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Causes and Outcomes of Medicolegal Proceedings Following Gastrointestinal Endoscopy in Canada

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1 **Causes and Outcomes of Medicolegal Proceedings Following Gastrointestinal Endoscopy in**
2 **Canada**

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7 **Short Title:** Legal Implications Endoscopy Canada

8

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51 **Abstract**

52 Background and Aims: Endoscopic procedures are frequently performed in Canada but can be
53 associated with potential complications and medicolegal implications. This study aimed to
54 identify potential medicolegal cases in Canada relating to upper and lower endoscopy as well as
55 advanced endoscopic procedures.

56

57 Methods: Westlaw Canada was searched for any cases regarding upper and lower endoscopy and
58 advanced endoscopic procedures from inception to December 31, 2020. Cases were classified by
59 type of case, procedure performed, patient and defendant demographics, outcome, and alleged
60 reason for litigation/complaint.

61

62 Results: 29 civil cases and 9 board and tribunal decisions for upper and lower endoscopy and 3
63 advanced endoscopic procedure cases were analyzed. The most frequent defendant specialities
64 were family physician, general surgery, and gastroenterology. The plaintiff was successful in 12
65 cases involving upper or lower endoscopy with an average award of \$243,934 (2021 CDN). The
66 most alleged reasons for litigation were procedural error or negligence (n=19). The plaintiff was
67 successful in 1 advanced endoscopic procedure case with an award of \$153,031.72.

68

69 Conclusion: Medicolegal cases regarding gastrointestinal endoscopy in Canada occur
70 infrequently. Endoscopy should be performed by skilled providers with appropriate informed
71 consent from the patient, and careful consideration of whether procedures are indicated are key
72 for endoscopic providers.

73 **Keywords:** colonoscopy; litigation; ERCP; lawsuit; EGD

74 **Introduction**

75 Endoscopic evaluation of the upper and lower gastrointestinal tracts through
76 esophagogastroduodenoscopy (EGD), sigmoidoscopy and colonoscopy is a critical diagnostic
77 and therapeutic tool for management of gastrointestinal disease typically performed by
78 gastroenterologists and surgeons in Canada. Data suggest that at least 1.6 million upper and
79 lower endoscopies are performed annually in Canada¹, while 21.6 million upper and lower
80 endoscopies were performed in 2019 in the United States². Advanced procedures such as
81 endoscopic retrograde cholangiopancreatography (ERCP) and endoscopic ultrasound (EUS)
82 afford the additional ability to investigate and manage non-luminal conditions such as
83 pancreaticobiliary disease^{3,4}. Although generally safe, luminal endoscopy is associated with
84 several rare but potentially serious adverse events (AEs), including bleeding and perforation,
85 with further risks associated with advanced endoscopy procedures⁵⁻⁸. These AEs can lead to
86 patient morbidity and mortality and can therefore potentially lead to complaints and/or
87 medicolegal action against providers.

88 Two recent studies assessed litigation patterns associated with colon cancer screening⁹
89 and colonoscopy¹⁰ in the United States. In both analyses, among the key identified reasons
90 associated with litigation were delays in diagnosis and delays in treatment. To date, there have
91 been no reports assessing medicolegal outcomes of endoscopy in Canada. Therefore, we aimed
92 to identify causes and outcomes of medicolegal proceedings and regulatory board proceedings
93 associated with the performance of endoscopic procedures in Canada.

94 **Methods:**

95 Westlaw Canada was searched from inception (1803) until December 31, 2020, to
96 identify any potential medicolegal cases and regulatory board cases involving endoscopic
97 procedures in Canada. Westlaw Canada is a legal database providing complete coverage of
98 reported decisions from 1977 to present day, unreported court decisions from 1986 to present
99 day, decisions in Carswell Law Reports, and decisions predating these periods from law report
100 series and is felt to cover every reported case in Canada since 1803¹¹ including cases prior to
101 Canada becoming independent in 1867. All cases reported in the 10 provinces and 3 territories
102 are covered by this database; reporting of court decisions is obligatory.

103 Our Boolean search strategy was designed with the aid of a legal librarian (KO-S) and
104 consisted of the following terms: a) for upper and lower endoscopy: "colon cancer" OR
105 "colorectal cancer" OR "colonoscopy" OR "polypectomy" OR "colectomy" OR "colostomy" OR
106 "ileocolonoscopy" OR "sigmoidoscopy" OR "gastroscopy" OR "esophagogastroscopy" OR
107 "esophagogastroduodenoscopy" OR "enteroscopy" OR "endoscopy". To analyze advanced
108 endoscopic procedures, the Boolean search strategy was "endoscopic retrograde
109 cholangiopancreatography" OR "ERCP" OR "endoscopic ultrasound" OR "EUS".

110 Cases were included for analysis if they were related to performing an endoscopic
111 procedure or not ordering an endoscopic procedure when indicated. Exclusion criteria included
112 not being related to medicolegal action (e.g., labour tribunal) or if endoscopy was not a
113 significant factor for the medicolegal action (e.g., predominantly related to a surgical
114 complication).

115 Cases were reviewed by two individuals independently (SM, SEC) and case details were
116 extracted using a standardized form. Duplicates, appeals of decisions made by a lower court, and

117 interlocutory decisions (orders made by a court prior to the final disposition of a case) were
118 removed. Disagreements regarding inclusion of cases were all resolved by consensus. Cases in
119 Westlaw are distinguished between those in the traditional court system and those in the parallel
120 administrative tribunal system (also referred to as boards and commissions). A key difference is
121 that decision makers in tribunals usually have specialized knowledge of the topic whereas judges
122 in the court system have a more general knowledge about many topics of the law¹². Tribunal
123 decisions can subsequently be reviewed in court.

124 Details extracted included: the type of case (criminal, civil, administrative), type(s) of
125 endoscopic procedure performed, patient age and sex, year, province, defendant specialty(ies),
126 sex(es), outcome of the case, the alleged reason for litigation, and the settlement amount (for
127 civil suits). For cases in the court system (criminal, civil), the alleged reasons for medicolegal
128 action were classified according to the following themes: delay in diagnosis, delay in treatment,
129 procedural error/negligence, lack of informed consent, unnecessary procedure, medication error,
130 misinterpretation of test/imaging, failure to order investigations/testing, death, and other. Cases
131 were permitted to have more than one alleged reason for medicolegal action. For cases reviewed
132 by administrative boards or tribunals (i.e., a professional regulatory body), the alleged reasons
133 were classified into the following themes: failure to meet the standard of practice of care,
134 performing acts or practices that would be considered disgraceful, dishonourable, or
135 unprofessional by other colleagues, and practicing medicine in a non-competent manner. Civil
136 and cost awards were converted to 2021 Canadian dollars using the Bank of Canada Inflation
137 Calculator¹³. Although our study is not a traditional medical systematic review, we conducted it
138 based on the principles of the Preferred Reporting Items for Systematic Reviews and Meta-
139 Analyses (PRISMA) guidelines¹⁴.

140 **Results:**

141 Case Identification

142 *Upper and Lower Endoscopy*

143 A total of 736 court cases and 750 board and tribunal decisions across Canada were
144 initially identified by the electronic search strategy for upper and lower endoscopy. After initial
145 screening, a total of 54 cases and 16 board and tribunal decisions were identified for detailed
146 review and data extraction. Accounting for multiple published proceedings, interlocutory rulings
147 of cases with decisions, and appeals of decisions, there were a total of 32 unique cases and 9
148 board and tribunal decisions included in the final analysis. A summary of the case review can be
149 found in **Figure 1**.

150

151 *Advanced Endoscopy*

152 For advanced endoscopy, a total of 29 court cases and 15 board and tribunal decisions
153 were identified on the initial search strategy. Eleven cases and three board and tribunal decisions
154 were identified for detailed review. Accounting for appeals, interlocutory rulings and cases that
155 were predominantly based on surgical complications, the final analysis consisted of three cases;
156 no relevant board and tribunal decisions were identified. A summary of the case review can be
157 found in **Figure 2**.

158

159 Cases

160 *Upper and Lower Endoscopy*

161 There was a total of three criminal cases and 29 civil cases analyzed for upper and lower
162 endoscopy. For the civil cases, most plaintiffs were male (n=16); 3 cases did not report the

163 plaintiff's sex. Cases were distributed throughout the country, with the majority being from
164 Ontario (n=14). Of the 29 cases, there were 45 male defendants, 5 female defendants and 4
165 organizations (average of 1.86 defendants per case). The most frequent defendant specialties
166 were family physician (n=15), general surgery (n=12), and gastroenterologist (n=10) with
167 colonoscopy being the most common procedure involved with litigation (**Table 1**). In 12 cases,
168 the plaintiff was successful with an average award of \$243,934 (2021 CDN); there were 15
169 verdicts in favour of the defendant, one settlement and 1 case was an interlocutory ruling with no
170 subsequent published verdict suggestive that the case was settled or discontinued. The most
171 common alleged reasons for litigation were procedural error or negligence (e.g., perforation, fall
172 post endoscopy, inappropriate cleaning strategies) (n=19) with 15 cases reporting more than one
173 reason for litigation (average of 1.6 reasons/case) [**Figure 3 and Figure 4**]. For cases involving
174 family physicians, the most common alleged reasons for litigation were delays in diagnosis,
175 failure to order diagnostic tests, and failure to appropriately refer, with only one case associated
176 with procedural error or negligence. Conversely, for cases involving gastroenterologists and
177 general surgeons, 14 cases were associated with procedural error or negligence.

178 Two of the three criminal cases involved accusations of alleged sexual assault with one
179 involving the endoscopist and one by an assistant (n=2); in both cases, the defendant was
180 acquitted. The third case involved an appeal of fraudulent billing of procedures that were not
181 performed; this conviction was upheld.

182

183 *Advanced Endoscopy*

184 Of the three relevant cases identified, all involved ERCP and all plaintiffs were female.
185 One case had a plaintiff verdict, one had a defense verdict and one case with published

186 interlocutory rulings, but no subsequent published verdict had proceedings suggesting that the
187 case was settled or discontinued. The alleged reasons for suit included procedural error or
188 negligence (1/3), failure to refer and/or order diagnostic tests (3/3), death (1/3) and lack of
189 informed consent. A total of 7 men, 1 woman and one organization were named through the
190 three cases; 4 were gastroenterologists, 4 were general surgeons. In the one case with a plaintiff
191 verdict, the gastroenterologist defendant had a verdict of \$153,031.72 against him.

192

193 Board and Tribunal Decisions

194 All the board and tribunal decisions analyzed were Ontario based; 8 were proceedings by
195 the College of Physicians and Surgeons of Ontario in which all physicians were found guilty of
196 the charges while one was a Human Rights Commissions of Ontario proceeding where the
197 physician was found not guilty.

198 In the College of Physicians and Surgeons of Ontario regulatory proceedings, 7/8 were
199 male with physician specialties including family medicine (3), gastroenterology (1), surgery (2)
200 and anesthesia (2). The average age of implicated physicians was 68 (n=5). Key reasons for
201 complaints included failure to meet the standard of practice (5/8), conduct that would be
202 considered to be disgraceful, dishonourable or unprofessional (5/8), and incompetent practice
203 (5/8). Most physicians received public reprimands (6/8), five either agreed to never practice
204 medicine again or had their license revoked, two were suspended (3 and 5 months) and one
205 required a practice reassessment. Average costs awarded against the physician were \$21,913.93
206 2021 CDN.

207 **Discussion:**

208 In our study, we performed the first comprehensive analysis of medicolegal outcomes of
209 gastrointestinal endoscopic procedures in Canada and ultimately identified 32 cases and 9
210 board/tribunal decisions. Approximately 41% of the civil cases led to a plaintiff verdict, with
211 most defendants being family physicians. All the board/tribunal decisions originated from
212 Ontario with all 8 physicians charged by the College of Physicians of Surgeons of Ontario being
213 found guilty. It is notable that despite how frequently endoscopy is performed in Canada, the
214 number of cases is very low.

215 In our study, the most common theme for civil litigation was procedural error or
216 negligence, with 19 cases involving this theme linked with the defendant specialities of general
217 surgery and gastroenterology. Given the invasive nature of endoscopic procedures and the risk of
218 complications, it is not surprising that procedural error/negligence was a common reason for
219 litigation. To try and help reduce the risk of error, it is important for all providers to remain up-
220 to-date regarding quality indicators and guidelines for endoscopy^{1,15-17} to ensure that they are
221 performing to the expected standard and so that informed consent can take place in the most
222 effective manner¹⁸. As examples, audit and feedback of colonoscopy quality indicators and brief
223 educational courses have both been shown to be associated with improvements in colonoscopy
224 quality^{19,20}.

225 Interestingly, in a previous study assessing 305 colonoscopy cases from 1980-2017 in the
226 United States¹⁰, litigation was most commonly associated with delays in treatment and/or
227 diagnosis (e.g., delays in performing endoscopy); however, 44% still involved procedural error
228 or negligence. The rate of litigation in our series is about 10% of previously published US
229 series^{9,10} although there is limited data in the US on medicolegal actions dealing with upper

230 endoscopy. Although there may be many factors for this difference in litigation patterns, one
231 important factor may be the availability of endoscopy; in Canada, our single-payer system
232 dictates that endoscopy resources are significantly more limited as compared to the United
233 States, and so some element of delay may be expected. Nonetheless, the significant rate of
234 procedural error or negligence being associated with litigation highlights the importance of
235 providers being adequately trained and performing procedures skillfully, acknowledging that
236 AEs can and will arise with endoscopy.

237 In this analysis, there were very few physicians-in-training involved in litigation; all the
238 board/tribunal complaints involved staff physicians. The involvement of residents with
239 medicolegal claims is becoming more recognized and is of growing research interest^{21,22}.
240 Notably, the frequency of calls for medicolegal advice to the Canadian Medical Protective
241 Agency from trainees (the primary provider of medical claims insurance) has been increasing at
242 a higher rate than other groups²³. Given this, trainees are an important group to target for formal
243 training in post-graduate programs; unfortunately, medicolegal education in the post-graduate
244 setting is limited²⁴⁻²⁶.

245 Currently in Canada, maintenance of certification programs by either the College of
246 Family Physicians of Canada or the Royal College of Physicians and Surgeons of Canada do not
247 mandate continuing medical education in procedural skills for practitioners who perform medical
248 procedures. Furthermore, there is no national standard for the granting and renewal of endoscopy
249 privileges for providers in Canada; instead, local standards are applied by individual hospitals
250 and/or health authorities. Endoscopist speciality has been associated with colonoscopy quality
251 indicators and outcomes, with the best outcomes associated with the performance of colonoscopy
252 by gastroenterologists²⁷; this may be linked to differences in training models. As such,

253 potentially adding procedural skills to the maintenance of certification program with
254 consideration of speciality-specific strategies as well as developing an updated national standard
255 for endoscopy accreditation (as current recommendations are dated)²⁷ may lead to reducing the
256 risk of procedural AEs and eliminating the postal code lottery of care²⁸.

257 In general, evaluation of medicolegal actions in Canada has been limited and only more
258 recently have data emerged specifically assessing outcomes in surgical specialties^{29,30},
259 anesthesia³¹ and cardiology³² using claims-based data from a single medical insurance claims
260 provider. Although Westlaw has been used more frequently in the United States^{9,33-35}, to our
261 knowledge, there is only one other Canadian medicolegal study that employed Westlaw
262 Canada³⁶; nonetheless, given its comprehensive database, we feel it is a valuable source for
263 research. Further research into medicolegal outcomes is important for providers to understand
264 risk factors associated with litigation and to help with continuous practice improvement. As well,
265 with the consideration of organizational, team and system factors, medicolegal data may help
266 with patient safety research and quality improvement overall³⁷. This is especially true in
267 advanced endoscopy, where AEs are more common and where human factors play an
268 increasingly recognized role³⁸.

269 Our study has several unique strengths. Ours is the first study to comprehensively analyze
270 the medicolegal implications of all forms of gastrointestinal endoscopy in Canada including all
271 published court cases and administrative tribunals. Key themes for litigation were extracted to
272 allow for all providers who perform endoscopy to reflect on their own practices and potentially
273 make changes if required.

274 There are some limitations to this study which are inherent to the database used. Cases
275 identified are only those that have proceeded to court or a tribunal; as such, there are many cases

276 that are dismissed or settled prior to reaching this stage that would not be captured by published
277 decisions. As such, the cases analyzed in this study reflect only the minority of cases, but the
278 themes identified are likely able to be extrapolated. Although Westlaw is the most
279 comprehensive database of administrative tribunals, not all regulatory bodies publish their
280 decisions readily. Only four of the provincial physician regulatory bodies (Colleges)
281 systematically publish their decisions with Ontario having started publishing cases the earliest.
282 However, as Ontario is the largest province in Canada and the general principles of physician
283 regulation are similar, we feel that likely the themes identified in the cases can be extrapolated to
284 the rest of the country.

285 In conclusion, medicolegal action following endoscopy is uncommon in Canada despite
286 the measurable rates of adverse events associated with endoscopic procedures. Endoscopy should
287 be always performed by skilled providers and should include an appropriate informed consent
288 process in addition to careful consideration and documentation of why the procedure is indicated.

289 Table 1: Characteristics of Evaluated Cases.

Category	Number of Cases (n=29)	Cases with Plaintiff Verdicts (n=12)
Cases by location (%)		
British Columbia	3 (10.3)	1 (8.3)
Alberta	6 (20.6)	3 (25)
Saskatchewan	1 (3.4)	
Ontario	14 (48.3)	7 (58.3)
Quebec	3 (10.3)	1 (8.3)
Nova Scotia	1 (3.4)	
Newfoundland	1 (3.4)	
Number female plaintiffs (%)	16 (55.2)	4 (33.3)
Procedure Type (%)		
Upper endoscopy	9 (31.0)	5 (41.7)
Sigmoidoscopy	3 (10.3)	3 (25)
Colonoscopy	15 (51.7)	4 (33.5)
Upper endoscopy/colonoscopy	2 (6.9)	
Defendants Named		
Male	45	20
Female	5	2
Organization	4	2
Defendant Speciality		
Family Medicine	15	10

General Surgery	12	4
Gastroenterology	10	2
Radiology	2	1
Anesthesia	2	1
Other	8	4

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291 **Figure Legends**

292 Figure 1: PRISMA Flowsheet for Upper and Lower Endoscopy Cases

293 Figure 2: PRISMA Flowsheet for Advanced Endoscopy Cases

294 Figure 3: Alleged Reasons for Litigation for Upper and Lower Endoscopy

295 Figure 4: Alleged Reasons for Litigation for Successful Plaintiff Cases

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References

- 297 1. Armstrong D, Barkun A, Bridges R, et al. Canadian Association of Gastroenterology
298 consensus guidelines on safety and quality indicators in endoscopy. *Can J Gastroenterol*
299 2012;26:17-31.
- 300 2. Peery AF, Crockett SD, Murphy CC, et al. Burden and Cost of Gastrointestinal, Liver, and
301 Pancreatic Diseases in the United States: Update 2021. *Gastroenterology* October
302 2021:S0016-5085(21)03655-6.
- 303 3. van der Merwe SW, van Wanrooij RLJ, Bronswijk M, et al. Therapeutic endoscopic
304 ultrasound: European Society of Gastrointestinal Endoscopy (ESGE) Guideline. *Endoscopy*
305 2022;54:185-205.
- 306 4. Adler DG, Baron TH, Davila RE, et al. ASGE guideline: the role of ERCP in diseases of
307 the biliary tract and the pancreas. *Gastrointest Endosc* 2005;62:1-8.
- 308 5. Kothari ST, Huang RJ, Shaikat A, et al. ASGE review of adverse events in colonoscopy.
309 *Gastrointest Endosc* 2019;90:863-876.e33.
- 310 6. Ben-Menachem T, Decker GA, Early DS, et al. Adverse events of upper GI endoscopy.
311 *Gastrointestinal Endoscopy* 2012;76:707-718.
- 312 7. ASGE Standards of Practice Committee, Forbes N, Coelho-Prabhu N, et al. Adverse events
313 associated with EUS and EUS-guided procedures. *Gastrointest Endosc* 2022;95:16-26.e2.
- 314 8. Chandrasekhara V, Khashab MA, Muthusamy VR, et al. Adverse events associated with
315 ERCP. *Gastrointestinal Endoscopy* 2017;85:32-47.
- 316 9. Panuganti PL, Hartnett DA, Eltorai AEM, et al. Colorectal Cancer Litigation: 1988–2018.
317 *Am J Gastroenterol* 2020;115:1525-1531.
- 318 10. Patel KS, Kothari P, Gantz O, et al. Current Trends and Predictors of Case Outcomes for
319 Malpractice in Colonoscopy in the United States. *J Clin Gastroenterol* 2022;56:49-54.
- 320 11. Thomson Reuters Canada Limited. What's In LawSource.
321 <https://www.westlawcanada.com/whats-in-lawsorce>.
- 322 12. Justice Education Society. Administrative Tribunals. <https://courtsofbc.ca/administrative-tribunals>.
- 324 13. Bank of Canada. Inflation Calendar. <https://www.bankofcanada.ca/rates/related/inflation-calculator/>.
- 326 14. Page MJ, McKenzie JE, Bossuyt PM, et al. The PRISMA 2020 statement: An updated
327 guideline for reporting systematic reviews. *PLoS Med* 2021;18:e1003583.

- 328 15. Rex DK, Schoenfeld PS, Cohen J, et al. Quality indicators for colonoscopy. *Gastrointestinal*
329 *Endoscopy* 2015;81:31-53.
- 330 16. Rizk MK, Sawhney MS, Cohen J, et al. Quality indicators common to all GI endoscopic
331 procedures. *Gastrointestinal Endoscopy* 2015;81:3-16.
- 332 17. Park WG, Shaheen NJ, Cohen J, et al. Quality indicators for EGD. *Gastrointestinal*
333 *Endoscopy* 2015;81:17-30.
- 334 18. ASGE Standards of Practice Committee, Storm AC, Fishman DS, et al. American Society
335 for Gastrointestinal Endoscopy guideline on informed consent for GI endoscopic
336 procedures. *Gastrointest Endosc* 2022;95:207-215.e2.
- 337 19. Bishay K, Causada-Calo N, Scaffidi MA, et al. Associations between endoscopist feedback
338 and improvements in colonoscopy quality indicators: a systematic review and meta-
339 analysis. *Gastrointest Endosc* 2020;92:1030-1040.e9.
- 340 20. Causada-Calo NS, Gonzalez-Moreno EI, Bishay K, et al. Educational interventions are
341 associated with improvements in colonoscopy quality indicators: a systematic review and
342 meta-analysis. *Endosc Int Open* 2020;8:E1321-E1331.
- 343 21. Glover M, McGee GW, Wilkinson DS, et al. Characteristics of Paid Malpractice Claims
344 Among Resident Physicians From 2001 to 2015 in the United States. *Acad Med*
345 2020;95:255-262.
- 346 22. Thiels CA, Choudhry AJ, Ray-Zack MD, et al. Medical Malpractice Lawsuits Involving
347 Surgical Residents. *JAMA Surg* 2018;153:8-13.
- 348 23. McDougall A, Zaslow J, Zhang C, et al. The medico-legal helpline: A content analysis of
349 postgraduate medical trainee advice calls. *Med Educ* 2021;55:387-393.
- 350 24. Mathew S, Samant N, Cooksey C, et al. Knowledge, Attitudes, and Perceptions About
351 Medicolegal Education: A Survey of OB/GYN Residents. *Perm J* 2020;24:1-7.
- 352 25. Valentine GC, Althouse MH, Fernandes CJ. The “Baby Moses” Law: A Case for
353 Improving Medicolegal Education for Pediatric Trainees. *J Med Educ Curric Dev*
354 2020;7:2382120520913955.
- 355 26. Imanzadeh A, Pourjabbar S, Mezrich J. Medicolegal training in radiology; an overlooked
356 component of the non-interpretive skills curriculum. *Clin Imaging* 2020;65:138-142.
- 357 27. Mazurek M, Murray A, Heitman SJ, et al. Association Between Endoscopist Specialty and
358 Colonoscopy Quality: A Systematic Review and Meta-analysis. *Clin Gastroenterol Hepatol*
359 August 2021:S1542-3565(21)00909-5.
- 360 28. Congly SE, Brahmania M. Variable access to antiviral treatment of chronic hepatitis B in
361 Canada: a descriptive study. *CMAJ Open* 2019;7:E182-E189.

- 362 29. Zhang Z, Calder L, Finestone PJ, et al. Medico-legal Closed Case Trends in Canadian
363 Plastic Surgery: A Retrospective Descriptive Study. *Plast Reconstr Surg Glob Open*
364 2021;9:e3754.
- 365 30. Lefebvre G, Devenny KA, Héroux DL, et al. Intraoperative injuries from abdominopelvic
366 surgery: an analysis of national medicolegal data. *Can J Surg* 2021;64:E127-E134.
- 367 31. Crosby ET, Duggan LV, Finestone PJ, et al. Anesthesiology airway-related medicolegal
368 cases from the Canadian Medical Protection Association. *Can J Anaesth* 2021;68:183-195.
- 369 32. Calder LA, Neilson HK, Whyte EM, et al. Medico-Legal Cases Involving Cardiologists and
370 Cardiac Test Underuse or Overuse. *CJC Open* 2021;3:434-441.
- 371 33. Tapper EB, Wexler R, Goldman E, et al. Constitutional Challenges to Liver Transplant
372 Policy: Transplantation 2019;103:e378-e381.
- 373 34. Lynch NB, Xu L, Ambinder D, et al. Medical malpractice in stress urinary incontinence
374 management: A 30-year legal database review. *Curr Urol* 2021;15:137-142.
- 375 35. Phair J, Carnevale M, Choinski K, et al. Vascular Surgeons as Expert Witnesses in
376 Malpractice Litigation. *J Surg Res* 2022;270:532-538.
- 377 36. Nguyen HH, Swain MG, Wong P, et al. Canadian regulations and legal ramifications for
378 hepatic encephalopathy: a descriptive analysis. *CMAJ Open* 2018;6:E575-E579.
- 379 37. McCleery A, Devenny K, Ogilby C, et al. Using medicolegal data to support safe medical
380 care: A contributing factor coding framework. *J Healthc Risk Manag* 2019;38:11-18.
- 381 38. Forbes N, Heitman SJ, McCulloch P. Infection Control in Endoscopic Retrograde
382 Cholangiopancreatography: A Human Factors Perspective. *Clin Transl Gastroenterol*
383 2020;11:e00214.

384







