

SURGICAL SAFETY IN CANADA: A 10-YEAR COLLABORATIVE REVIEW



BY KIRSTEN DEVENNY AND JOANNA NOBLE

More than 1 million surgical procedures are performed annually in Canada, each with associated benefits and risks. While healthcare providers and organizations strive to provide safe care, surgical patient safety incidents still occur.

for most Canadian physicians, and the Healthcare Insurance Reciprocal of Canada (HIROC), the country's leading provider of liability insurance for healthcare organizations and their employees, offers insight into the factors contributing to surgical safety incidents and suggestions to improve care.

holders, the CMPA and HIROC conducted an in-depth retrospective analysis of surgical safety incident data. The collaborative report supports the CPSI's *Surgical Care Safety Action Plan* and provides an opportunity for shared learning from the medico-legal data.

On the release of this

ty through continued sharing of data to identify and address priority areas for system and practice improvements."

Learning from medico-legal cases

The analysis of medico-legal files identified 1,583 CMPA cases and 1,391 HIROC cases involving in-hospital surgical safety incidents that were resolved within the past 10 years. A surgical safety incident was defined as a patient safety incident that occurred prior to, during, or after a surgical procedure. Contributing factors were categorized as resulting from system failures and provider performance issues. Obstetrical cases were excluded from the analysis. Because the CMPA and HIROC use distinct coding methods for capturing contributing factors, the interpretation of cases may have differed between the organizations.

Key findings from the analysis

Peer expert reviews of the identified cases found system and provider issues in 53% of CMPA

Canada's National Patient Safety Consortium

Canada's National Patient Safety Consortium was created when the Canadian Patient Safety Institute (CPSI) brought together key healthcare stakeholders to discuss a national patient safety strategy. The consortium identified surgical safety as one of four priorities to accelerate patient safety improvement in Canada, and agreed on the need for improved learning from patient safety incidents. They requested that the CMPA and HIROC collaborate in a retrospective analysis of Canadian surgical safety data to fill in this important gap in knowledge. The resulting report, *Surgical Safety in Canada: A 10-year review of CMPA and HIROC medico-legal data*, was released in April 2016.

A recent report from two national organizations, the Canadian Medical Protective Association (CMPA), which provides medical liability protection

Collaborating on surgical safety at the request of the National Patient Safety Consortium, representing a group of key healthcare stake-

holders, the CMPA and HIROC conducted an in-depth retrospective analysis of surgical safety incident data. The collaborative report supports the CPSI's *Surgical Care Safety Action Plan* and provides an opportunity for shared learning from the medico-legal data. On the release of this research report, the organizations affirmed that, "Patient safety is a collective responsibility, achievable only through the collaboration of governments, healthcare organizations, educational institutions, individual providers, and patients," and that "the CMPA and HIROC are committed to improving patient safe-

Kirsten Devenny, BSc, BScN, RN, is a Medical Analyst Researcher, Canadian Medical Protective Association (CMPA). Joanna Noble, BScN, RN, CRM, CPPS, is Knowledge Transfer Supervisor, Healthcare Insurance Reciprocal of Canada (HIROC).

and 49% of HIROC surgical-incident cases. No criticism of the care provided was identified in 42% of the CMPA cases and in 25% of HIROC cases. Table 1, below, illustrates the categories of contributing factors.

Almost two-thirds of cases (950/1,583 of CMPA and 928/1,391 of HIROC) involved non-oncology/non-trauma repair or excision procedures (e.g., inflammation and infection). Trauma-related cases made up 12% of the CMPA and 3% of the HIROC datasets, and oncology-related cases made up 14% of

the CMPA and 8% of the HIROC datasets.

Patient harm, including physical and psychological outcomes, involved injury to organs, blood vessels or nerves; wrong surgery (i.e., wrong body part, patient, procedure); unintended retained surgical items; hemorrhages; or burns. Incidents of retained surgical items or wrong surgery were identified in 12% of CMPA and 18% of HIROC surgical incidents. Severe patient outcomes, including death and catastrophic harm, were identified in 32% of CMPA and 39% of

HIROC cases.

Most incidents occurred during the intra-operative phase. While data on specialty involvement was not available for HIROC cases, analysis of the CMPA dataset found that neurosurgeons and orthopedic surgeons had the highest incidence of cases per 1,000 CMPA members. Anesthesiologists' care was a contributing factor in 4% of CMPA surgical incidents. Residents were involved in 4% of the CMPA and 1% of the HIROC surgical incident cases.

The most common system

issues (Figure 1) included an inadequate or absent surgical safety protocol, or a provider's failure to follow a surgical safety protocol (e.g., a surgical safety checklist).

Influencing surgical safety

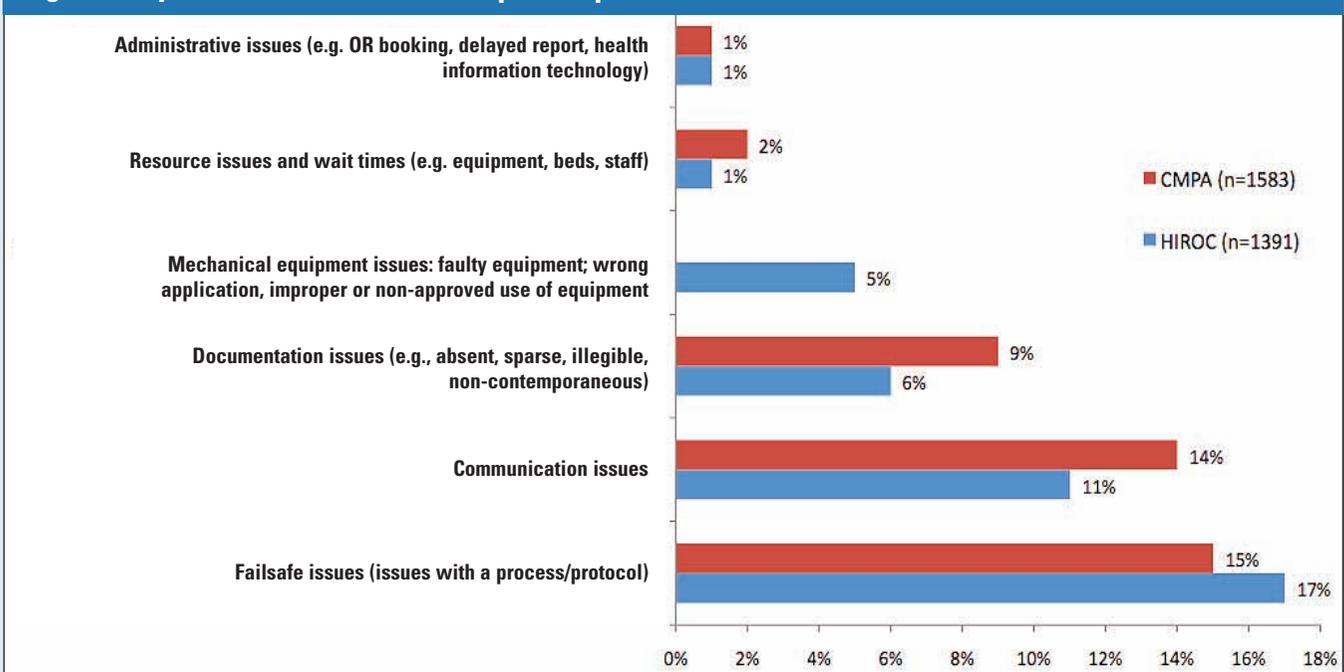
Surgical incidents result in patient harm and personal costs to the patients and their families; but they also impact providers, institutions, and society. Analysis of the legal data, including the peer expert reviews, advances the opportunity for shared learning and identifies priorities for health system improvements that are crucial to reducing surgical harm.

"The CMPA is committed to empowering the medical community to further improve healthcare quality and safety," said Dr. Hartley Stern, CEO and Executive Director, CMPA. "We work with HIROC and other healthcare partners to identify and address gaps and promote knowledge in areas that have the

Table 1. Categories of contributing system factors

System factors	HIROC (n=1391)	CMPA (n=1583)
Failsafe issues (issues with a process/protocol)	17%	15%
Communication issues	11%	14%
Documentation issues (e.g., absent, sparse, illegible, non-contemporaneous)	6%	9%
Mechanical equipment issues: faulty equipment; wrong application, improper or non-approved use of equipment	5%	3%
Resource issues and wait times (e.g., equipment, beds, staff)	1%	2%
Administrative issues (e.g. OR booking, delayed report, health information technology)	1%	1%

Figure 1. System factors identified in peer expert reviews, CMPA and HIROC closed cases, 2004–2013



potential for greatest positive impact. As a result of this review, both HIROC and the CMPA will push even harder for systemic and workplace cultural changes in healthcare.”

Based on the expert opinions contained in the CMPA and HIROC analysis, the following surgical safety improvement measures were recommended:

System factors

- Implement more consistently the standardized protocols (e.g., surgical safety checklist) to support interdisciplinary team communication, ensure situational awareness (i.e., keeping track of what is happening and anticipating what might need to be done) and improve verification practices (e.g., patient, site, procedure, and count).
- Evaluate protocols through outcome measurement (e.g., trigger tool chart review), use the results to inform quality improvement, and close the loop through education and feedback.
- Foster a workplace culture of safety with open and respectful communication that welcomes patients, families, and providers to speak up (e.g., Stop the line, SpeakUp!), and committed leaders who support disclosure and escalation procedures.
- Provide multidisciplinary education programs to support teamwork, communication, and situational awareness.

Physician factors

Pre-operative assessment and informed consent

- Perform a comprehensive patient assessment, including review of current status and completed and pending investigations (e.g., lab tests, x-rays).
- Obtain and document informed consent, which should

include discussion of the risks and benefits of surgery and any alternative options.

Intra-operative decision-making

- Adopt strategies to identify and mitigate errors in clinical-decision-making, including those resulting from cognitive biases.
- Employ self-reflective practices to allow for clinical improvement and shared learning.

Post-operative management and follow-up

- Provide clear team instructions on assessment and monitoring.
- Ensure that documentation reflects the treatment plan to enhance continuity of care.
- Clearly communicate to the patient or family all of the elements in an informed discharge, including the signs and symptoms to watch for and when to seek medical attention.

Other healthcare provider factors (e.g., nursing)

- Ensure all standard and non-standard surgical items are counted (e.g. sponges, towels, packing, needles, instruments, and items “too large/obvious” to be left behind); separate the sponges to view them concurrently; ensure all new items added during surgery are documented.
- Employ self-reflective practices to allow for clinical improvement and shared learning.

Concluding thoughts

A culture of safety, with improved surgical outcomes, requires the cooperation and commitment of the entire healthcare team in the adoption

of safe practices. In addition, experts in patient safety are gaining a better understanding of the supportive work environments and tools required that will help clinicians practice effectively and safely. All healthcare professionals, including leaders and administrators, need to be engaged in, and advocate for, the development of safe systems of care.

This analysis supports the value of learning from medico-legal cases involving surgical patient safety incidents to advance quality and safety improvement. The collaboration in the work of this analysis, and its results, have renewed the partners’ commitment to further advocate for systemic and workplace cultural changes in healthcare.

“HIROC was most pleased to have been designated by CPSI as co-lead with CMPA in the 10-year retrospective

analysis of surgical claims,” said Arlene Kraft, Manager, Healthcare Risk Management at HIROC. “This study provided data identifying the culmination of individual and system factors. The collaboration between the two organizations and opportunity to share this information with the healthcare community in an effort of improving patient care has been truly inspiring.”

The report, *Surgical Safety in Canada: A 10-year review of CMPA and HIROC medico-legal data*, is available at: www.patientsafetyinstitute.ca. 

Acknowledgments

We thank Jun Ji, MHA, for her contribution to the research, Dr Lorraine LeGrand Westfall, FRCSC, CSPQ, Dr Lisa Calder, MSc, FRCPC, and Arlene Kraft, BSc, CPHRM, CPPS, CHIM, for their direction and guidance, and Kristen Hines for editorial support.

For related information, see www.cmpa-acpm.ca and www.hiroc.com.



outtakes

Reserve Requirements

“The officials of the fourth-largest insurance market, China, sounded a lot like U.S. regulators, lawmakers, and industry officials who have steadily pushed back against the International Association of Insurance Supervisors (IAIS) proposal for global insurance capital reserve requirements. U.S. officials have argued that those requirements are unfair to countries with insurance governance styles dissimilar to the European Union’s Solvency II regulatory regime.”

—BNA, July 25, 2016

