



Exploring the Benefits of Root-Cause Analysis of Medical Professional Liability Claims

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The analysis of medical professional liability (MPL) data can offer a unique lens into a number of perspectives that are important to physicians and health systems. Most notably, it can provide intelligence to make the delivery of healthcare safer and ultimately reduce malpractice exposure for physicians and hospitals.

None of this, however, is easily accomplished. Much of that is due to the inherent complexity of the healthcare system. Instead of consistency and certainty, there exists persistent variability across the spectrum – no patient or provider is alike. To be clear, we don't seek to eliminate this variability – in fact, it should be considered one of the strengths of the system. We benefit from the expertise of individual providers who are not like each other and have built their own individual expertise. However, variability also plays out in a negative way: From one provider to another, cognitive and technical skills are not consistent across the board. This puts the individual patient at risk because the patient has no way of assessing whether their provider is as skilled as the next in diagnosing their condition or in performing a surgical procedure. Only when harm occurs do these variabilities in patient care become evident.

Analyzing malpractice data allows us to identify reliable ways by which healthcare should be delivered, potentially reducing the negative impacts of the inherent vulnerabilities of the patient care delivery system. Through a rigorous capture of a credible volume of malpractice data, we can find commonalities across adverse events to bring a standardized approach to minimize risk, decrease the odds of patient harm, and ultimately improve quality across the spectrum of care.

Boston-based Coverys is an insurer of health systems and healthcare practitioners across the United States. Over the last few years, Coverys has invested significant resources in analyzing nearly 10 years of malpractice claims to identify the root-cause factors underlying adverse clinical outcomes. These claims cover the spectrum of both hospital and physician practice-related litigation. The goal of this work is to identify the “why” behind each claim and to develop “signal intelligence” with the objective of proactively improving patient outcomes. In this article, we will illustrate how this approach has been developed, the lessons learned by Coverys throughout its construction, the taxonomy built and the methodologies that have been applied, and finally the potential impact on fixing long-term problem areas that have contributed to recurring patient harm and malpractice litigation.

The Methodology

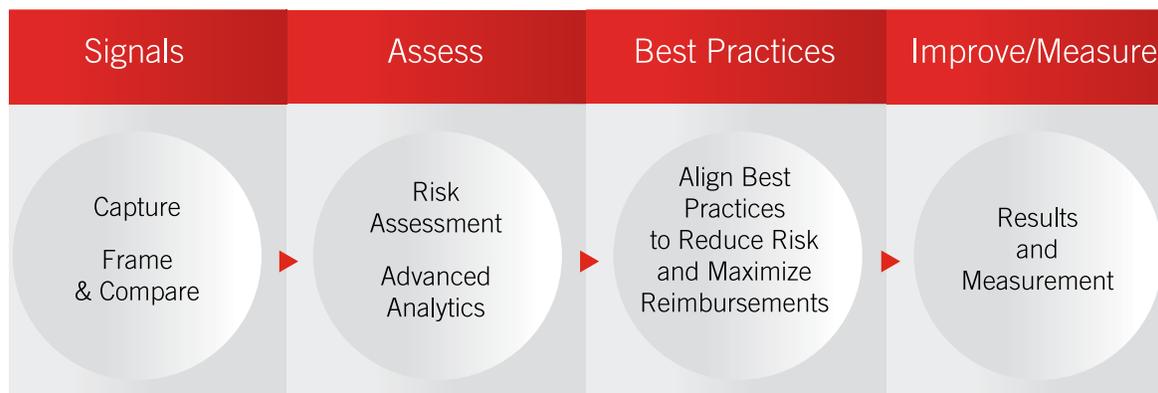
Coverys has developed a five-step methodology by which malpractice data can be made “actionable.”

1. Capture and identify the signals from the past through coded malpractice data: Can we collect drivers of medical malpractice events from myriad sources in a standardized way?
2. Use those signals to assess whether identified vulnerabilities continue to be at play in the

current environment: Are the current and future risks similar to the past malpractice risks which generated our data?

3. If the factors are still present, use advanced analytics to gauge the likelihood of harm once again reaching the patient: Can we apply statistical analysis to the data to address questions about prospective malpractice risk?
4. Provide risk recommendations that are directly responsive to the results of our analysis: Can we explain the statistically significant results to health care providers in the context of their environment and how they deliver care?
5. Bridge those risk recommendations to quality measures that impact the ways hospitals and physicians are being evaluated: Can we measure the impacts of changing risk environments in terms of not just better clinical outcomes and lower claims, but also through financial benefits?

Coverys Value-Based Model to Improve Outcomes



The Data Coding Challenge

The methodology can only work if there is a standardized and consistent approach to analyzing malpractice claims and reducing subjective bias. Two components were identified as critical:

1. The analysts needed to develop a high level of familiarity with every single code in the taxonomy.
2. Ongoing testing and monitoring was necessary to gauge the level of agreement between coders.

A significant amount of attention was given to interrater reliability, the concept of making subjective analysis as consistent as possible when there are multiple reviewers. When Coverys began this process, the first step was to build a taxonomy that contained codes to be used as the root-cause drivers that were being identified. However, it was quickly apparent that there was dramatic inconsistency in the identification of these factors and the application of the codes, from both case to case and from analyst to analyst. Early testing showed a wide range of codes being applied to singular cases. In one instance, eight analysts looking at the same missed-diagnosis case came up with eight distinct conclusions as to the primary underlying causation factors. These ranged from narrow diagnostic focus, to inadequate patient evaluation, to communication-related issues, to referral management confusion. In that particular case, all of the factors were present, but not all were the primary drivers behind the missed diagnosis. In the end, the key causation issue was the failure to adequately evaluate the patient in the initial step of the diagnostic process. The other issues were related, but played a more secondary role.

With increased practice and ongoing monitoring among the coders, the consistency of MPL root-cause coding began to improve. When agreement between coders reached an 80-90% level, Coverys was able to begin the actual work of analyzing and coding its malpractice cases.

Results of the Analysis

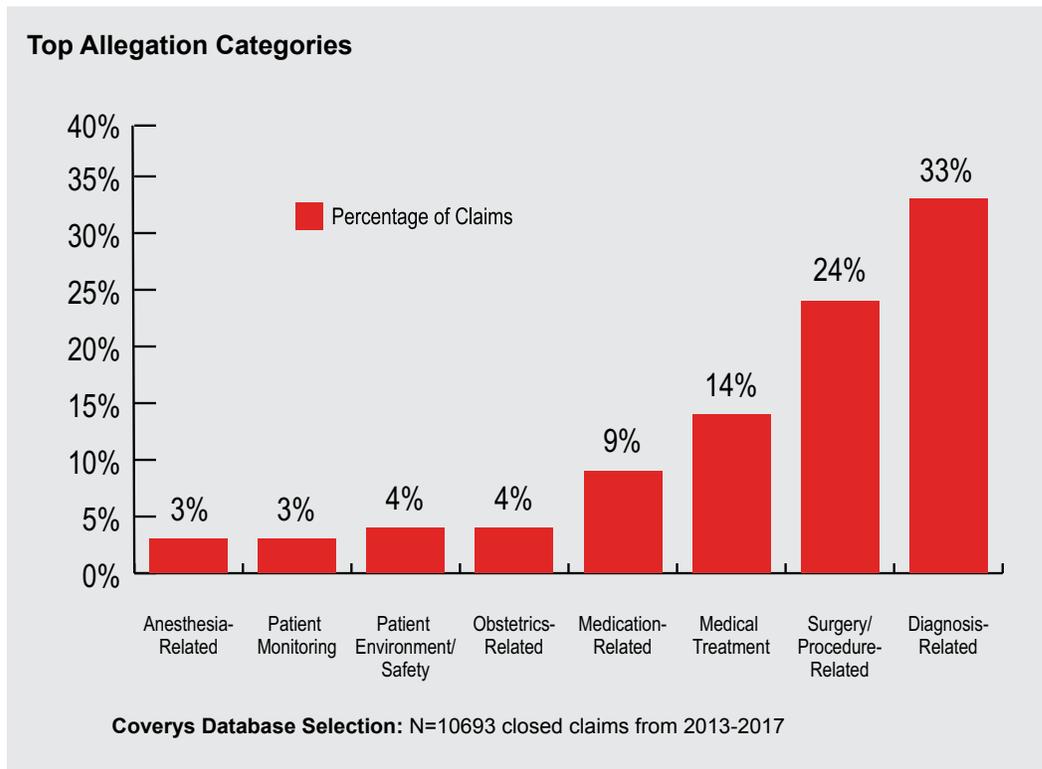
The intelligence extracted from a root-cause-based analysis can identify vulnerabilities that have existed in the past and which may still be present in today's environment, leading to cycles or recurrence of preventable tragedies. Coverys believes it is the responsibility of every malpractice insurer to glean this intelligence from its cases and to report back to its constituent members so that mistakes that occurred in the past have a much lower likelihood of happening in the future. This is especially critical, not only to avoid patient harm and thereby potential litigation, but also because of the emerging national emphasis on value-based care.

Interestingly, a root-cause-based analysis of MPL data must overcome various data limitations. The most formidable of these limitations are:

- MPL claims are relatively infrequent, making it a challenge to amass a statistically credible database.
- MPL claim data provides us with a look to the past, sometimes the distant past.
- MPL cases often occur because of a unique convergence of factors, i.e., events that may not transpire in the same way ever again.

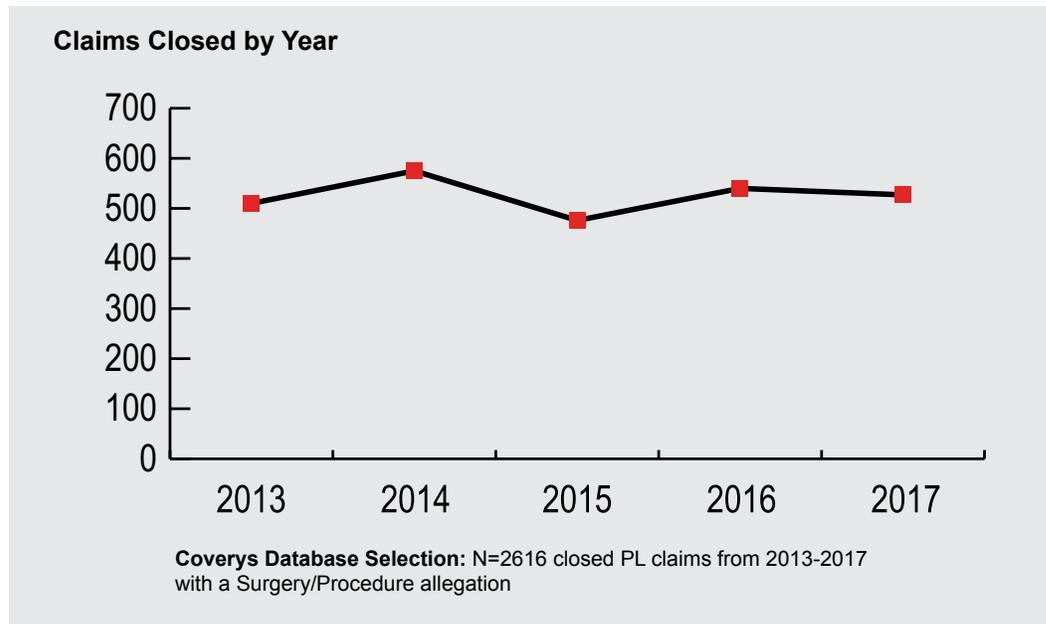
Despite these characteristics, MPL data holds valuable and useful information. The lessons from MPL analysis – and the resulting signals – should be actively integrated into the delivery of patient care. Unless this occurs, there is a distinct likelihood that preventable adverse outcomes will continue to recur.

A review of 10,693 Coverys claims that closed over the past five years (2013-2017) shows target areas that are well known within the world of risk management. Diagnosis-related risk is the leading category (33 percent of claims), followed by surgical/procedural-related (24 percent of claims).



While diagnosis-related claims continue to be the top player in MPL claims, attention must still be paid to surgical claims. According to Coverys data, 2,616 claims out of the 10,693 (2013-2017) – or 24 percent – have been surgical or procedural-related. Surgical claims are largely inpatient – outpatient/ambulatory surgical claims accounted for just 5 percent of overall surgical claims in 2017. The average indemnity paid for surgical claims has been in the range of \$260,000 over the past five years, compared to \$450,000-\$500,000 for failure-to-diagnose cases. Taking into account a relatively stable volume of surgical procedures, the frequency of surgical claims per year has remained flat, hovering between a low of 467 (2015) and a high of 575 (2014). The most recent year (2017) comes in with a number almost directly in between with 527 claims.

A stable surgical claim frequency trend could be viewed in two different ways. To defenders, it



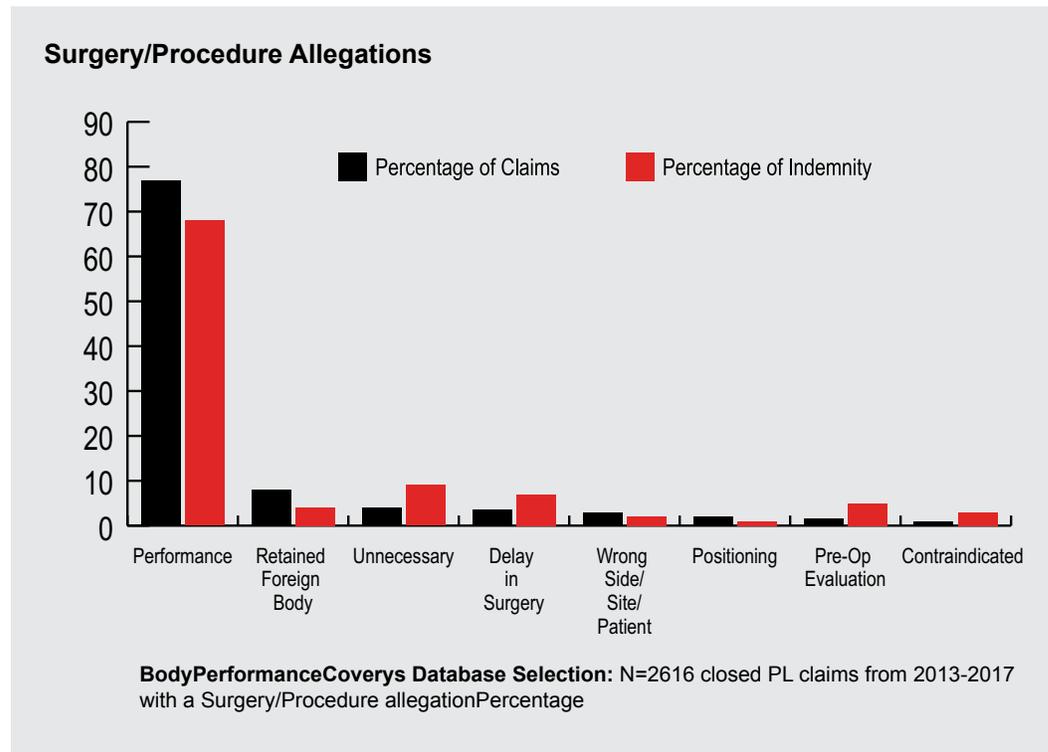
may appear as good news that things are not getting worse. However, to those responsible for a patient safety agenda, this could be interpreted as a lack of improvement in the surgical medical professional liability space. This secondary view is contrary to the numerous improvement initiatives over the past 10-15 years focused on the inpatient surgical environment. These range from the creation and dissemination of the Surgical Safety Checklist, as well as surgical simulation training for numerous specialties, technology-based tools to prevent retained foreign bodies, and enhanced communication between providers as patients move from preop to intraop to postop. Therefore, if we view stable frequency as a lack of improvement, it raises the question: “Why haven’t these efforts had more impact in reducing claims over the last decade?”

To be fair, there are an array of other factors that drive malpractice claims. These include the presence or lack of state tort reform, societal attitudes towards lawsuits, changing standards of negligence, economic impact experienced by patients from adverse outcomes, and jurisdictions that are favorable to jury awards. However, the focus of this analysis is the true causation factors at the root of these cases and whether or not the delivery of surgical care has improved.

A capture of the aggregated allegations tells part of the story. While several allegation categories appear to be at relatively small levels – for example, retained foreign bodies, unnecessary surgery, delay in surgery, wrong site-wrong patient, etc. – allegations regarding “performance” are more prominent than ever.

The continued dominance of performance issues indicates a need to address the technical skill elements required in any surgical procedure. Technical skill elements would include: the

“mechanics” of the surgery, the attention paid to avoid inadvertent errors (e.g., nicked arteries or organs), and the recognition of unexpected situations and resulting adaptation of procedures. The most frequent surgical specialties named in claims are, in descending order, general surgery (37% of the surgical claims, 46% of the indemnity dollars), orthopedic surgery (25% of the claims,



22% of the dollars), neurosurgery (12% of the claims, 12% of the dollars), and plastic surgery (6% of the claims, 1% of the dollars). With each of these, “performance” is the top allegation and risk management category.

Treating this data as “signal intelligence,” the following questions should be asked of any healthcare entity where technical skills might be at issue:

Investigating Signal Intelligence Regarding Surgical Performance

- Are surgeons fully and appropriately credentialed to perform their required tasks? Have all critical perspectives been incorporated into performance reviews, including difficult topics such as physician impairment? Is there a process by which changes in the physician’s performance (whether skill-based or cognitive-based) can be detected on an ongoing basis?
- Are surgeons maintaining their skills on an ongoing basis, meeting all training and other requirements put forward by their specialty?
- Has specific computer- and skill-based training been designed for their specialty? Is it being routinely used?
- Is there a team-based environment in the operating room settings?
- Have all surgical staff been taught the fundamentals of high-reliability communication and performance?
- Are there equipment-related issues that impact high-level performance?

- Have distractions in the operating room setting ever been studied in the hospital or ambulatory setting?
 - What is the noise factor in the ORs while surgeries are being performed? This could be music, conversations, cell phones, interruptions by outside people, etc.
 - Are ORs routinely set up in ways that support the surgeon’s ability to closely focus on the technical aspects of the surgical procedure?
 - Is there a well-formed team in place in the OR? Does the surgeon know the OR staff? Does the OR staff know what the surgeon needs to accurately and expertly perform the procedure?

The answers to these and other key questions can be gleaned during a risk assessment process. If serious vulnerabilities are found as an evaluation is performed, those will drive responsive risk recommendations. That is the strength of malpractice data. It will highlight where risks have been present in the past and will pose the appropriate question: “Are these factors still at play?”

If they are, it is only a matter of time before harm once again reaches the patient – with outcomes that might prompt a lawsuit. Thus, the confirmation of active vulnerabilities should trigger high-priority steps to formulate proactive mitigation strategies to resolve issues at hand. This is what one might term pre-emptive risk management, i.e., following the evidence to jump ahead of risk.

How a Data-Driven Approach Can Benefit Hospitals and Healthcare Providers

Much has been written about the recent substantial changes with respect to the costs of the healthcare delivery system. Among the many stated goals of Patient Protection and Affordable Care Act (PPACA) legislation was to slow down the rate of medical cost inflation. The legislation provided for financial incentives and penalties for healthcare providers to more appropriately tie healthcare financing dollars with health outcomes.

One of the driving tenets behind the PPACA is the well-known “triple aim” in healthcare – improving population health, delivering better care, and lowering cost. The reduction of healthcare errors helps accomplish each of the triple aim’s goals. Furthermore, by improving the quality of healthcare rendered through the minimization of error, health care organizations stand to attain economic benefits on two fronts: 1) decreasing the pool of medical errors within a healthcare organization can translate into a meaningful reduction in patient harm and liability risk; and 2) decreasing the amount of indemnity and expense costs associated with patient lawsuits. The resulting savings translate into more dollars available for investments in staff, technology, and improving the patient experience. As Coverys works with insured hospitals to identify the alignment between risk recommendations and specific quality measures, the opportunity for healthcare providers, practices, and hospitals to reduce their predictive liability exposure while increasing their revenues is beginning to occur.

Coverys believes that healthcare organizations stand to benefit tremendously by taking a holistic and data-driven approach to their risk management practices and procedures. Focusing on the root cause of error within an organization can help that organization identify and promote best practices to improve the consistency and reliability of the healthcare delivery model. Notably, the introduction of checklists can serve as a valuable resource in the operating theater to ensure that high-quality care is delivered in a standardized manner and with an overarching emphasis on risk minimization. Educating physicians and other healthcare providers in a thoughtful and meaningful way does in fact decrease risk and minimize the potential for patient harm. All of this comes together to promote healthier patients, better patient experiences, and less economic cost (in the form of reduced liability spend and increases in financial savings) to healthcare organizations.

Deidentified Coverys Case Study:

A 39-year-old patient had a history of headaches, sinusitis, deviated nasal septum, and hypertrophic turbinates. To provide him some relief of his symptoms, it was decided that he was a candidate for surgery. Accordingly, an otolaryngologist performed a nasal septoplasty, bilateral nasal anrostomies, and enlargement of each maxillary ostium under direct visualization. No assistant surgeon was present during the procedure.

During the sinus surgery on the right side, the surgeon unknowingly violated the lamina papyracea and entered the orbital space. This mistaken entry caused injury to the oculomotor nerve leading to ptosis and limitation in gaze. Additionally, the penetration of the orbit resulted in traumatic optic neuropathy of the right eye. The patient experienced loss of vision in that eye immediately following the surgery, and the injury was later determined to be permanent.

In the ensuing legal action, it became clear that the surgeon had been manifesting signs of mild Alzheimer's prior to this event. He had been sporadically forgetting things, including basic surgical techniques, and had seen a neurologist. The neurologist reported his findings to hospital administration, but no action had been taken.

The surgeon retired a very short time after this event, and the matter was considered resolved. But a review of claim-signal data posed this question: "Is there a best practice model in place to detect early signs of physician impairment and to actively monitor them?" As it turned out, the answer for this organization was no. They were good at responding once an adverse event had already occurred, but weak when it came to putting into place models, processes, and communication to be predictive – and proactive – in preventing these types of events. This act of root-cause analysis allowed the organization to understand where to focus their improvement efforts.

Excerpt from the Aon 2018 Hospital and Physician Professional Liability Benchmark Analysis.

