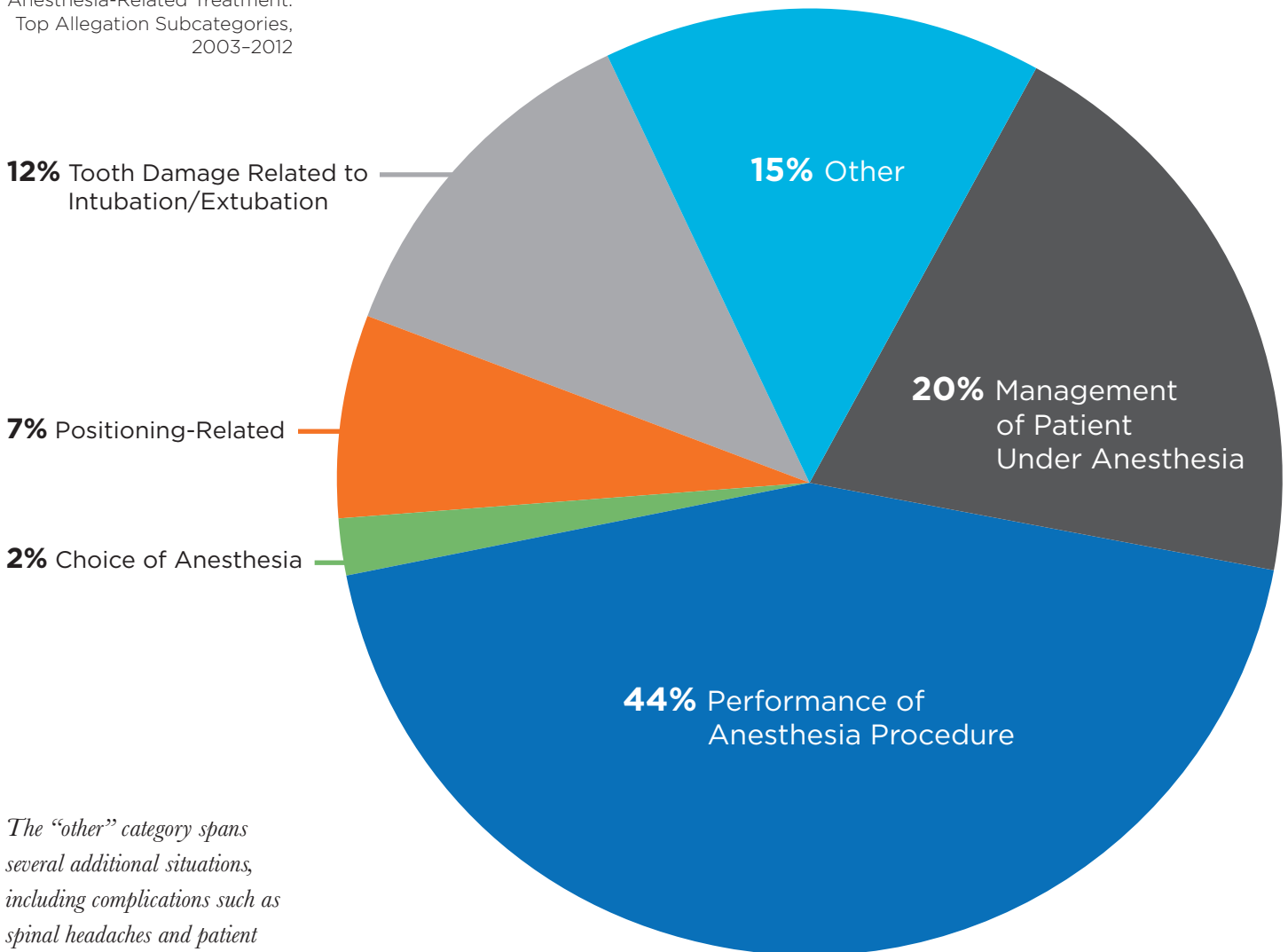
Anesthesia-Related Treatment Claims

Allegation Subcategories

The performance of anesthesia procedures — in particular intubation/extubation and spinal injections — drives close to half of all anesthesia-related treatment claims.

Positioning cases are mostly related to extremity nerve issues, while management cases are related to monitoring of physiological changes — particularly vital signs, fluids, and blood loss during anesthesia. Figure 3 shows a breakdown of the top subcategories within anesthesia-related treatment claims.

Figure 3.
Anesthesia-Related Treatment:
Top Allegation Subcategories,
2003–2012



The “other” category spans several additional situations, including complications such as spinal headaches and patient assessment issues.

Claim Analysis

Improper Performance of Anesthesia Procedure

A patient with multiple comorbidities underwent a lengthy, complex orthopaedic surgery to repair a vertebral fracture with associated reconstruction and spinal fusion. Throughout the procedure, the patient's blood pressure and heart rate fluctuated and repeated vascular surgery interventions were needed. Postoperatively, the patient's condition deteriorated with resulting death.

An autopsy revealed peripheral circulatory failure associated with massive intraoperative bleeding from the bone graft site. Allegations against the anesthesiologist included failure to adequately replace fluids lost, inconsistent documentation related to the estimated blood loss, and failure to communicate with the surgeon about the patient's status.

Risk Management Issues for This Claim

- Lack of adequate communication between providers regarding changes in the patient's condition
 - Insufficient documentation of all changes in condition during surgery
 - Failure to adequately assess the patient's complex medical history
-

Claim Analysis

Improper Management of Patient Under Anesthesia

A patient in end-stage renal failure was admitted for replacement of an access catheter. The patient had dialyzed that day and was rated as an ASA Class 4. During the short procedure, the patient's blood pressure dropped, and fluids and atropine were administered. Bradycardia developed, and the code team was called.

Although multiple doses of epinephrine were given, the operating room team had to wait for the code team to bring a defibrillator. The patient was resuscitated but suffered profound neurological damage. Allegations against the anesthesiologist included inadequate monitoring of the patient's physiological status and failure to treat the low fluid volume leading to hypotension.

Risk Management Issues for This Claim

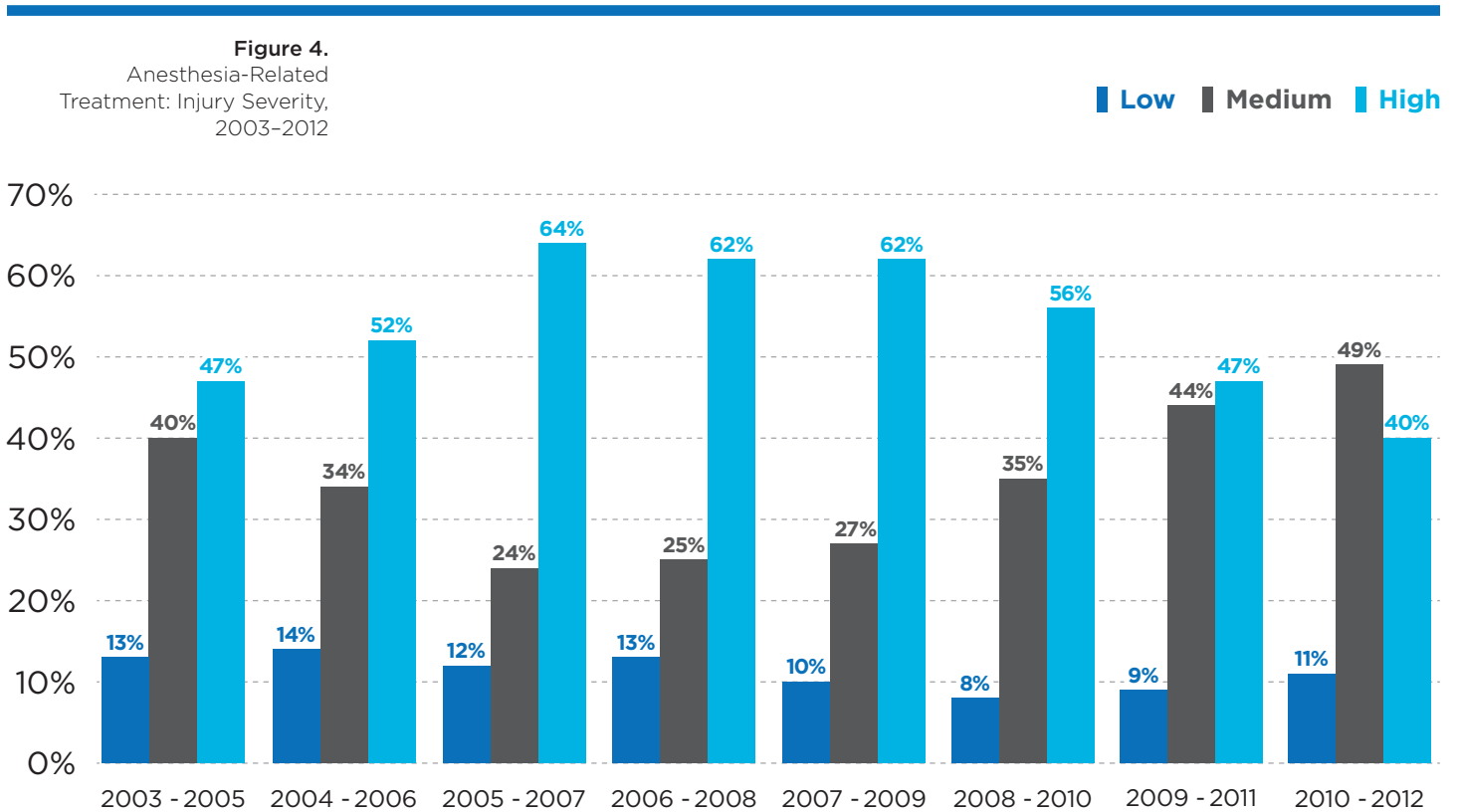
- Clinical judgment factors related to selection of the medication regimen most appropriate for the patient's condition
 - Inadequate system of care resulting in a lack of immediate availability of resuscitation equipment
-

Injury Severity

The percentage of anesthesia-related treatment claims associated with a high-severity injury, including permanent injury or death, began increasing in 2005. Cases resulting in death drove the majority of that spike. Over the past 4 years, the percentage of high-severity claims has decreased somewhat, but they remain persistent.

Figure 4 shows injury severity associated with anesthesia-related treatment claims over a 10-year period, grouped in 3-year increments.

Of note, allegations of improper performance of anesthesia procedures and improper management of patients under anesthesia were seen most often in cases resulting in death.



The majority of the high-severity injuries occurred in adult patients ages 30–64. Recurring patient comorbidities were observed within this data set, including hypertension, obesity, smoking, cardiovascular disease, and diabetes.

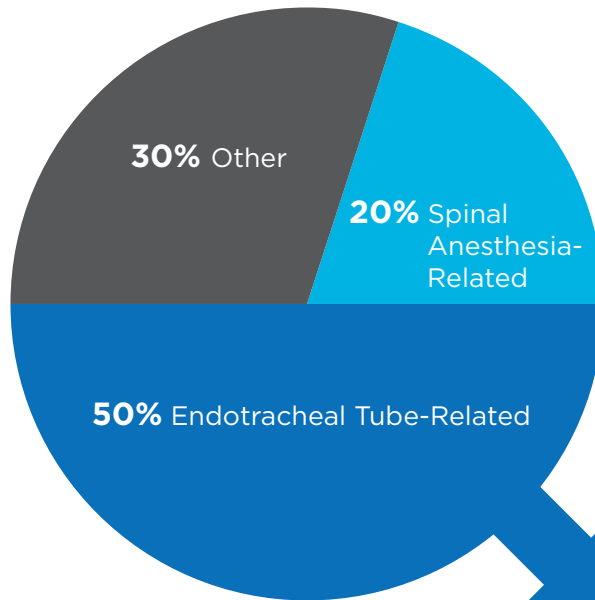
As shown in Figure 4, medium-severity injuries — including infections, delayed recovery from anesthetic medications, and nondisabling injuries — have increased in frequency over the last several years.

NOTE: Any totals not equal to 100 percent are the result of rounding.

Procedure Types

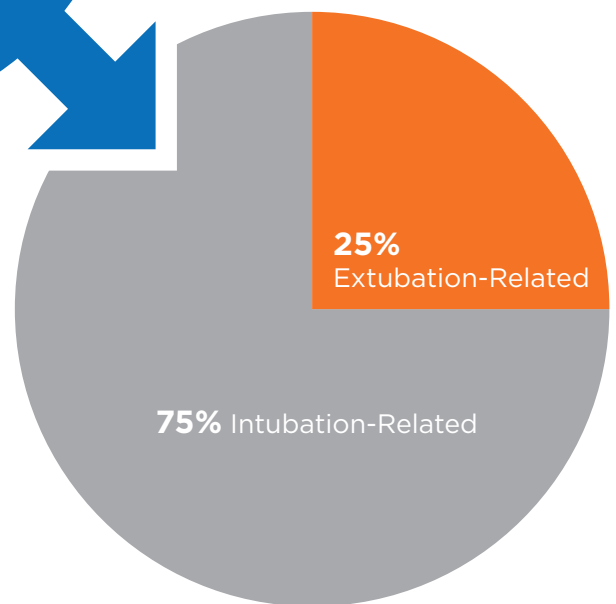
Half of all anesthesia-related treatment claims associated with the performance of procedures involve intubation and extubation, as shown in Figure 5.

Figure 5.
Anesthesia-Related
Treatment: Procedure Types,
2003-2012



Inadequate patient assessment is a frequent theme, especially within the intubation claims. Patients who have obesity and/or hypertension risk factors are seen in almost one-third of the extubation claims.

Of note, although claims arising out of intubation procedures clearly dominate this category, the average total incurred dollars per extubation claim is almost twice that of the intubation claims.



NOTE: Total incurred = Indemnity plus expense dollars reserved on open claims and paid on closed claims.

Claim Analysis

Improper Performance of Anesthesia Procedure Related to Extubation

An obese patient who had obstructive sleep apnea (and failed to improve with CPAP) was admitted for uvulopharyngopalatoplasty and tonsillectomy. No preoperative blood work was ordered because of the patient's young age and no previous history of cardiac or pulmonary issues. After intubation, hypertension was controlled with fentanyl. The patient's copious bleeding during surgery responded well to packing.

The anesthesiologist precipitously extubated the patient while the patient was still under the effect of anesthesia and removed monitors after the patient attempted to self-extubate. No reversal agent was administered. The patient became hypoxic and was reintubated, but subsequently died. An autopsy revealed hypertrophic cardiomyopathy.

Risk Management Issues for This Claim

- Lack of a facility policy requiring a more extensive preoperative work-up
 - Lack of a thorough history and physical complicated by failure to order preoperative testing
 - Clinical judgment issues related to the selection and management of medication most appropriate for the patient's condition
-

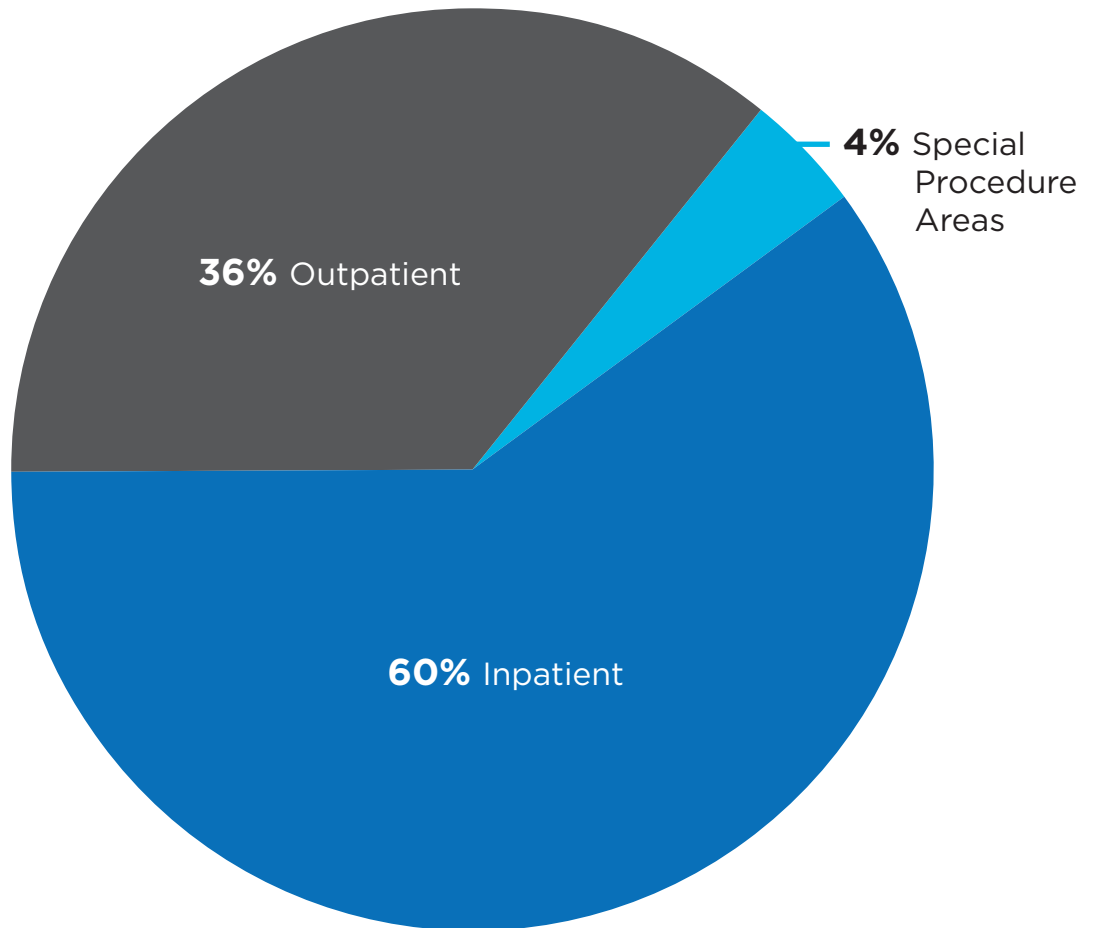
Practice Setting

More than half of the anesthesia-related treatment claims from 2003 to 2012 occurred in inpatient settings, as shown in Figure 6. Of these, the vast majority occurred in the operating room, as opposed to in the recovery or the post-anesthesia care unit areas.

Outpatient claims are strictly tied to ambulatory surgery settings.

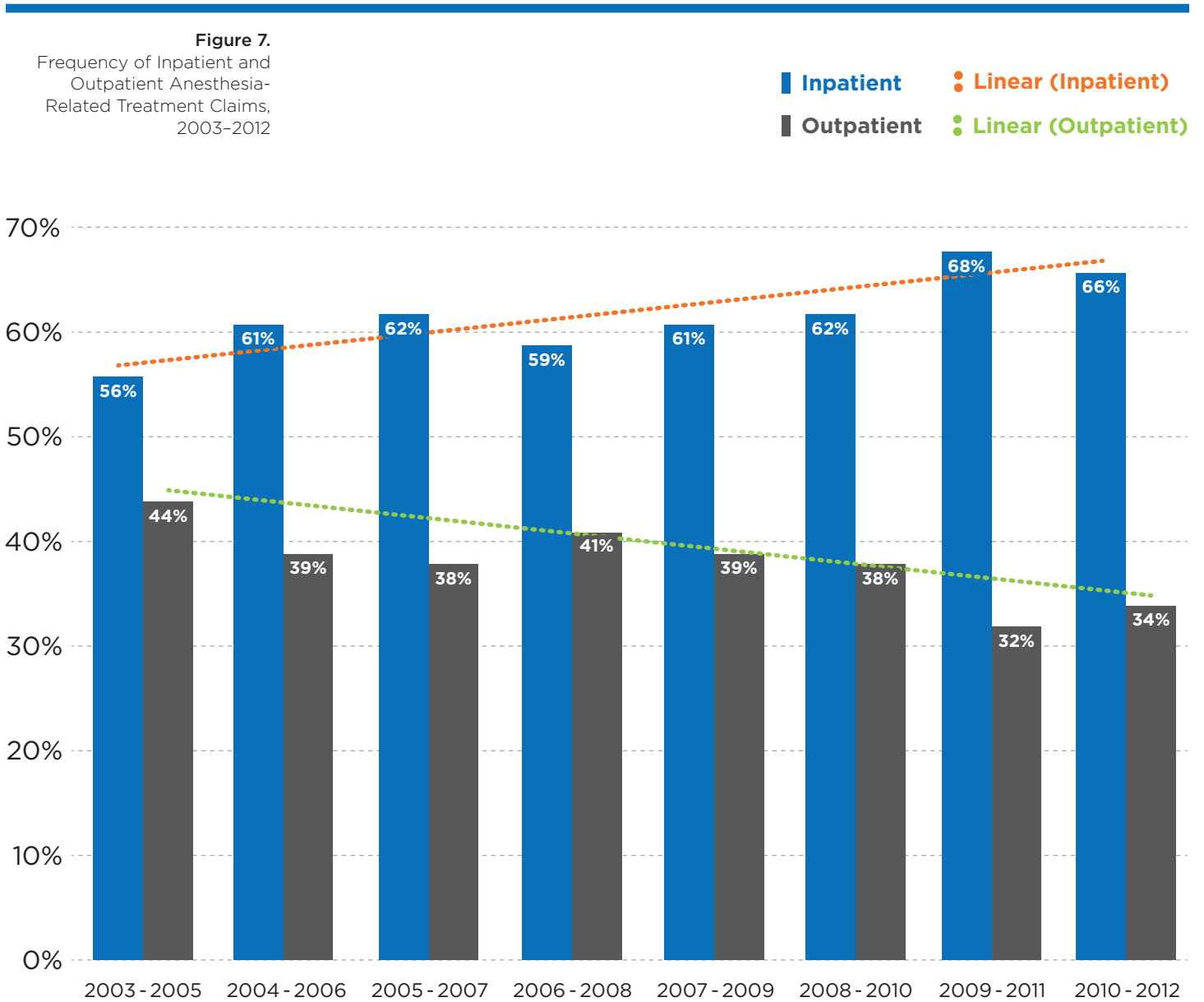
Although the volume of claims occurring in special procedure areas is limited, the majority of these claims are related to the performance of endoscopy procedures.

Figure 6.
Volume of Anesthesia-
Related Treatment Claims by
Practice Setting, 2003-2012



NOTE: The mix of inpatient and outpatient claims continues to change over time.

Figure 7 shows the frequency of inpatient and outpatient anesthesia-related treatment claims over a 10-year period, grouped in 3-year increments.

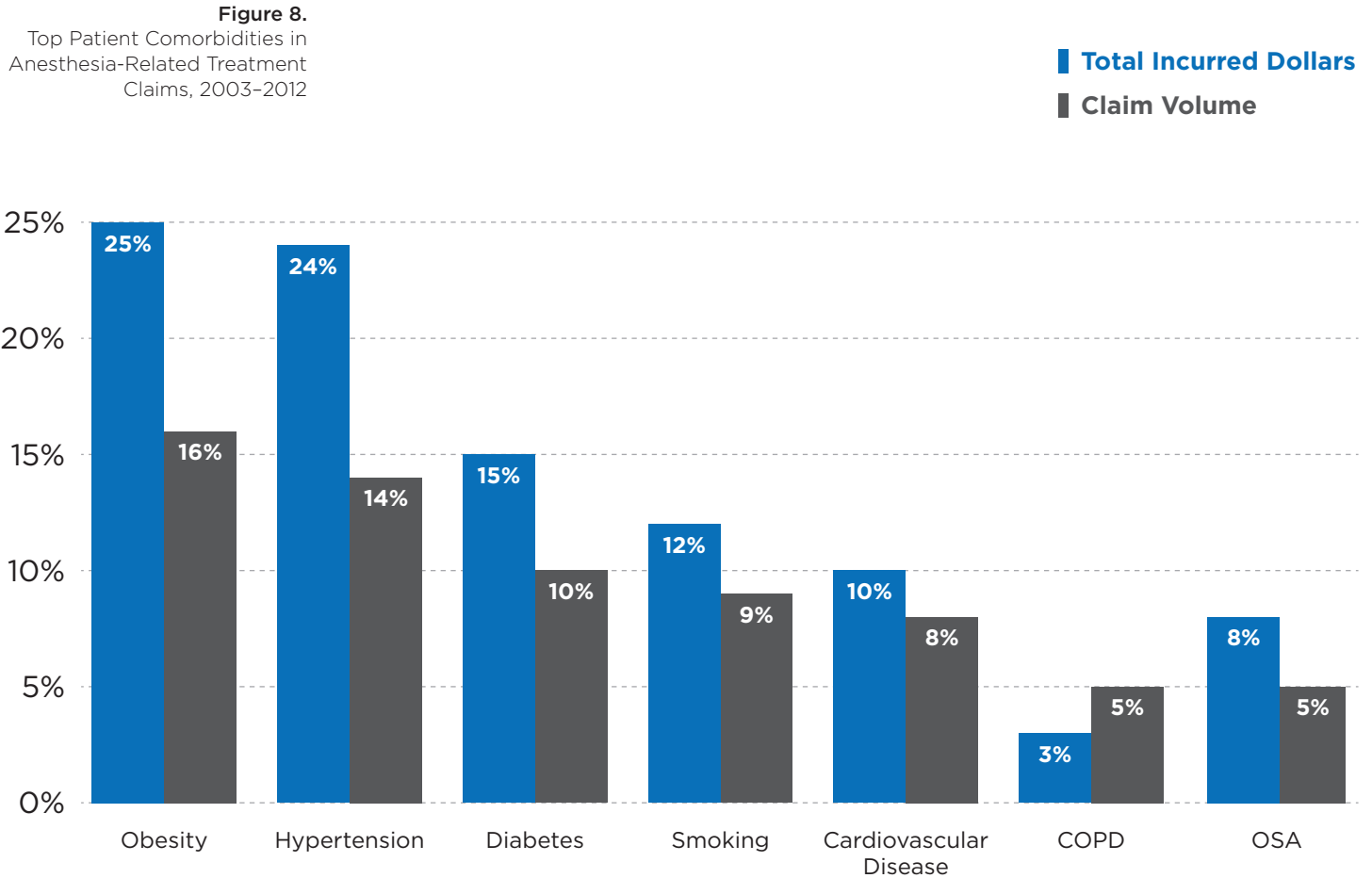


Patient Factors

Recurring patient comorbidities are observed across all anesthesia-related treatment claims, with obesity and hypertension topping the list.

► **NOTE:** More than one comorbidity may be coded per claim.

Examining the most frequently occurring comorbidities in conjunction with total incurred dollars reveals that hypertension and obesity account for only one-third of the total claim volume, but represent almost 50 percent of total incurred dollars, as show in Figure 8.



Top Contributing Factors

Contributing factors are broad areas of concern that may have contributed to allegations, injuries, or initiation of claims. These factors reflect issues that may be amenable to loss-prevention strategies. A claim may have one or more contributing factors.

As one would expect, technical skill issues — the broad category of skill associated with the practice of anesthesiology — and issues related to clinical judgment are persistent and recurring. Each of these factors occurs in approximately two-thirds of anesthesia-related treatment claims, as shown in Figure 9. The highest volume of technical skill issues was identified in the intubation-related claims.

Figure 9.
Top Factors That Contribute to
Anesthesia-Related Treatment
Claims, 2003–2012

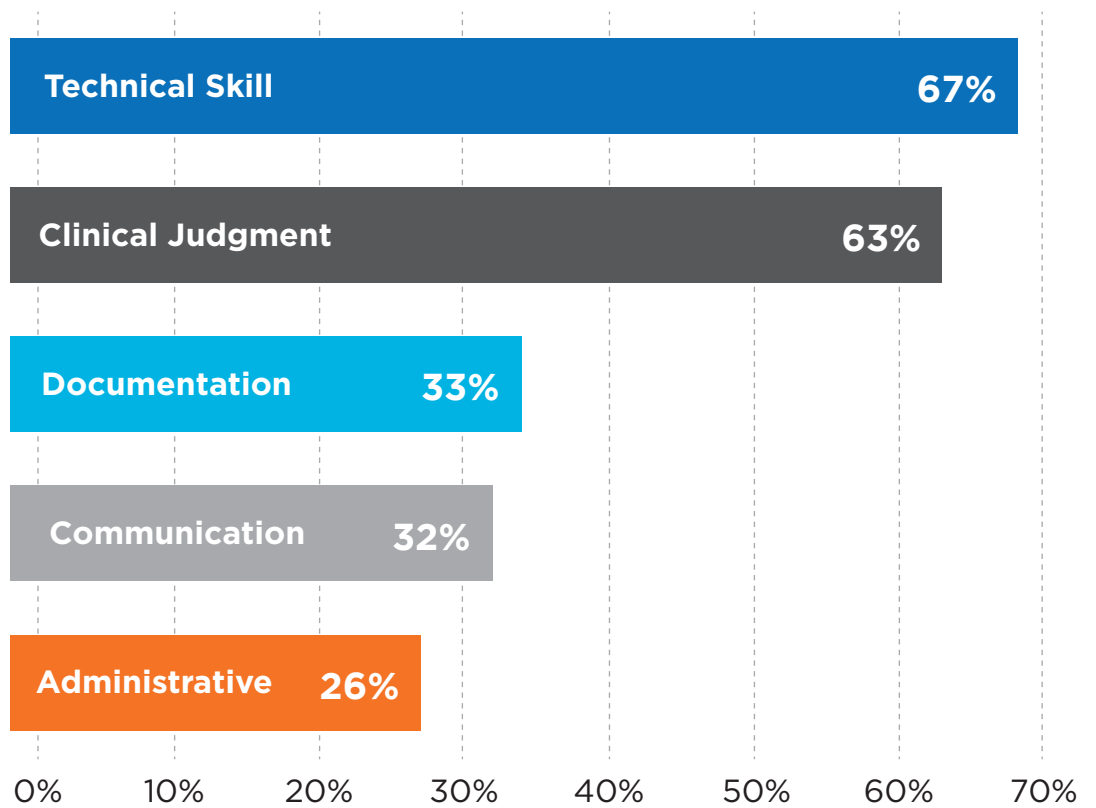
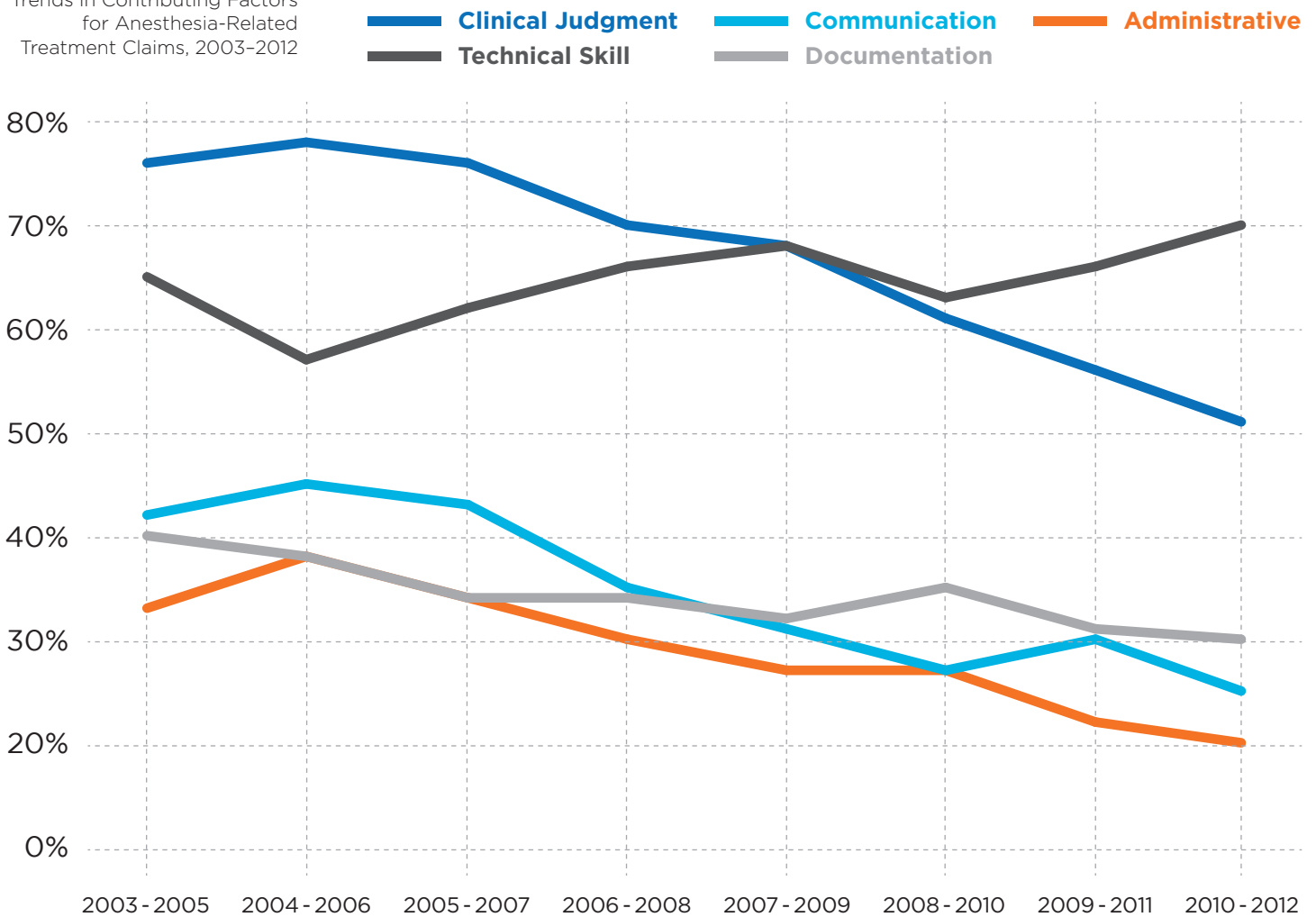


Figure 10 shows how these factors contribute to anesthesia-related treatment claims over time. When analyzed across 3-year periods, a downward trend in all factors but technical skill is seen. Of note, clinical judgment factors have declined most dramatically. However, due to the cyclical nature of medical malpractice claims, it is too early to determine whether this decline will continue.

Figure 10.
Trends in Contributing Factors
for Anesthesia-Related
Treatment Claims, 2003–2012



Documentation factors reflect lack of, insufficient, or inconsistent documentation within the medical record.

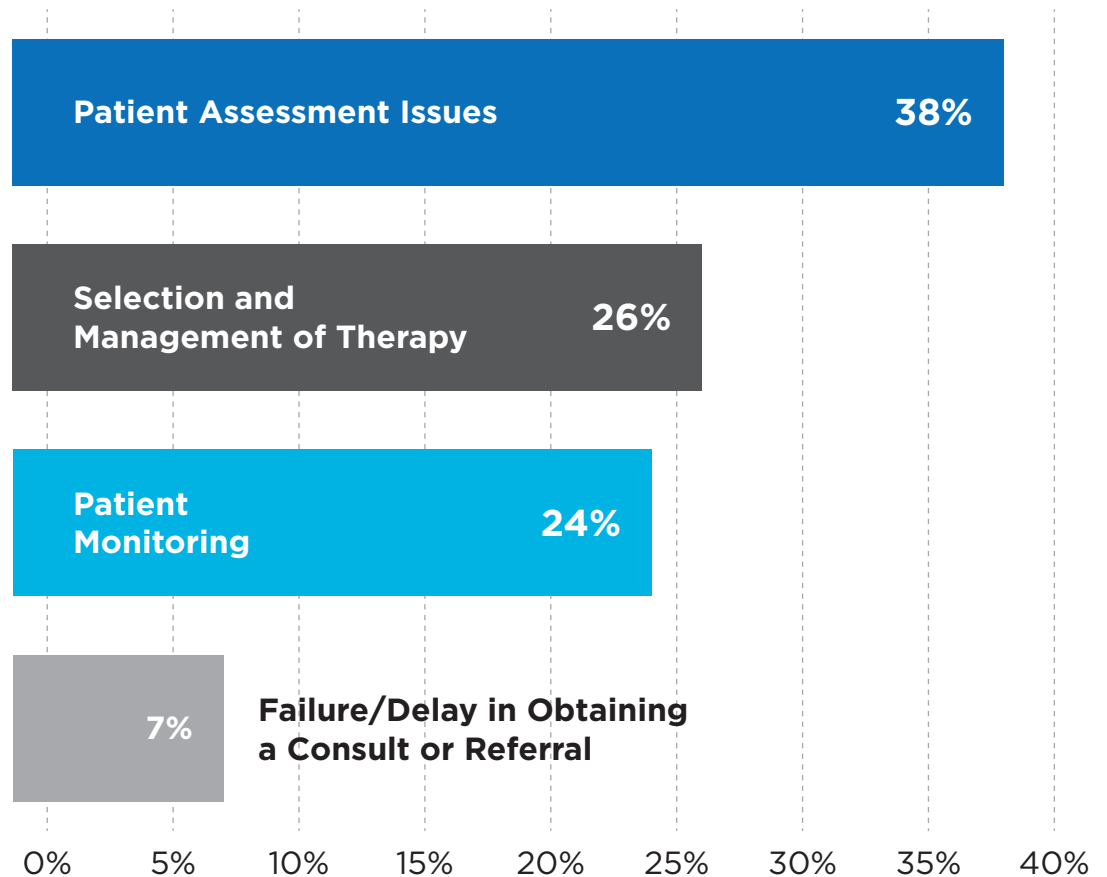
Communication issues between providers are seen more frequently than between providers and patients/families. Of note, this trend is opposite of what is seen across all specialty claims for the same timeframe (2003–2012).

Administrative issues are predominately reflective of not following existing policies/protocols, as well as staffing issues (training/education, patient scheduling/waiting, credentialing, and physician coverage).

Focus on Clinical Judgment

The clinical judgment category is broad. Across anesthesia-related treatment claims, clinical judgment is heavily concentrated on patient assessment issues, as shown in Figure 11.

Figure 11.
Top Factors That Contribute
to Clinical Judgment Issues,
2003-2012



Top patient assessment issues are related to inadequate taking of the patient's history, inadequate performance of a physical exam, failure to note changing clinical information, and failure to rule out abnormal findings. Failure or delay in ordering additional diagnostic tests was also noted, and concerns related to a narrow diagnostic focus were frequently seen.

Issues related to selection and management of therapy are heavily concentrated on selecting the most appropriate medication for the patient's condition and selecting the type of technique used during invasive procedures. Patient monitoring issues revolve around physiological changes occurring during treatment.

Claim Analysis: Selection and Management of Medication Therapy

The patient was admitted for surgical repair of a fractured femur. Comorbidities included long-term steroid use. An advanced practice nurse (APN) ordered a preoperative medical evaluation and optimization of the patient's medical condition. The anesthesiologist spoke with the surgeon, who indicated that the procedure would take just a short time with little blood loss. The medical evaluation order was cancelled, and the patient was taken to surgery.

The anesthesiologist was unaware that no one had ordered fluids and that the steroid dosage had been held preoperatively.

After an uneventful surgery, the patient developed hypotension and decreased urine output. Hemoglobin dropped, and the patient became confused after transfer to the inpatient unit. Hypovolemic shock with acute renal failure was diagnosed.

No IV steroids were ordered, even though the patient could not tolerate oral medication due to nausea/vomiting. Nursing staff documented the intolerance to oral medications in the record, but did not tell the attending physician. Ultimately, the patient's condition declined with resulting death from a spinal cord infarct.

Risk Management Issues for This Claim

- Failure to order medications appropriate for the patient's condition
 - Failure/delay in obtaining a consult upon changes in condition
 - Lack of effective communication among providers
 - Failure to identify the provider coordinating the patient's care
-

Anesthesia Care Team Considerations

Medical Protective's aggregated anesthesiology data from 2003 to 2012 does not provide enough claims involving anesthesia care teams to complete a separate analysis. However, of the claims that include APNs, those involving monitored intraoperative anesthesia tended to be the most serious — specifically, intraoperative monitoring of patients' vital signs, appropriate responses to changes, and delays in timely consulting with the collaborating or supervising anesthesiologist.

Several of the claims that involve APNs note communication issues with the collaborating or supervising anesthesiologist.

Claim Analysis

Improper Management of Patient Under Anesthesia

A morbidly obese patient who had hypertension and diabetes was admitted for endoscopic retrograde cholangiopancreatography (ERCP). An anesthesiologist evaluated the patient in the preoperative area; however, an APN was responsible for both induction and management of anesthesia.

The surgeon had not informed either anesthesia provider of the patient's obstructive sleep apnea and nightly use of CPAP. The obstructive sleep apnea was documented in the patient's medical record, but it is not clear whether either provider was aware of the documentation.

Blood pressure was elevated when surgery began, and heart rate escalated after induction. The patient was in prone position and in a deep level of sedation when a drop in oxygen saturation and blood pressure occurred.

Surgery continued after the APN adjusted the patient's chin position. However, the patient's blood pressure dropped again, a code was called, and intubation was required. The patient sustained cardiac arrest and was left in a permanent vegetative state.

Risk Management Issues for This Claim

- Inadequate communication among providers related to review of the medical record and regarding the patient's preoperative and intraoperative status changes
 - Failure to assess the reason for escalation of the patient's blood pressure and heart rate immediately after induction of anesthesia
 - Inadequate supervision of the APN (as required in this particular state)
-

Key Points

- Anesthesia-related treatment claims are the most frequent claims for anesthesia providers and involve complications of using anesthetics, positioning for surgical procedures, and the technique used for administering anesthetics.
- The performance of anesthesia procedures drives close to half of all anesthesia-related treatment claims.
- Half of all procedure-related allegations involve the performance of intubation/extubation procedures.
- Recurring patient comorbidities are observed across all anesthesia-related treatment claims, with obesity and hypertension topping the list.
- Contributing factors — including technical skill, clinical judgment, documentation, communication among providers, and administrative issues — are persistent in anesthesia-related treatment claims.
- Claims involving clinical judgment are heavily concentrated on patient assessment issues, including inadequate taking of the patient's history, inadequate performance of a physical exam, failure to note changing clinical information, and failure to rule out abnormal findings. Failure or delay in ordering additional diagnostic tests was also noted, and concerns related to a narrow diagnostic focus were frequently seen.
- Contributing factors may be amenable to loss-prevention strategies that target areas of risk concern.

This document should not be construed as establishing professional practice standards or providing legal advice. Compliance with any of the recommendations contained herein in no way guarantees the fulfillment of your obligations as may be required by any local, state, or

federal laws, regulations, or other requirements. Readers are advised to consult a qualified attorney or other professional regarding the information and issues discussed herein, and for advice pertaining to a specific situation.



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