

Surgical Safety in Canada:

A 10-year review of CMPA and HIROC medico-legal data

PATIENT SAFETY
FORWARD WITH

Background

More than one million surgical procedures were performed annually in Canada between 2004 and 2013. The Canadian healthcare system strives to provide safe care, but patient safety incidents still occur, with over half attributed to surgical care. Safe surgical care requires that physicians and healthcare teams use appropriate tools and contribute to system improvements within a complex professional environment.

Objective

Surgical care safety is one of four focus areas of the National Patient Safety Consortium's Integrated Patient Safety Action Plan. The Consortium requested that the Canadian Medical Protective Association (CMPA), which provides medical liability protection for most Canadian physicians, and the Healthcare Insurance Reciprocal of Canada (HIROC), which provides liability insurance for healthcare organizations and their employees, conduct a retrospective analysis of Canadian surgical safety incident data. This analysis of medico-legal data advances knowledge in patient safety concepts, and is intended to lead to system and practice improvements.

Results

- The analysis identified 1,583 CMPA and 1,391 HIROC medico-legal cases involving an in-hospital surgical incident.
- Peer expert reviews identified system and provider issues in 53% of CMPA and 49% of HIROC surgical incidents; no criticism was documented in 42% and 25% of these, respectively. Table 1, below, illustrates the categories of contributing factors in which issues were identified.
- Almost two-thirds of cases involved non-oncology/non-trauma repairs or excisions (e.g. inflammation and infection). Trauma-related care represented 12% of CMPA and 3% of HIROC datasets. Oncology-related cases represented 14% of CMPA and 8% of HIROC datasets.
- Patient harm (i.e. physical and psychological outcomes) involved injury to organs, blood vessels or nerves; wrong surgery (wrong body part, patient, procedure); unintended retained foreign bodies; hemorrhages; or burns.
- Retained foreign bodies 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 surgical incidents.
- The most common system issues included inadequate, lack of, and/or non-adherence with a surgical safety protocol (e.g. surgical safety checklist).
- Most incidents occurred during the intra-operative phase.
- Neurosurgeons and orthopaedic surgeons had the highest incidence of cases per 1000 CMPA members. Anaesthesiologists were involved in 4% of CMPA surgical incidents. Residents were involved in 4% of CMPA and 1% of HIROC surgical incidents.

Table 1. Contributing factors identified by peer experts, CMPA and HIROC closed cases, 2004 - 2013

Contributing factors	CMPA (n=1583)	HIROC (n=1391)
	% cases	% cases
System factors	45	43
Physician factors	64	93
Other healthcare provider factors (excluding physicians)	12	31

Note: Cases usually involve multiple contributing factors which are often overlapping. Surgical care is provided by physicians in collaboration with other healthcare providers, and as a team they work together within the healthcare system.

Recommendations arising from this analysis

■ System factors

System factors, while not the leading factors in this analysis, are key contributors to surgical safety incidents.

- **Implement standardized protocols** (e.g. surgical safety checklist) to ensure inter-disciplinary team 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 **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

To achieve a culture of safety with improved patient outcomes, implementation of reliable care processes is essential. This requires the support of leaders and administrators, and engagement of inter-disciplinary teams and patients.

■ Physician factors

Pre-operative assessment and informed consent

- Perform a **comprehensive assessment**, including review of current status and investigations.
- Obtain and document **informed consent**, which includes the risks and benefits of surgery and alternative options.

Intra-operative decision making

- Adopt strategies to identify and mitigate **cognitive biases** (i.e. errors in clinical decision making).
- 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 **documentation reflects the treatment plan** to enhance continuity of care.
- Clearly communicate to the patient or family an **informed discharge**, including the signs and symptoms to watch for and when to seek medical attention.

Safe surgical care requires continued practice improvement, disclosure, and support of a safety culture that encourages speaking up and reporting of patient safety incidents, appropriate analysis, and shared learning.

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

- Ensure all **standard and non-standard 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.

Conclusion

Improving surgical safety culture requires the cooperation and commitment of the entire healthcare team in the adoption of safe practices. All healthcare professionals need to be engaged and advocate for the development of safe systems of care.