

# Physician questions and concerns related to COVID-19: a content analysis of advice calls to a medico-legal helpline

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## Abstract

**Background:** With the onset of the COVID-19 pandemic, physicians have had concerns related to the impact of the pandemic on their practice of medicine. Our objective was to evaluate physician questions and concerns related to the COVID-19 pandemic by studying physician calls made to a medico-legal telephone helpline, and explore associations between the pattern of these calls and the temporal progression of the pandemic.

**Methods:** We conducted a descriptive study of calls related to the COVID-19 pandemic to the Canadian Medical Protective Association (CMPA) from Jan. 1, 2020, to June 30, 2021. Using content analysis, we classified calls into themes. Using a Poisson regression model, we tested for associations between the weekly numbers of physician calls related to COVID-19 and national rates of COVID-19 cases and deaths.

**Results:** We analyzed 3810 COVID-19-related calls. The highest call volume was observed during the pandemic's early months and was widely distributed across the country. Call volume correlated with rates of SARS-CoV-2 infection during the pandemic's first wave ( $p = 0.002$ ) but not across the entire study period. Call themes included virtual care (826 calls), the pandemic's effect on health care (1160 calls) and challenging patient interactions (1091 calls).

**Interpretation:** We observed high volumes of physician calls to a medico-legal helpline during the first 18 months of the COVID-19 pandemic in Canada. Our data provide insight into the questions and concerns of Canadian physicians, and serve as a contemporaneous account of the adaptability and resilience of physicians during this challenging time.

In March 2020, a worldwide pandemic was declared in response to COVID-19.<sup>1</sup> The pandemic and subsequent public health response had a profound effect on health care systems in Canada and around the world.<sup>2</sup> Clinicians were faced with substantial and diverse challenges during this time.<sup>3</sup> These challenges included determining the best treatments for patients who acquired COVID-19;<sup>4</sup> managing scarce resources such as personal protective equipment;<sup>5</sup> pivoting to virtual care;<sup>6</sup> and maintaining the standard of care when clinics, operating rooms and imaging facilities reduced their capacity or were mandated to close.<sup>7</sup> As physicians adapted to the new and evolving realities of stay-at-home orders and public health recommendations, questions emerged about the implications of this rapid shift in the practice of medicine.

We sought to contribute to what is known about the questions and concerns of Canadian physicians during the COVID-19 pandemic. Our study aimed to evaluate the questions and concerns related to COVID-19 by studying physician calls to a medico-legal telephone helpline, and exploring associations between the pattern of these calls and the temporal progression of the pandemic.

## Methods

### Study design and setting

We conducted a content analysis of physician calls related to the COVID-19 pandemic that were made to the Canadian Medical Protective Association (CMPA) helpline from Jan. 1, 2020, to June 30, 2021. In Canada, about 95% of practising physicians are members of the CMPA, a national medico-legal defence organization for physicians.<sup>8</sup> Members of the CMPA have access to medico-legal advice via a telephone helpline. As early as January 2020, the CMPA's physician advisors received calls related to COVID-19, reflecting physicians' concerns about practice changes, public health advice

**Competing interests:** All of the authors are employees of the Canadian Medical Protective Association. No other competing interests were declared.

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and many other issues. These calls formed a representative sample of physicians' medico-legal and practice concerns during this public health crisis.

We reported the manuscript according to the Reporting of Studies Conducted Using Observational Routinely-collected Health Data (RECORD) and Standards for Qualitative Research (SRQR) reporting guideline checklists.<sup>9,10</sup>

### Study population

Practising physicians who made calls to the CMPA helpline during the study period were eligible.

### Data sources and variables

Data collection from calls to the CMPA has been described previously.<sup>11</sup> When physicians contact the CMPA, they speak with a physician advisor who addresses their questions. Calls are not recorded; however, the physician advisor records notes on the purpose of the call and the information exchanged in the form of a memo, which is part of the CMPA's repository of routinely collected medico-legal data. Although the contents of the memos vary depending on the nature of the medico-legal matter, at minimum, the memos are intended to document all relevant facts as described by the physician and a summary of the advice given by the physician advisor. Throughout the COVID-19 pandemic, physician advisors tagged calls when the physician's question or concern related in any way to the effect of the pandemic on their practice. We extracted de-identified memos for calls related to COVID-19 placed between Jan. 1, 2020, and June 30, 2021, which covered the first, second and third waves of the pandemic in Canada.<sup>12</sup>

To facilitate analysis of the volume and characteristics of calls, we collected caller characteristics associated with each call, including the province of practice and specialty (Appendix 1, Supplemental eTable 1, available at [www.cmajopen.ca/content/10/3/E714/suppl/DC1](http://www.cmajopen.ca/content/10/3/E714/suppl/DC1)). Owing to relatively small numbers of members and calls, we grouped together calls from the Atlantic provinces (New Brunswick, Newfoundland and Labrador, Prince Edward Island and Nova Scotia) and the territories (Nunavut, Northwest Territories and Yukon Territory).

To contextualize the calls within the setting of the pandemic, we extracted data from the Public Health Agency of Canada that included cases of diagnosed COVID-19 and deaths by province or territory.<sup>13</sup> We collected population data from Statistics Canada to calculate provincial and territorial case rates.<sup>14</sup> To provide temporal context, we recorded dates that states of emergency were declared by province.<sup>15</sup>

### Data analysis

#### Content analysis

We analyzed pandemic-related calls to the CMPA using a content analysis approach<sup>16</sup> by following the guidance for thematic analyses.<sup>17</sup> Coding involved a review of each call memo, with the coders answering the heuristic, "what are the physician's concerns expressed during the call?"

We imported call memos into a Microsoft Excel database for coding. Three team members synchronously reviewed a random sample of memos to identify concerns (J.H.F., an epidemiologist; A.M., a qualitative researcher; and C.Z., a statistician). As an example, a call from an intensivist who cited health and safety concerns about a lack of N-95 respirators would be coded personal protective equipment (PPE), whereas a call from a physician about maintaining privacy while conducting virtual consultations with patients would be coded telemedicine and information management. During frequent analysis meetings, these concerns were developed and refined into codes with clear definitions (Appendix 1, Supplemental eTable 2).

To evaluate intercoder reliability, 2 coders (J.H.F. and A.M.) undertook a calibration exercise and individually reviewed and coded a sample of 160 advice calls using the identified coding schema. We calculated Fleiss  $\kappa$  and the coders reached the target agreement between 0.61 and 0.80, indicating substantial agreement.<sup>18</sup>

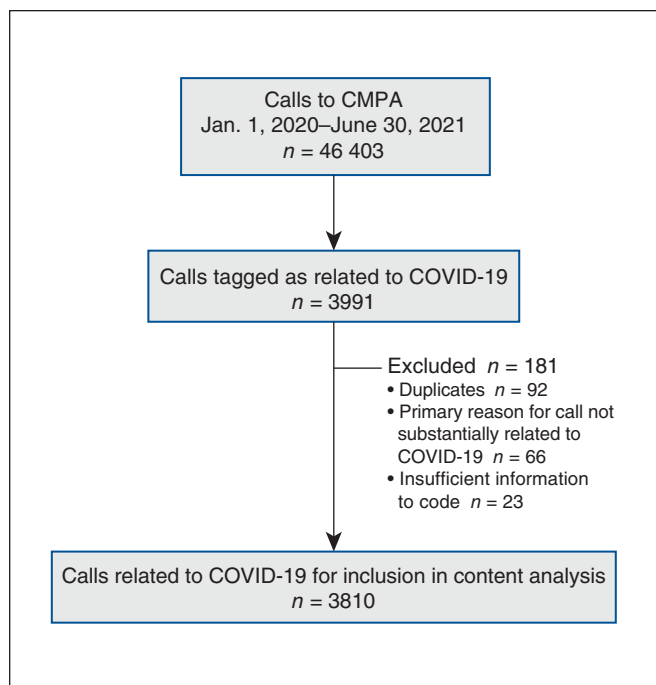
After calibration, the coders asynchronously coded the remaining calls, with frequent meetings to maintain consistency. Both coders discussed calls to be excluded from the data set. If a physician called to follow-up on an earlier issue, only the first call was included in the analysis. A third team member (G.G.) was available in cases where the coders could not reach consensus. Using an iterative process through weekly meetings of the coding team, themes were constructed by the researchers through analyzing, combining and graphically mapping how codes related to one another.

#### Statistical analysis

National, provincial and territorial weekly rates of COVID-19 case diagnoses and mortalities were plotted against weekly call volumes and themes. We used Poisson regression analysis to test for associations between call volumes, themes and publicly reported COVID-19 data.

Using a Poisson regression model, we tested for associations between the weekly numbers of new CMPA advice calls concerning COVID-19 (response variable) and the weekly number of publicly reported new COVID-19 cases in Canada (main effect). We also used the order of weekdays as an explanatory variable to control for time fixed effects. We included only the first call regarding an issue and excluded follow-up calls. We also considered that the calls in our study sample were not correlated to each other. Our modelling purpose was to use the maximum likelihood parameter estimate to indicate the significance of the main effect (e.g., if the  $p$  value is  $< 0.05$  and the sign of estimate is positive, we can interpret the result as a significant positive association between the response [CMPA call volumes] and the main effect [publicly reported COVID-19 cases]). We completed Poisson regression using the GENMOD procedure in SAS version 9.4 and allowed the scale = Deviance option to deal with the overdispersed data.

We conducted a subanalysis of calls from family medicine practitioners to determine whether affiliation with a hospital affected the volume or type of the physician's concerns. We used PROC UNIVARIATE in SAS to perform a Wilcoxon



**Figure 1:** Flow chart for call eligibility. Note: CMPA = Canadian Medical Protective Association.

signed-rank test on the paired differences for each theme in each week between the call volume per 1000 physicians (i.e., call rate) from the group of generalist family physicians and family physicians who reported that their practice included anesthesia, emergency medicine, surgery or obstetrics (i.e., hospital-affiliated activities).

**Ethics approval**

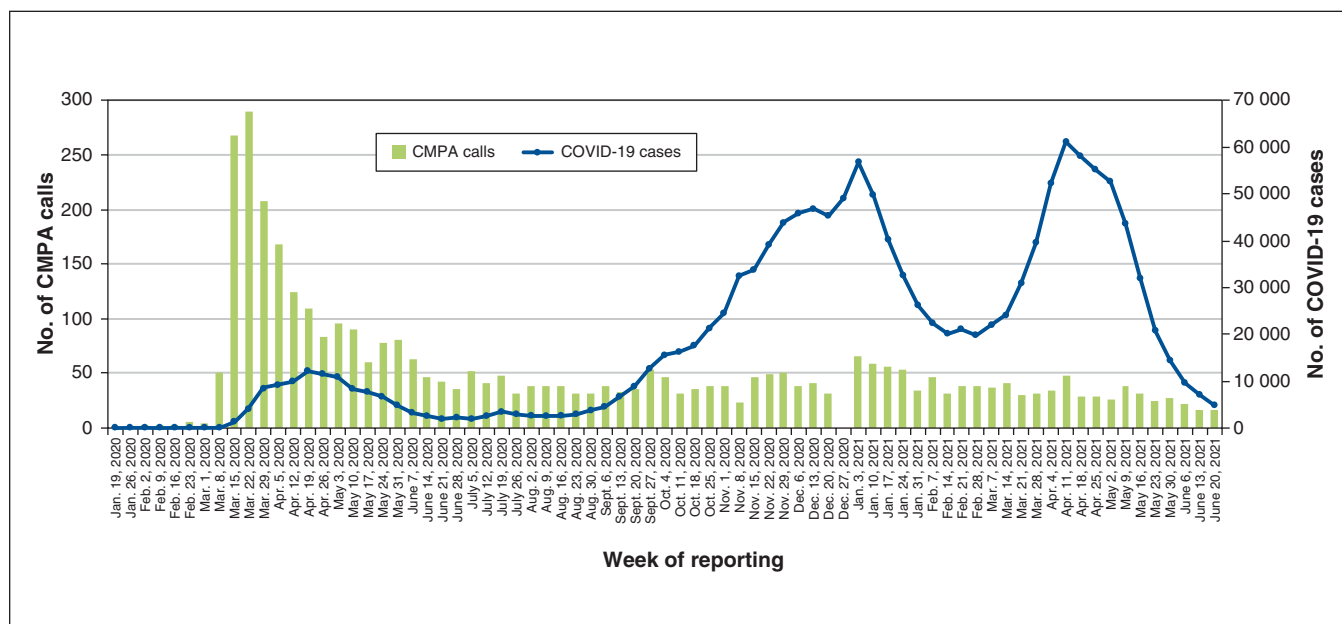
The ethics review panel of the Advarra Institutional Review Board reviewed and approved the study.

**Results**

Between Jan. 1, 2020, and June 30, 2021, the CMPA received 46 403 physician advice calls, with 3993 calls that were identified as related to COVID-19. We included 3810 calls in the content analysis and excluded 183 calls for reasons including duplicates and calls where the COVID-19 pandemic was not directly related to the reason for the call (Figure 1). There was an initial increase in weekly call volume during the first 6 weeks of the pandemic (Figure 2).

Physicians from Ontario had the highest rate of calls to the CMPA, with 2072 calls (a rate of 50.9 calls/1000 physicians during the study period); physicians from Manitoba made the fewest calls (22.9 calls per 1000 members or 80 calls). The specialty with the highest overall number of calls was family medicine ( $n = 1913$  calls), which represented 50.2% of all calls included in this analysis. When we calculated call rates per 1000 physicians, dermatologists (50 calls, 72.2 calls/1000 physicians), critical care physicians (49 calls, 63.6 calls/1000 physicians), ophthalmologists (75 calls, 59.1 calls/1000 physicians) and otolaryngologists (41 calls, 57.1 calls/1000 physicians) had higher call rates than family physicians (53.4 calls/1000 physicians).

Our subanalysis of family physicians found that these practitioners affiliated with a hospital had lower call volume throughout the pandemic than family physicians whose practice did not include hospital-based activities (Appendix 1, Supplemental eFigure 1).



**Figure 2:** National trends of COVID-19 cases and calls to the Canadian Medical Protective Association (CMPA) telephone helpline by week during the study period. No calls were reported during the holiday office closure in December 2020 because the CMPA’s helpline is limited to working days.

**Themes**

We used content analysis to identify and define 46 codes (Appendix 1, Supplemental eTable 2), which we subsequently categorized into 6 themes (Figure 3): pandemic effect on health care systems, challenging patient interactions, public health matters, physician obligations and rights, virtual care and care related to COVID-19.

There were differences in the trends of each theme over the course of the study period (Figure 4). Calls related to the pandemic effect on health care systems; physician’s obligations and rights; virtual care; and public health matters followed a similar trend to the overall call volume, with an early high peak in March and April 2020 before a decline in May and June, and a fairly steady rate from July onward. In contrast, calls related to the provision of care related to COVID-19 and challenging patient interactions were more stable in their frequencies over time. We observed a significant association between the volume of calls coded for COVID-19 deaths ( $n = 99$ ) and the national rates of COVID-19 deaths ( $p = 0.000$ ).

**Pandemic effect on health care systems**

A total of 1160 calls contained questions related to the effect of the pandemic on health care systems. These calls involved physicians with questions related to providing safe care in the face of new restrictions, including calls concerning delayed patient care, shortages of PPE and practice management.

**Challenging patient interactions**

The second most coded theme was challenging patient interactions ( $n = 1091$ ). These calls included concerns with patient requests for physicians’ notes for exemptions from mask, vaccine and self-isolation requirements. Physicians also called

asking for advice on restrictions on hospital visitors or responding to patients who refused infection prevention and control measures.

**Public health matters**

We labelled calls in which physicians described working around health system issues related to the pandemic as public health matters ( $n = 861$ ). These calls included queries about interpreting guidelines from public health agencies and concerns about exposure to or transmission of SARS-CoV-2 at the physician’s workplace. Some physicians also called with questions about requests to speak publicly about the COVID-19 pandemic in their community or to the media.

**Physician obligations and rights**

Another frequent theme was calls related to physician obligations and rights ( $n = 854$  calls). Many physicians called with questions regarding their duty of care, especially the issue of providing patient care while balancing risks to their own health and the health of those around them, like staff or members of their household. This theme also included physicians calling to express concern about providing care in the face of burnout, stress and difficulties with work–life balance.

**Virtual care**

We found that calls about virtual care ( $n = 826$ ) were primarily focused on pivoting to providing clinical care via telemedicine and its effect on maintaining a standard of care. These calls included concerns about maintaining the standard of care given restrictions on in-person assessments and respect for patients’ privacy while using a variety of virtual care platforms.

Pandemic effect on health care systems	Public health matters	Physician obligations and rights	Care related to COVID-19	Virtual care	Challenging patient interactions
<ul style="list-style-type: none"> <li>• Accepting new patients</li> <li>• Billing</li> <li>• Consent</li> <li>• Delayed care</li> <li>• Medical assistance in dying (MAID)</li> <li>• Pandemic and patient care</li> <li>• Personal protective equipment (PPE)</li> <li>• Resource scarcity</li> <li>• Staff or office management</li> <li>• Standard of care</li> <li>• Test result follow-up</li> </ul>	<ul style="list-style-type: none"> <li>• Advocacy</li> <li>• Confusion or inconsistency with guidelines</li> <li>• COVID-19 exposure at work</li> <li>• Public health role</li> <li>• Public statements or advice to people who are not patients</li> <li>• Reopening clinics for in-person care</li> <li>• Self-isolation</li> </ul>	<ul style="list-style-type: none"> <li>• Colleague refusing infection prevention and control measures</li> <li>• Duty to care</li> <li>• Duty to report</li> <li>• Examinations</li> <li>• Nonresident patients</li> <li>• Physician’s health risk</li> <li>• Physician privacy</li> <li>• Physician stress or burnout</li> <li>• Physician travel</li> <li>• Scope of practice</li> <li>• Work–life balance</li> </ul>	<ul style="list-style-type: none"> <li>• COVID-19 deaths</li> <li>• COVID-19 testing</li> <li>• COVID-19 treatments</li> <li>• Vaccination</li> </ul>	<ul style="list-style-type: none"> <li>• Cross-border care</li> <li>• Information management</li> <li>• Interprovincial care</li> <li>• Telemedicine</li> <li>• Telemedicine: standard of care</li> </ul>	<ul style="list-style-type: none"> <li>• Boundaries</li> <li>• Dissatisfaction with care</li> <li>• Ending the doctor–patient relationship</li> <li>• Opioids</li> <li>• Patient dishonesty</li> <li>• Patient refusing infection prevention and control measures</li> <li>• Sick notes</li> <li>• Visitor restrictions</li> </ul>

**Figure 3:** Themes and codes used to classify concerns raised by physicians during calls related to COVID-19 to the Canadian Medical Protective Association telephone helpline.

Care related to COVID-19

The least frequently coded category was care related to COVID-19 ( $n = 570$  calls). The themes of these calls seemed to evolve over time, with earlier calls focusing on testing, treatments and death, and later calls centring more on vaccinations.

Association of call volume and national COVID-19 cases

Using a Poisson regression model, we found a significant association between the weekly call volume and national

COVID-19 cases from January to August of 2020 ( $p = 0.002$ ) but not across the entire study period. This increase in calls during the first wave of the pandemic (March 2020) was also aligned temporally with the declarations of states of emergency in provinces and territories across Canada (Figure 5). Call volumes decreased and then stabilized from July 2020 onwards, despite the occurrence of second and third waves of COVID-19 cases. We did not observe any significant correlations between the volume of calls and callers' province or territory of practice.

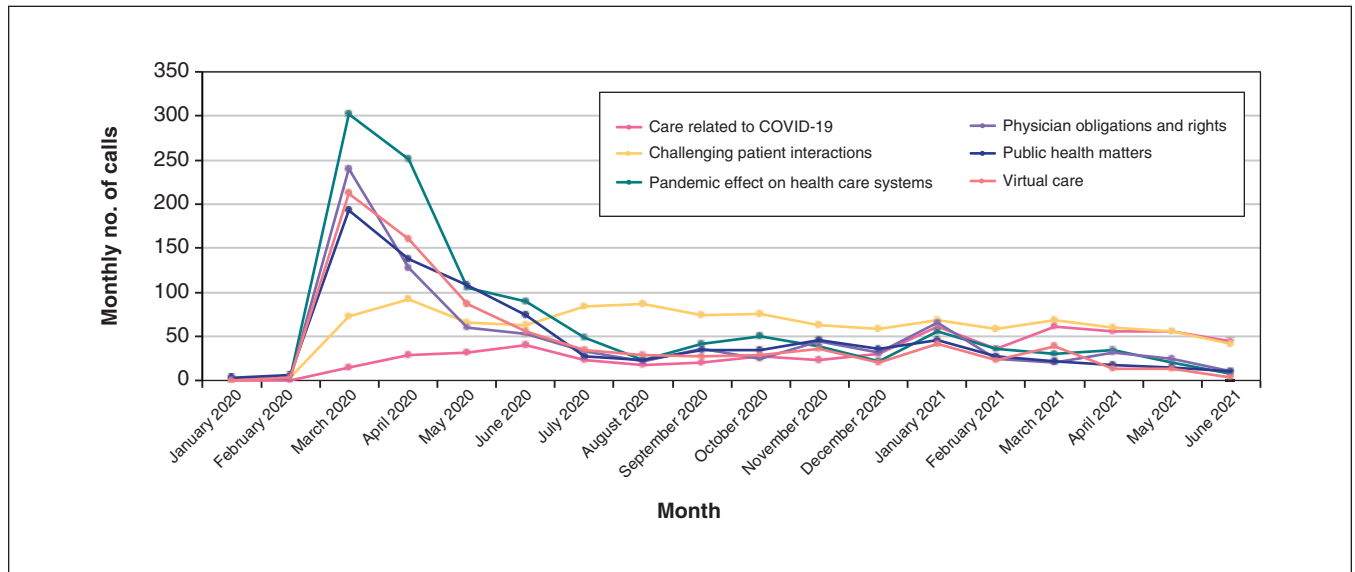


Figure 4: Monthly number of calls related to each theme of concern raised by physicians during calls related to COVID-19 to the Canadian Medical Protective Association telephone helpline.

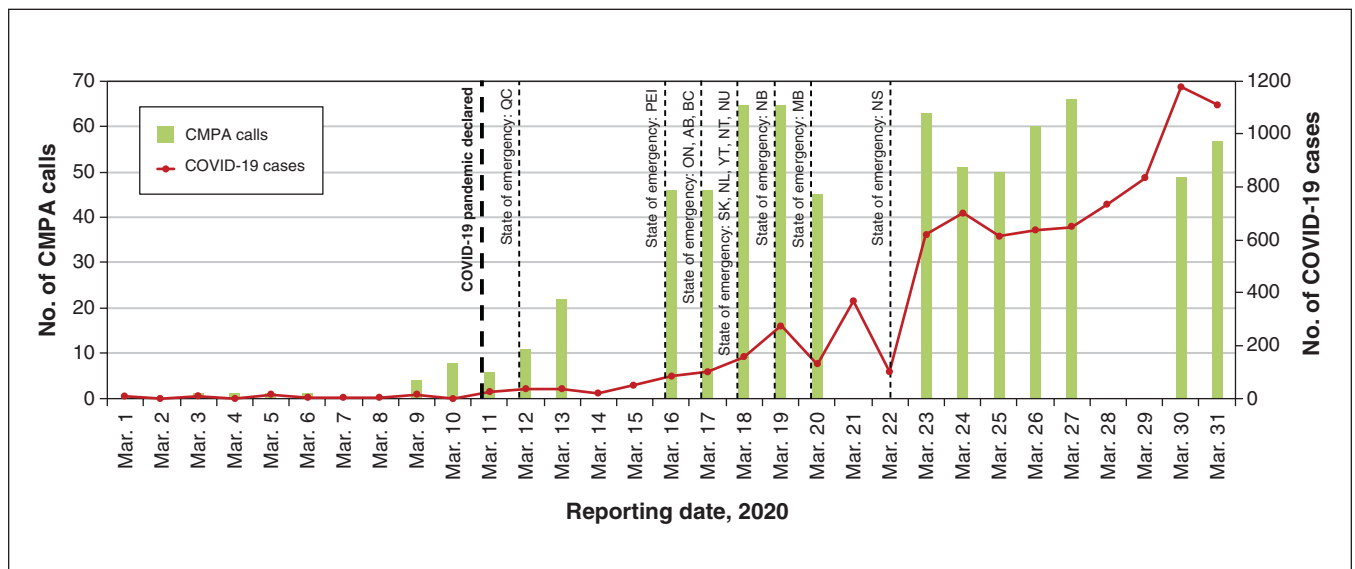


Figure 5: National trends in COVID-19 cases and calls to the Canadian Medical Protective Association (CMPA) telephone helpline during March 2020, including the declaration of provincial and territorial states of emergency.<sup>15</sup> No calls were reported during weekends because the CMPA's telephone helpline is limited to working days. Note: AB = Alberta, BC = British Columbia, MB = Manitoba, NB = New Brunswick, NL = Newfoundland and Labrador, NS = Nova Scotia, NT = Northwest Territories, NU = Nunavut, ON = Ontario, PEI = Prince Edward Island, QC = Quebec, SK = Saskatchewan, YT = Yukon.

## Interpretation

We report on a sample of 3810 advice calls from physicians received by the CMPA during an 18-month period of the COVID-19 pandemic. We identified 6 themes in these calls enabling us to understand the concerns of Canadian physicians during this noteworthy public health event: pandemic impact on health care systems, challenging patient interactions, public health matters, physician obligations and rights, virtual care and care related to COVID-19. Ontario had the highest rate of physicians calling the CMPA for advice. We found a correlation between the rate of calls to the medico-legal helpline and the rate of COVID-19 cases during the pandemic's first wave, but we did not find this correlation across the entire study period.

About half of our calls came from family physicians, which is reasonable considering 52% of physicians in Canada practise family medicine.<sup>19</sup> Specialties with some of the highest rates of calls were physicians practising dermatology, ophthalmology and otolaryngology. These specialties were affected notably by reductions in procedures such as skin biopsies<sup>20</sup> and eye surgeries.<sup>21</sup> In Ontario, about 1 million fewer surgeries across all specialties occurred from February 2020 until December 2021.<sup>22</sup>

There may be several reasons for our observation that the rate of calls correlated with COVID-19 cases during the pandemic's first wave. Although Canada had relatively low rates of COVID-19 during the first wave of the pandemic, the declaration of states of emergency across the country and the widespread implementation of stay-at-home orders resulted in sudden and substantial impacts to the provision of medical care.<sup>23</sup> A comparison of billing data for primary care physicians from Jan. 1 to July 28, 2020, with the same period in 2019 found office visits declined by 79.1%, whereas virtual care increased 56-fold, comprising 71.1% of primary care physician visits.<sup>24</sup> Clinicians quickly shifted to virtual care, grappled with reductions in operating room capacity, experienced shortages in PPE and sought to understand the implications of requests that they work outside of their usual scope of practice. During the first few weeks of the pandemic, the need for guidance on the medico-legal impacts of these and countless other changes was reflected in the volume of calls to the CMPA from areas of the country directly affected by rising COVID-19 numbers but also from regions that were less affected.

As the pandemic progressed, physicians and other health care providers adjusted to changes in their practice environment and call rates decreased and then stabilized. The content analysis provides several potential insights into this trend. We observed that calls related to virtual care, public health matters, the pandemic's impact on the health care system, and physicians' obligations and rights all had an early peak that crested in March and April 2020 and then fell to a fairly stable rate. In contrast, the rates of calls concerning difficult interactions with patients and care related to COVID-19 remained fairly steady. We interpreted these results as meaning that physicians' initial concerns related to the rapid changes to the practice of medicine resulted in an

increased volume of calls during the early weeks and months of the pandemic, but calls stabilized as those same physicians adapted to the new reality of practising medicine during the pandemic.

Another potential contributor to the reduction in call volumes after the initial peak was the increased availability of information and guidance as the pandemic progressed. In response to the increased call volume, the CMPA developed an online COVID-19 hub to support members with answers to frequently asked medico-legal questions; this site has been accessed over 95 000 times.<sup>25</sup> Various professional organizations that support and regulate physicians, including provincial and territorial medical associations and medical regulatory authorities developed similar online resources. The availability of this information from reliable sources likely contributed to a reduction in the number of calls to the medico-legal helpline over time. Our subanalysis of family physicians with and without hospital affiliation would seem to support this interpretation as well; those affiliated with a hospital (and thus benefitting from institutional interpretation of public health guidelines, the presence of occupational health and safety teams, and the ability to consult with colleagues and obtain medico-legal advice from hospital counsel) had lower call rates than family physicians who were not affiliated with a hospital.

A 2021 study reported on about 750 advice calls from physicians based in the United States to their medical liability provider during the first few months of the COVID-19 pandemic.<sup>26</sup> Calls related to clinic operations, including requests for liability waivers and coverage, were among the most common, which reflects their more limited sample of primarily outpatient health care providers. In contrast, our findings provided an expanded landscape of physicians' concerns, including an indication that factors within health care systems contributed to physicians seeking pandemic-related advice.

One adaptation to various provincial and territorial stay-at-home orders was the rapid implementation of virtual care. The Canadian Institute for Health Information reported that in April 2020, over half of physician visits were virtual.<sup>2</sup> Telemedicine was the most frequently used code in our content analysis and was identified as an issue in almost a fifth of all calls related to COVID-19 that were received by the CMPA during the study period. This shows that the rapid shift to virtual care was a cause for concern for Canadian physicians. Despite these challenges, a systematic review on the data regarding the use of telehealth during the pandemic suggested that the use of virtual care tools improved access to care when alternative options were not readily available.<sup>27</sup> Our findings echo these contributions to the growing literature on how physicians have adapted to the shift to virtual care.

This report is an initial step in understanding how the COVID-19 pandemic affected physicians in their practice of medicine. Future studies would benefit from the inclusion of nurses, respiratory therapists and other allied health care professionals in analyses of the impact of COVID-19.

## Limitations

Although CMPA members represent about 95% of physicians in Canada,<sup>8</sup> our sample of advice calls may not be representative of the concerns of all members or all Canadian physicians. Although routine quality assurance processes are in place at the CMPA medico-legal helpline, there is the potential that some calls related to COVID-19 may not have been tagged and therefore could have been missed from our analysis. Our observation of relatively few calls related to COVID-19 treatment reflects the role of the CMPA as a medico-legal organization; the CMPA provides only medico-legal advice, so it would be unlikely that members would call with clinical or treatment-related questions. Our data are also subject to the limitations of routinely collected data; the call memos we analyzed are not primarily intended to support research projects.

## Conclusion

Canadian physicians called the CMPA's medico-legal helpline with many questions related to the COVID-19 pandemic's impact on their practice of medicine. Their concerns were diverse, including the pandemic's effect on health care systems, virtual care, physician rights and responsibilities, and challenging patient interactions. The volume of calls was highest early in the pandemic and correlated with the national public case rates during the pandemic's first wave. Professional organizations, including the CMPA, played an important role in supporting the work of physicians during this unprecedented public health challenge.

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**Data sharing:** Data sharing for this study is unavailable.

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