# ONLINE SUPPLEMENTS

## APPENDIX 1: VARIABLES AND DEFINITIONS

### Abstracted variables

The following variables were available from routine coding at the CMPA. We abstracted them directly from the CMPA medico-legal data repository.

#### Case severity and timing

##### Patient harm

Medical analysts, who are experienced registered nurses and CMPA employees, independently reviewed closed cases and coded the level of patient harm using an in-house classification system based on the American Society for Healthcare Risk Management's "Healthcare Associated Preventable Harm Classification" [1] which was simplified for internal use in CMPA case coding (**eTable 1**). [2,3]To reduce misclassification, medical analysts conducted quality assurance reviews of coding on randomly selected cases on a weekly basis. During these reviews, disagreements were resolved through group consensus. This coding and quality assurance review was routine at the CMPA, not only for the purpose of this study.

eTable 1. The CMPA's Patient Harm Classification*

| Term | Description |
|---|---|
| Harmful incident | Based on peer expert opinion, the harm resulting from the care or services provided to the patient due to failures in the processes of care or in the performance of procedures, including provider error. |
| Inherent risk | Based on peer expert opinion, a harmful incident that is a known risk associated with a particular investigation, medication, or treatment. It is the risk from undergoing a procedure in ideal conditions, performed by qualified staff using current research, equipment, and techniques. |

| | |
|---|---|
| Asymptomatic | Patient safety event or patient safety incident** that reached the patient but the patient reports no symptoms and no treatment is required. |
| Mild harm | Patient harm is symptomatic, symptoms are mild, loss of function or harm is minimal (permanent or temporary), and minimal or no intervention is required (e.g., extra observation, investigation, review, or minor treatment). |
| Moderate harm | Patient harm is symptomatic, requiring intervention (e.g., additional moderate or minor operative procedure, additional therapeutic treatment), or an increased length of stay, or causing permanent or temporary harm, or loss of function. |
| Severe harm | Patient harm is symptomatic, requiring life-saving intervention or major medical/surgical intervention, or resulting in a shortening life expectancy, or causing major permanent or temporary harm or loss of function. |
| Death | Health care-related death |

* Adapted from the American Society for Healthcare Risk Management's *Healthcare Associated Harm Level Classification Tool*.[1]

** Patient safety incident: An event or circumstance which could have resulted, or did result, in unnecessary harm to the patient.[2]

Physicians named per case

Each case represents an instance during which a physician or multiple physicians contacted the CMPA after being named in a civil legal action, or threat of a civil legal action†, involving clinical care. Named physicians are physicians who were included at any point of a litigation, even if released before the conclusion of the case. The variable of physicians named per case is a count of all physicians named at any point during a case.

† An expression of dissatisfaction with care of physician indicating that a legal claim may be commenced. Threats often include an investigation. For some threats, the CMPA offers compensation to patients proven to have been harmed by negligent care, which leads to a closed case with no civil legal action.

Case medico-legal outcome

Data for this study comes from closed civil legal cases, meaning a case where the status has been determined either by a court or the complainant and the physicians have reached a mutual resolution. Cases had one of four medico-legal outcomes:

- Dismissal: A mutual agreement between all parties to end a medico-legal case.
- Settlement: An agreement, usually monetary, made between opposing parties in a lawsuit to resolve the legal dispute. A lawsuit can be settled at any stage before or during trial.
- Trial: Process of examining evidence and applicable law by a judge and perhaps jury to reach a decision on the merits of a plaintiffs claim.
- Unknown outcome: Since CMPA members provide information on a discretionary basis, some cases are closed with an unknown outcome due to incomplete information.

Index patient encounter date

The first date of surgery, procedure, visit, or contact with the plaintiff / complainant, during which or following which, a complication / untoward event / issue is deemed to have occurred. For each case, we extracted the month and year for the date of the patient physician encounter.

Date of commencement

The first documented date of a civil legal action. Or, in the case of a threat of a civil legal action, the first reported date of the threat.

### Case end date

A medico-legal case may commence months or years after the date of occurrence. The case end date is the documented date of resolution where a medico-legal case is closed.

## Physician characteristics (abstracted)

### Geographic region

CMPA data infrastructure requires grouping of cases according to the CMPA's fee-based geographic regions: Québec, Ontario, Western Canada (Alberta and British Columbia), and the rest of Canada (Saskatchewan, Manitoba, Atlantic Canada and the Territories).

**Derived variables**

The following variables were derived by members of the research team for the purpose of this study.

## Case rates

We defined physician case rate as the proportion of physicians named in a case relative to the total number of physicians within that physician's practice group (physicians-in-training, family physician, or other specialist), with each physician weighted by their days of CMPA membership in a given year. We then multiplied the annual proportion by 1,000 to derive case rates.

## Case severity and timing (derived)

### Case duration

To understand the length of time physicians-in-training were involved in civil legal cases, we calculated case duration in months by subtracting a case's start date

 

from its end date. Specifically, the case start date was the day on which the physician member first contacted the CMPA about the case, either by telephone or by letter, and the case end date was the day on which the CMPA received an official closing letter from legal counsel.

## Physician characteristics (derived)

### Non-trainee physician specialty

Non-trainee physicians are physicians who have completed their post-graduate training. These physicians had previously self-reported their specialty to the CMPA as part of routine membership renewal. These data were abstracted from the CMPA database. After reviewing their self-reported specialties, we collapsed these categories into three specialty groups: family medicine, non-surgical specialties, and surgical specialties (**eTable 2**).

eTable 2. Physician specialty categorization

| Specialty | Self-reported specialties (in alphabetical order) |
|---|---|
| Family medicine | Family medicine |
| Non-surgical specialties | Cardiology, Critical care medicine, Diagnostic radiology, Emergency medicine, Gastroenterology, Internal medicine, Nephrology, Neurology, Pediatrics / Neonatal-Perinatal, Psychiatry, Other non-surgical specialties |
| Surgical specialties | Anaesthesiology, Cardiac surgery, General surgery, Neurosurgery, Obstetrics / Gynecology, Orthopedic surgery, Ophthalmology, Otolaryngology, Plastic surgery, Urology, Vascular surgery, and Other surgical specialties |

### Physician-in-training specialty

While the CMPA repository included a physician's status as a physician-in-training, specific information on specialty and year of training were not routinely collected. Physician-in-training specialty was derived for cases with sufficient

 

information. Physician-in-training specialties were grouped using the same categories as non-trainee physician specialties.

### Physician-in-training postgraduate training year

As with physician-in-training specialty, a variable for physician-in-training postgraduate training year (PGY) was derived for cases with sufficient information available. We derived a physician-in-training's PGY and recorded it in the format of PGY 1, PGY 2, etc. We also recorded when physicians-in-training identified as "Fellows", defined as qualified specialists from Canada or abroad who were seeking advanced sub-specialty, post-graduate clinical training.

### Physician-in-training on-call status[o]

We also derived a dichotomous variable indicating whether a named physician-in-training reported being *on call* at the time of the index patient encounter. We defined on call as a working shift after standard working hours including evenings, nights, weekends, and holidays.

### Physician-in-training on-service status[O]

We also derived data as a binary variable on whether a named physician-in-training reported being *on service* at the time of the index occurrence. We defined on-service as a working shift within a physician-in-training's own specialty—for example, we considered a general surgery physician-in-training to be on service if they were seeing a patient in the emergency department as part

[o] We acknowledge problems defining whether a physician-in-training was working on service or on call at the time of the relevant index encounter. The term on call is defined differently across specialties, particularly in specialties where both supervising physicians and physicians-in-training regularly work overnight shifts (e.g., emergency medicine and critical care medicine).

 

of the general surgery consulting service; we considered a urology physician-in-training to be off service if they saw a patient as part of a general surgery rotation.

**References**


1. Hoppes MM, Mitchell J. Serious Safety Events: A Focus on Harm Classification: Deviation in Care as Link. American Society for Healthcare Risk Management. https://www.ashrm.org/sites/default/files/ashrm/SSE-2_getting_to_zero-9-30-14.pdf. Published 2014. Accessed April 15, 2019.
2. World Health Organization. More than Words: Conceptual Framework for the International Classification for Patient Safety - Final Technical Report. https://apps.who.int/iris/bitstream/handle/10665/70882/WHO_IER_PSP_2010.2_eng.pdf;jsessionid=ABDCD98C589E79862724BC0B0ABAE3FF?sequence=1. Published 2009. Accessed May 2, 2019.
3. Canadian Medical Protective Association (CMPA). CMPA Glossary. https://www.cmpa-acpm.ca/en/site-resources/glossary-of-terms. Accessed April 18, 2019.



Appendix 1, as supplied by the authors. Appendix to: McDougall A, Zhang C, Yang Q, et al. Patterns and trends among physicians-in-training named in civil legal cases. *CMAJ Open* 2022. DOI:10.9778/cmajo.20220075.