

A contextualized assessment of duty-related bodily harm associated with Canadian police services

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Abstract

Canadian police report substantially more mental health challenges than the general population, partially due to negative media coverage. Negative media coverage often focuses on critiquing police causing duty-related bodily harm (DRBH) without sufficient context. Direct comparisons of police to other professionals are difficult; however, analogous comparisons can be made to previously published data on Avoidable Harm during Hospitalization (AHH). The current study quantitatively analyzed publicly available Canadian data on DRBH involving use of force exceeding legally approved standard operating procedures or involving code of conduct violations (FELSOP) relative to total police occurrences. From 2014 to 2023, DRBH involving FELSOP proportions were 1.89 per 100 000 police occurrences and 5566.67 AHH instances per 100 000 hospitalizations. Criticisms of Canadian police interactions with the public appear inconsistent with the available data. DRBH reported without context and coupled with anti-police rhetoric likely causes harms to individual police, and undermines efforts at recruitment, retention, community engagement, and Indigenous reconciliation. Healthcare worker intentions are justifiably considered beneficent, and harms are considered unintentional by default; the same should be made true for police officers, absent a conviction. Concerted efforts are needed to reframe the Canadian police discourse, possibly informed by the supports already rightfully provided to healthcare workers.

Key words: police, duty-related bodily harm, use of force, code of conduct violations

Introduction

Canadian municipal, provincial, and federal police report substantially more mental and physical health challenges than the Canadian general population (Carleton et al. 2018a, 2018b, 2018c; Sommer et al. 2020; Carleton et al. 2024, 2025; Nisbet et al. 2024). Royal Canadian Mounted Police (RCMP) research indicates cadets have excellent mental health before deployment and personality profiles consistent with best practice recommendations (Detrick and Chibnall 2013), evidencing higher scores than the general population on community-minded facets (e.g., conscientiousness, altruism; Andrews et al. 2023), implicating potentially psychologically traumatic events (PPTs) and other occupational stressors as harming police (Carleton et al. 2020). The same community-minded police must make rapid, complex decisions regarding public safety and use of force (Cyr 2016; Carleton et al. 2019; International Association of Chiefs of Police 2019; Smith-MacDonald et al. 2021; Rodrigues et al. 2023), involving moral, ethical, legal, and procedural considerations (Smith-MacDonald et al. 2021; Rodrigues et al. 2022), and potentiating moral injuries (Osifeso et al. 2023). Police decisions to use force are often scrutinized through lengthy internal and governmental processes (The Royal Canadian Mounted Po-

lice Act 1985; Public Safety Canada 2021), public inquiries (Ricciardelli et al. 2022b; MacDonald et al. 2023), independent civilian oversight agencies (IPCOA; The Office of the Police Complaint Commissioner 2022), and the media (Annable and Kubinec 2018; Marcoux and Nicholson 2018), exacerbating mental health risks (McCreary and Thompson 2006; Carleton et al. 2020; Ricciardelli et al. 2022b). Also, police may be intentionally harmed by members of the public while on duty (Rabe-Hemp and Schuck 2007; Statistics Canada 2009; Covington et al. 2014; Ral et al. 2023).

Criticisms of Canadian police interactions with the public have escalated since early 2010s (Statistics Canada 2015, 2023b), with increasing negative media attention (Potenteau 2020; The Canadian Press 2022), including exclusion from articles praising other frontline workers (Dyck 2020; Elliot 2021; CityNews 2022), and calls for pervasive reforms (Courts and Ballingall 2013; Glass 2024). Police leaders report being open to constructive conversations (LaFlamme 2020; Viau 2022), but media depictions of Canadian policing (Potenteau 2020) can negatively impact the well-being of police and their families (Carleton et al. 2020; Gagnon et al. 2020). Challenges with recruitment and retention of Canadian police are also escalating (Gagnon et al. 2020; Tunney 2023; Schroeder 2024),

with concerned groups implicating occupational stressors, health concerns, unrealistic expectations, and negative media coverage (Bennell et al. 2021; Sauvé 2023). Misinformed public perceptions appear pervasive, such as evidence that Canadian university students estimate police use firearms for ~2% of public encounters (Bennell et al. 2022), despite actual use being ~0.01% (Hall and Votova 2013).

Canadian police organizations have legally approved procedures outlining acceptable and expected use of force for responding to levels of threat to the public or the officer themselves, such as when a suspect intends to cause grievous bodily harm or death to any person (Canadian Association of Chiefs of Police et al. 2000; Royal Canadian Mounted Police 2017); therefore, police use of force is not inherently wrong, is sometimes necessary to protect citizens, and is prescribed by provincial legislation to prevent further risk of harm to the public. Provincial Police Acts and the RCMP Act explicitly define use of force exceeding legally approved standard operating procedures or involving code of conduct violations (FELSOP) as deviations from standard operating procedures or involving code of conduct violations that cause or risk serious duty-related bodily harm (DRBH; i.e., injury that creates a substantial risk of death, causes serious disfigurement, or causes substantial loss or impairment of mobility of the body as a whole or of the function of any limb or organ; The Royal Canadian Mounted Police Act 1985; Canadian Association of Chiefs of Police et al. 2000; Royal Canadian Mounted Police 2017; National Police Federation 2021). DRBH includes intentional harms to police by members of the public (van Reemst and Fischer 2019; Shjarback and Maguire 2021). Available data can describe DRBH during Canadian police interactions (see Methods), but peer-reviewed research describing serious DRBH involving FELSOP remains scant (Bennell et al. 2021). There have been several calls to resource and maintain mutually agreed upon, accepted, and nuanced Canadian databases describing DRBH involving FELSOP (Bennell et al. 2021, 2022; Simpson and Nix 2024) and police-involved deaths (e.g., Marcoux and Nicholson 2018; Tracking (In)Justice: A Law Enforcement Data 2023), but no such databases currently exist. Canadian DRBH and police-involved deaths can be contextualized relative to occurrences and a reasonable comparator group to manage expectations.

Published data on Avoidable Harm during acute care Hospitalizations (i.e., Avoidable Hospital Harm, AHH; i.e., patient injuries during hospitalizations that were avoidable by implementing best-known practices as defined by the Canadian Institute for Health Information 2024a) have been reliably used as measures of patient safety among Canadian hospitals over the last decade (Canadian Institute for Health Information 2024a; Vogel 2016) and can reasonably be compared to police DRBH (Bakker and Heuven 2006; Geoffrion et al. 2015). Healthcare workers (HCWs) are regularly exposed to PPTs (Morganstein et al. 2017; Stelnicki et al. 2021b); report more mental and physical challenges than the general population (Compton and Frank 2011; Mihailescu and Neiterman 2019; Stelnicki et al. 2020, 2021a, 2021b); make decisions involving moral, ethical, legal, and procedural considerations (Ricciardelli 2022a; Coimbra et al. 2023); and experience re-

cruitment and retention challenges from occupational stressors, health concerns, unrealistic expectations, and negative public perceptions (Motluk 2018; Stelnicki et al. 2021a; Ricciardelli et al. 2022a). The health care system is often criticized (Rachul and Caulfield 2015), but HCWs retain pervasive public support (Statistics Canada 2023a), being rightfully lauded for maximizing care within increasingly complex and under-resourced systems (Dyck 2020; Elliot 2021; CityNews 2022). HCWs are rightfully perceived as positive (CityNews 2022) and trustworthy (Canadian Medical Association 2024), with positive media portrayals (Malik and Bridge 2020; Mohammed et al. 2021).

Healthcare leaders and unions have, justifiably and repeatedly, raised concerns about AHH caused by both patient-specific and systemic under-resourcing, inadequate staffing, and lack of quality professional practice environments (Canadian Nurses Association & Canadian Federation of Nurses Unions 2019; Baker et al. 2004; Parsons et al. 2023); however, relative to police, HCWs appear less publicly scrutinized for AHH (Kirkey 2023; Canadian Institute for Health Information 2024a), with fewer calls for pervasive reform (Motluk 2018; Kirkey 2023; Canadian Institute for Health Information 2024a; Liewicki 2024) and dramatic media reporting with insufficient context (Baker et al. 2004). Identities of Canadian HCWs involved in AHH instances are protected by legal privilege (Glauser 2018). Canadian HCWs are rarely criminally charged because AHH is first considered accidental, not malicious (Glauser 2018; Kirkey 2023; Canadian Institute for Health Information 2024a), and prevalence attributions focus on systemic under-resourcing (Motluk 2018; Kirkey 2023; Liewicki 2024).

There is no perfect comparator group for police; however, police and HCWs are professionals providing services to diverse members of the public who are typically experiencing variable levels of distress or impairment from any number of causes. In all cases, there is a risk a member of the public could be injured as a function of the services being provided. Police and HCWs both collect and make public data on such injuries and hold their members accountable for actions. How the media portrays police providing the services, particularly when the public becomes injured, can directly impact their mental health. Any loss of life is tragic, and eliminating all DRBH and AHH is a shared aspirational goal (The Royal Canadian Mounted Police Act 1985; Andersen et al. 2017; Canadian Medical Association 2018) that requires context for managing expectations. There are no quantified, contextualized, peer-reviewed estimates of DRBH involving FELSOP by Canadian police, potentiating problematic public narratives that may negatively impact efforts related to recruitment, retention, continuous improvements for training, and public engagements. The current study provides Canadian contextualized quantitative analyses of police DRBH involving FELSOP, using AHH data for comparisons. We assessed how many: (1) police occurrences occurred between 2000 and 2023 (i.e., incidents and calls for service that resulted in the filing of a police occurrence report); (2) police were referred to the Crown by an IPCOA (i.e., IPCOA Crown referrals) for DRBH involving FELSOP; (3) police were convicted of criminal actions resulting in a deceased member of the public while

on duty; and (4) police fatalities occurred as a result of intentionally harmful acts by members of the public.

Methods

Study design and population

Proportions and rates of harm and death were extracted from publicly available Canadian datasets spanning 2000–2023. Counts of active-duty police and police occurrences were extracted from the annual Statistics Canada Police Administration Survey (Statistics Canada 2024c), specific causes of death were extracted from the Statistics Canada Canadian Vital Statistics Database (Statistics Canada 2024a), and Canadian census data were extracted from the Quarterly Demographics Estimates data tables (Statistics Canada 2024b). All data were extracted from the tables included in the 19 February 2025 data release; however, data from previous years may be revised to reflect any updates of changes that have been received from the provincial and territorial vital statistics registrars. All data included in the current study were correct as of 19 February 2025, but may be revised by Statistics Canada in subsequent data releases. Annual hospitalizations and hospital harm incidents were extracted from the Canadian Institute for Health Information Hospitalization and Childbirth (Canadian Institute for Health Information 2024c) and Hospital Harm Project data tables (Canadian Institute for Health Information 2024b), respectively. Counts of police officer fatalities resulting from intentionally harmful acts by members of the public (i.e., excluding accidents) were extracted from a report of on-duty Canadian police officer fatalities (Ral et al. 2023). Crude rates were calculated using calendar or fiscal years for a direct comparison between police and hospital harm samples.

Statistical analyses included independent samples proportions tests comparing analogous rates of fatalities and serious harm between police and hospital harm, and chi-square analyses comparing differences in yearly proportions of (1) fatalities resulting from legal interventions per police occurrence and (2) IPCOA Crown referrals per police occurrence. All analyses implemented Holm–Bonferroni corrections. Effect size estimates used Cohen’s H (i.e., small, $d = 0.20$; medium, $d = 0.50$; large, $d = 0.80$; Cohen 2013) or Cramer’s V (McHugh 2013). Secondary analyses of publicly available datasets required no ethics approval.

Avoidable harms by police

IPCOA reports provided DRBH counts involving FELSOP associated with IPCOA Crown referrals. In cases where allegations were made against RCMP operating in Nunavut, the Northwest Territories, or the Yukon, other IPCOAs could serve, and complaints could be directed to the RCMP Civilian Review and Public Complaints Commission (RCMP CRPCC; operational since 2007). No data were available for years where an IPCOA was not operational. IPCOA investigations into cases of DRBH may be initiated by public complaints to the IPCOAs, or because of police occurrences where an officer’s actions resulted in DRBH, and are always initiated in cases where a police firearm was discharged or where a mem-

ber of the public has died. We report police data by officer, not by occurrence. If multiple officers were charged or convicted during one incident, each was counted separately. If an officer was a repeat offender across multiple years, each charge was counted separately. The current compilation provides a maximum estimate of police-related DRBH involving FELSOP. Deviations may exist provincially wherein a police officer may be reprimanded for a code of conduct violation without criminal charges (National Police Federation 2021). Cases include all DRBH involving a possible FELSOP featuring a *Canadian Criminal Code* charge against a Canadian police officer, irrespective of subsequent conclusions regarding a possible conviction. Using cases referred to IPCOA Crown referrals as a proxy for the proportion of police involved in FELSOP is with the recognition that a criminal conviction by the Crown, and although such cases may ultimately draw a conclusion of criminal wrongdoing, all parties remain innocent until proven guilty in a court of law. The calculation necessarily overestimates counts of DRBH involving FELSOP, based on independently verified assessments, while providing a “worst case scenario” for comparisons. Some cases were still before the courts, meaning the numbers may change slightly as investigations conclude. Proportions of DRBH involving FELSOP were calculated per 100 000 police occurrences, generated by calls for service or by police, which is conceptually and operationally consistent with AHH per 100 000 hospitalizations.

Avoidable harms during acute care hospitalization (AHH)

The first reporting period for the Canadian Institute for Health Information (i.e., CIHI) Hospital Harm project was the 2013–2014 fiscal year (Canadian Institute for Health Information 2024b). Hospital harms (i.e., AHH) captured by CIHI are defined as acute care hospitalizations involving at least one occurrence of unintended harm that was potentially avoidable by implementing evidence-informed practices (Canadian Institute for Health Information 2024b). AHH means the harm (1) occurred after admission but during the same hospital stay; (2) required additional treatment or prolonged the hospital stay; and (3) produced a condition associated with one of the 31 Hospital Harm Framework Indicator clinical groups, which range from medication-related incidents and adverse reactions to patient trauma and post-procedural infections (Canadian Institute for Health Information 2024b). The CIHI database excluded near misses and reportable incidents not resulting in measurable harm to the patient. All instances of AHH are reported to CIHI by the hospitals in which they occur via the Discharge Abstract Database (i.e., CIHI’s database that includes demographic and clinical information about each hospital stay; Canadian Institute for Health Information 2024b); therefore, differences in local AHH documentation processes and resources between hospitals may result in differences in the ability to accurately capture and report instances of AHH.

The CIHI database excluded Quebec data and data for some mental health patients for methodological issues; therefore, crude prevalence proportions of AHH underestimate the true

Table 1. Number of police occurrences, police, and charges laid by independent civilian police oversight agencies (IPCOAs) from 2000 to 2023 resulting in serious harm in Canada.

Year	Number of active IPCOAs	Number of police occurrences	Number of police	Canadian population estimates (Q4)	Number of officers charged by IPCOAs for DRBH and referred to the Crown
2000	1	2570 663	55 954	30 783 969	5
2001	1	2602 571	57 076	31 128 873	4
2002	1	2606 967	58 422	31 450 677	4
2003	1	2699 428	59 412	31 736 141	2
2004	1	2680 221	59 800	32 038 207	3
2005	1	2608 741	61 026	32 353 311	4
2006	1	2606 887	62 461	32 680 839	2
2007	2	2534 730	64 134	33 001 918	7
2008	2	2485 043	65 283	33 372 978	5
2009	3	2448 654	67 243	33 758 581	14
2010	3	2379 130	69 068	34 005 902	15
2011	3	2275 917	69 424	34 457 713	12
2012	5	2244 458	69 505	34 834 973	34
2013	8	2098 776	69 250	35 209 597	34
2014	8	2052 925	68 806	35 555 305	24
2015	8	2118 681	68 772	35 823 591	40
2016	8	2161 927	68 859	36 257 421	51
2017	9	2213 293	69 025	36 722 075	44
2018	9	2280 328	68 532	37 259 485	25
2019	9	2440 496	68 847	37 828 162	49
2020	9	2242 459	69 504	38 027 406	42
2021	9	2264 285	70 160	38 446 871	50
2022	10	2425 672	70 581	39 935 934	56
2023	11	2526 877	71 472	40 513 781	43
Total	–	57 569 129	–	–	569

Note: DRBH, duty-related bodily harm. All data are reported for all available years. Cases where charges have been filed and referred to the Crown have been reported in the year in which the event occurred, not the year in which the investigation was concluded and charges were filed.

pan-Canadian occurrence prevalence (Canadian Institute for Health Information 2024b). The AHH occurrence estimates are also conservative because CIHI counts all harmful events during the same hospital stay as a single occurrence. The crude rate per 100 000 hospitalizations is directly reported from CIHI.

Cause of death data

Cause of death data were extracted from the Canadian Vital Statistics (CVSD) Deaths Database (Statistics Canada 2024a). Data were extracted and rates were computed by ICD-10 code listed as a primary or contributing cause of death on the official death certificate per a medical professional (i.e., physician, medical examiner, coroner). Fatalities resulting from legal interventions [ICD-10 Y35] or sequelae of legal interventions [ICD-10 Y89.0], including fatalities of police, bystanders, and suspects were reported, along with fatalities associated with legal interventions [ICD-10 Y35, Y89.0], excluding fatalities of on-duty police as a result of intentionally harmful actions by members of the public. Legal interventions included under the ICD-10 code Y35 include injuries caused by law enforcement or legal authorities by firearm discharge [Y35.0], explosives [Y35.1], gas [Y35.2], blunt objects [Y35.3], sharp objects [Y35.4], and other specified [Y35.8]

and unspecified [Y35.9] means including any broad variety or combination of use-of-force tactics or intervention options (World Health Organization 2021). A total of 104 on-duty police officer fatalities were recorded between the years of 2000 and 2023. A total of 47 on-duty police officer fatalities were identified as resulting from intentionally harmful acts by members of the public (i.e., consistent with the ICD-10 codes of Y35 and Y89.0). The remaining 57 on-duty police officer deaths were excluded from the current analyses. The true count is between 234 and 291 members of the public killed during legal interventions. The analyses featured in the current manuscript used 291 as the number of members of the public killed during legal interventions (i.e., the maximum possible number of attributable fatalities at the time of writing) to avoid perceptions of bias in favour of police. The number of police criminally charged for actions resulting in a deceased member of the public was extracted from official criminal court proceedings. Fatalities resulting from medical misadventures, or sequelae of medical misadventures, primary or secondary cause of death [Y60-Y69, Y88.1, Y88.3], were reported to estimate the number of fatalities associated with AHH. Crude rates were computed as fatalities per 100 000 police occurrences or per 100 000 hospitalizations.

Table 2. Number of occurrences of unintended harm during a hospital stay that could have been potentially prevented by implementing known best practices in Canada by fiscal year.

Fiscal year	Health care/medication-associated conditions	Health care-associated infections	Patient accidents	Procedure-associated conditions	Total number of AHH occurrences	Total number of hospital discharges
2014–2015	64 699	50 873	5179	32 541	153 292	2964 229
2015–2016	66 670	50 396	4690	33 458	155 214	2994 839
2016–2017	68 948	49 441	5014	33 836	157 239	3029 439
2017–2018	69 811	48 653	5283	33 427	157 174	3074 965
2018–2019	70 379	47 549	5415	33 125	156 468	3086 942
2019–2020	72 950	47 401	5671	33 234	159 256	3080 479
2020–2021	72 929	46 546	5750	31 902	157 127	2722 106
2021–2022	78 888	51 665	6061	31 469	168 083	2882 443
2022–2023	81 355	54 636	6451	32 067	174 509	2961 216
Total	646 629	447 160	49 514	295 059	1438 362	26 796 658

Note: Published data on avoidable harm during acute care hospitalizations (AHH; i.e., patient injuries that were believed to be avoidable by implementing best-known practices as defined by the Canadian Institute for Health Information) were extracted from Canadian Institute for Health Information Hospital Harm Results, 2014–2015 to 2023–2024. Ottawa, ON: CIHI; 2024, and the Canadian Institute for Health Information Hospitalization and Childbirth, 1995–1996 to 2022–2023—Supplementary Statistics. Ottawa, ON: CIHI; 2024.

Results

Table 1 presents annual numbers of IPCOAs, police occurrences, police, Canadian population, and IPCOA Crown referrals. The Canadian police population has increased by 28% since 2000 (i.e., 55 954 in 2000 to 71 472 in 2023), which is proportionally smaller than the concurrent general population increase of 32% (30.78 M to 40.5 M); however, police occurrence counts have remained relatively stable (i.e., 2570 663–2526 877). Since 2012, concurrent IPCOA Crown referrals have been stable at less than 0.08% (i.e., <1/10th of 1%).

Table 2 presents annual occurrences of AHH that could have been potentially prevented by implementing known best practices. **Table 3** presents annual police and medical related fatalities. There were 338 fatalities resulting from police or legal interventions from 2000 to 2023, including 47 police officer fatalities resulting from intentionally harmful acts by members of the public (Ral et al. 2023). Conversely, a total of three police officers were criminally convicted of actions resulting in a deceased member of the public. There were 483 fatalities associated with medical misadventures from 2000 to 2023.

Table 4 presents the crude annual occurrences of fatalities and DRBH per 100 000 police occurrences and AHH per 100 000 hospitalizations. The crude rate of AHH from the original CIHI Hospital Harm Results was reported per 100 hospitalizations. The offset of fiscal and calendar years associated with AHH occurrences and hospitalizations precluded calculating the exact rate per 100 000 hospitalizations; therefore, comparisons between police and hospital harm were made by multiplying the original CIHI Hospital Harm results by 1000 because reporting police DRBH or fatalities per 100 occurrences resulted in rounded crude rates of 0 for all indices.

Chi-square analyses assessed for changes in event proportions per 100 000 occurrences. The proportion of IPCOA Crown referrals per police occurrence differed between 2000

and 2023, $X^2(22, N = 57\,568\,129) = 407.8$, $V = 0.000$, $p < 0.001$, but not between 2014 and 2023, $X^2(8, N = 24\,825\,719) = 21.0$, $V = 0.003$, $p = 0.021$, after Holm–Bonferroni correction. Fatalities associated with legal interventions [ICD-10 Y35, Y89.0] per police occurrence, excluding police officer fatalities, differed proportionally between 2000 and 2023, $X^2(22, N = 57\,568\,129) = 56.4$, $V = 0.000$, $p < 0.001$, but not between 2014 and 2023, $X^2(8, N = 24\,825\,719) = 20.2$, $V = 0.003$, $p = 0.02$, after Holm–Bonferroni correction.

The proportion of AHH per hospitalization differed by fiscal year between 2014/2015 and 2022/2023, $X^2(8, N = 26\,796\,658) = 5498.60$, $V = 0.045$, $p < 0.001$, increasing since 2014/2015, peaking in 2022/2023. The proportion of fatalities from medical misadventures [ICD-10 Y60–69, Y88.1, Y88.3] per hospitalization did not differ between 2000 and 2023, $X^2(22, N = 69\,297\,333) = 45.87$, $V = 0.000$, $p > 0.05$, or between 2014 and 2023, $X^2(8, N = 26\,796\,658) = 19.98$, $V = 0.003$, $p > 0.05$.

The yearly fatality rate associated with legal interventions per 100 000 police occurrences, excluding the fatalities of police [ICD-10 Y35, Y89.0], was not different from the rate of fatalities associated with medical misadventures per 100 000 hospitalizations [Y60–69, Y88.1, Y88.3], except for years 2006 (0.23 vs. 0.93, $Z = 3.71$, $H = 0.00$, $p < 0.001$), 2022 (0.41 vs. 1.22, $Z = 2.24$, $H = 0.00$, $p < 0.001$), and 2023 (0.20 vs. 1.28, $Z = 4.82$, $H = 0.00$, $p < 0.001$). In contrast, IPCOA Crown referrals per 100 000 police occurrences were lower than AHH per 100 000 hospitalizations for all years with available data ($Z = 338.9$ – 393.3 , $H = 0.45$ – 0.48 , $p < 0.001$).

Discussion

The current results provide the first contextualized quantitative analyses of national Canadian data on police DRBH involving FELSOP, with AHH as a comparator. Despite increases in the Canadian general and policing populations, IPCOA Crown referrals stabilized after 2013 at lower than 0.08 referrals per 100,000 police occurrences (i.e., <1/10th of 1%).

Table 3. Police and medical related fatalities in Canada by year.

Year	On duty police fatalities from intentional harmful acts of the public	Fatalities associated with legal interventions including fatalities of police, bystanders, and suspects [ICD-10 Y35, Y89.0]	Fatalities associated with legal interventions [ICD-10 Y35, Y89.0] excluding fatalities of police	Police convicted of on-duty actions resulting in fatality for a member of the public	Fatalities associated with medical misadventures, primary or secondary cause of death [ICD-10 Y60–69, Y88.1, Y88.3]
2000	1	11	10	0	7
2001	2	7	5	0	11
2002	1	7	6	0	12
2003	0	6	6	0	13
2004	2	13	11	0	19
2005	5	16	11	0	19
2006	3	9	6	0	26
2007	4	13	9	0	12
2008	0	16	16	0	20
2009	1	19	18	0	22
2010	1	18	17	0	25
2011	2	23	21	0	20
2012	1	13	12	0	13
2013	1	16	15	1	15
2014	3	15	12	1	24
2015	2	13	11	1	19
2016	1	12	11	0	31
2017	1	17	16	0	16
2018	2	19	17	0	20
2019	0	14	14	0	21
2020	3	25	22	0	20
2021	2	12	10	0	24
2022	5	15	10	0	36
2023	4	9	5	0	38
Total	47	338	291	3	483

Note: Legal intervention—Includes any injury sustained as a result of an encounter with any law enforcement official, serving in any capacity at the time of the encounter, whether on-duty or off-duty. Includes injury to law enforcement official, suspect, and bystanders (ICD-10 code Y35, Y89.0).

From 2014 to 2023, IPCOA Crown referrals were still lower ($n = 424$; 1.89/100 000 occurrences) than the concurrent AHH ($n = 1438\ 362$; 5566.67/100 000 occurrences).

In Canada since 2000, there were 291 fatalities, excluding police officer deaths, associated with legal interventions and 483 fatalities associated with medical misadventures. Fatality rates associated with legal interventions per police occurrence have remained stable, but the rate of fatalities associated with medical misadventures may be increasing slightly; nevertheless, the rates per occurrence remains less than 0.001% (i.e., less than 1/1000th of 1%). Also, since 2000, there have been only three Canadian police convicted of DRBH involving FELSOP resulting in a deceased member of the public while on duty. From 2014 to 2023, there were 128 fatalities, excluding police officer deaths, associated with legal interventions (0.57/100 000 occurrences) and 249 fatalities associated with medical misadventures (0.84/100 000 occurrences). The results suggest Canadian proportional fatality risks during a police occurrence, or a medical misadventure, are both exceedingly low but higher for hospitalizations.

DRBH discourse often excludes context for necessary use of force during legally approved policing to protect the public or the police (Canadian Association of Chiefs of Police

2000; Royal Canadian Mounted Police 2017); instead, DRBH discourse often directly or indirectly attributes officers with malicious intentions and assumes FELSOP (Annable and Kubinec 2018; Potenteau 2020; Tracking (In)Justice: A Law Enforcement Data and Transparency Project 2023). Conversely, the apparent propensities when evaluating medical errors appear to attribute HCWs with beneficent intentions and justifiably assume such harms are accidental (Glauser 2018; Kirkey 2023), with the Canadian Nurses Unions championing a culture of safety rather than a culture of blame to facilitate greater personal and professional accountability, thereby supporting interventions to address unsafe or incompetent practices (Canadian Nurses Association & Canadian Federation of Nurses Unions 2019). The fundamental attribution error—overestimating dispositional or personality factors and underestimating situational factors (Ross 1977)—appears common in related discourse, such that medical errors are attributed to situational factors (e.g., resourcing), and police DRBH are attributed to individual factors (e.g., malice; Annable and Kubinec 2018; Glauser 2018; Gibbs 2019; Shjarback and Maguire 2021). Contextual and environmental differences may also contribute differentially and disproportionately to DRBH relative to AHH. For example, DRBH

Table 4. Crude rates of fatalities and serious harm per police occurrence or hospitalization by sector in Canada by year.

Year	Fatalities				Fiscal year	Serious harm	
	Per 100 000 police occurrences			Per 100 000 hospitalizations		Per 100 000 police occurrences	Per 100 000 hospitalizations
	On duty fatalities of police from intentional harmful acts of the public	Fatalities associated with legal interventions [ICD-10 Y35, Y89.0] excluding deaths of police	Police convicted of on-duty actions resulting in the death of a member of the public	Fatalities as a result of medical misadventures, primary or secondary cause of death [Y60-Y69, Y88.1, Y88.3]		Charges laid by IPCOAs for on-duty actions resulting in or potentially resulting in serious DRBH to a member of the public ^a	AHH occurrences
2000	0.04	0.39	0.00	0.24	2000–2001	0.19	–
2001	0.08	0.19	0.00	0.39	2001–2002	0.15	–
2002	0.04	0.23	0.00	0.43	2002–2003	0.15	–
2003	0.00	0.22	0.00	0.47	2003–2004	0.07	–
2004	0.07	0.41	0.00	0.68	2004–2005	0.11	–
2005	0.19	0.42	0.00	0.67	2005–2006	0.15	–
2006	0.12	0.23	0.00	0.93	2006–2007	0.08	–
2007	0.16	0.36	0.00	0.43	2007–2008	0.28	–
2008	0.00	0.64	0.00	0.72	2008–2009	0.20	–
2009	0.04	0.74	0.00	0.79	2009–2010	0.57	–
2010	0.04	0.71	0.00	0.89	2010–2011	0.63	–
2011	0.09	0.92	0.00	0.70	2011–2012	0.53	–
2012	0.04	0.53	0.00	0.45	2012–2013	1.51	–
2013	0.05	0.71	0.05	0.51	2013–2014	1.62	–
2014	0.15	0.58	0.05	0.81	2014–2015	1.17	5300.00
2015	0.09	0.52	0.05	0.63	2015–2016	1.89	5400.00
2016	0.05	0.51	0.00	1.02	2016–2017	2.36	5400.00
2017	0.05	0.72	0.00	0.52	2017–2018	1.99	5400.00
2018	0.09	0.75	0.00	0.65	2018–2019	1.10	5300.00
2019	0.00	0.57	0.00	0.68	2019–2020	2.01	5400.00
2020	0.13	0.98	0.00	0.73	2020–2021	1.87	5900.00
2021	0.09	0.44	0.00	0.83	2021–2022	2.21	6000.00
2022	0.21	0.41	0.00	1.22	2022–2023	2.31	6000.00
2023	0.16	0.20	0.00	1.28 ^b	2023–2024	–	–
2000–2023	0.08	0.52	0.01	0.70	–	0.99	–
2014–2023	0.10	0.57	0.01	0.84	–	1.89	5566.67

Note: DRBH, duty-related bodily harm; AHH, avoidable hospital harm.

^aCrude rates involving police-related harm indicator values were calculated by fiscal year offset rather than calendar year for a direct comparison of the Canadian Institute for Health Information Hospital Harm data.

^bThe 2023 rate of fatalities because of medical misadventures, primary or secondary cause of death [Y60–69, Y88.1, Y88.3] are calculated using a denominator of the number of hospital discharges in the 2022–2023 fiscal year as 2023–2024 hospital discharge rates were unavailable at the time of writing.

typically occurs during relatively acute, dynamic, and often potentially hostile interactions between members of the public and police, often in unfamiliar or potentially hazardous environments, whereas AHH occurs between HCWs and patients during acute care hospitalizations, which occur within a controlled and familiar hospital setting. Since 2000, there have been 47 police fatalities caused by intentionally harmful acts by members of the public and the annual prevalence has been stable since 2013. Police appear ~23.5 times more likely to die by intentionally harmful acts by members of the public than to be convicted of fatal DRBH involving FELSOP.

The same decontextualized DRBH discourse may exacerbate negative public perceptions and mistrust of police, potentiating violence against police (Rabe-Hemp and Schuck 2007; Covington et al. 2014; Gibbs 2019; Ral et al. 2023) and undermining public safety by inhibiting police capacity to protect citizens and maintain peace (Sauvé 2023). Future media coverage and public discourse on police use of force should be contextualized by the current results to further bolster trust in police, recruitment, retention, and police mental health. The current results can also facilitate solution-focused discourse regarding system-level challenges impacting police, HCWs, patients, and public safety.

Implications for clinical practice, policy, and research

Escalating criticisms of Canadian police interactions with the public (Statistics Canada 2015, 2023b), negative media attention (Potenteau 2020; The Canadian Press 2022), and relative exclusion of police when praising frontline workers (Elliot 2021; The Canadian Press 2022) appear inconsistent with the current results. A critiquing discourse of Canadian police without the current context can be reasonably expected to cause psychological harm to police and their families (Bennell et al. 2021; Sauvé 2023), negatively impact recruitment and retention efforts (Tunney 2023; Schroeder 2024), and undermine efforts at community engagement (Kwon and Wortley 2022; The Canadian Press 2022; Statistics Canada 2023b) and indigenous reconciliation (Alberton et al. 2019). The decontextualized critiques may facilitate anti-police biases impacting police resourcing, police access to healthcare, and support from other institutions (e.g., the academy), as well as undermine contemporary best practices (Detrick and Chibnall 2013). Effective context for critical discourse requires resourced, maintained, mutually accepted, and nuanced Canadian use of force databases (Bennell et al. 2021, 2022; Simpson and Nix 2024). Such data would help to address concerns about actual or potential structural and systemic biases by providing accepted, transparent baselines and measurable targets for improvements (Bennell et al. 2021, 2022; Puddister and McNabb 2021; Kwon and Wortley 2022; Puddister 2023). Concerted efforts are needed to accurately contextualize narratives about Canadian police interactions with the public and to offset misinformation and biases (Bennell et al. 2022), while carefully addressing complex interactions with gender, race, and culture (Newburn 2022). The efforts may require new or revised policies for educating police-involved groups (e.g., politicians), media coverage

of events involving police, and practices for making policing a psychologically safer career (Gagnon et al. 2020). Success with such efforts could reduce direct and indirect policing costs (e.g., absenteeism, presenteeism, and disengagement; Gagnon et al. 2020). The robustly defensible and appropriate protections and supports provided to HCWs may offer several specific and attainable solutions for police.

The current study has several strengths. The current study used large, independently collected national datasets, and formally accepted operationalizations for key terms and therein variables. The analyses and results appear novel in Canada and only included fatalities where cause of death was confirmed by an independent medical professional. Analogous group comparisons between police and hospital harm created contextualized quantified prevalence proportions and highlighted important disparate narratives. The current results provide novel baselines and historical frameworks to inform next steps for narratives, media framing, and policy discussions. Large disparities between DRBH involving FELSOP and services provided, and differences in relative proportions between DRBH involving FELSOP and medical errors resulting in AHH, all minimize potential confounds that might otherwise change the overall conclusions.

The current study also has several limitations that provide important directions for future research. First, the CIHI data used are based on internal healthcare system reporting processes tracking defined and accepted hospital harm indicators but rely heavily on self-reporting influenced by individual judgement and substantial understaffing. The policing data are based on internal police agency reporting processes for occurrences that meet specific harm or use of force criteria (e.g., firearm discharges, bodily harm) to legally necessitate referral to IPCOAs and public complaint reporting processes, which, as is true for AHH, may be influenced by any number of factors, including relative willingness of different persons or groups to report; nevertheless, the police reporting processes also rely heavily on self-reporting influenced by individual judgement and substantial understaffing. Second, the CIHI data excludes Quebec due to methodological differences for reporting procedure-related complications; however, Quebec data would likely not change the overall conclusions because the pan-Canadian CIHI Hospital Harm rates were calculated excluding Quebec-specific DRBH and hospitalization occurrences. Third, gender- and ethnicity-based analyses were precluded by data collection limitations of Statistics Canada and CIHI (i.e., limited or absent demographic details). Future data collections should explicitly include at least gender and ethnicity for all persons involved in DRBH to facilitate nuanced interaction assessments. In the interim, the small counts and proportions of police DRBH involving FELSOP limit interaction analyses for gender and ethnicity. Any such analyses would also need to control for relative proportions among occurrences and socioeconomic status for robust interpretations (Kitchen 2007). Fourth, early increases in IPCOA Crown referrals were associated with increasing IPCOAs and stabilized after 2012 but should be periodically re-evaluated. Fifth, the policing data may change slightly as pending investigations conclude, but the changes would likely not substantively impact the current conclu-

sions. Sixth, there is no publicly available dataset tracking cases of public assaults against HCWs, and publicly available data on assaults against peace officers does not allow for filtering of assaults against police specifically, precluding comparisons of assaults against police versus against HCWs versus against the general public. Seventh, the CIHI data does not specify what type(s) of HCW(s) were involved in the events of AHH, as such the authors cannot provide additional nuance. Eighth, AHH occurrence rates provided by CIHI are likely conservative estimates because CIHI computes the rate of all harmful events during the same hospital stay as a single occurrence; therefore, the true incidence and prevalence of individual occurrences of AHH may be higher than what is currently reported. Comparatively, all instances of DRBH are counted as separate instances of harm and on a per-officer basis. Ninth, future researchers should consider conducting and presenting contextualized international comparative evaluations of how media represents AHH and DRBH. Lastly, future researchers should also consider assessing perceptions of harms associated with police and HCW services based on perspectives of the public being served, as well as the professionals providing service, their leaders, their families, and their governments.

Conclusion

The current results suggest an extremely small proportion of Canadian police occurrences have been associated with DRBH involving FELSOP, or fatalities associated with legal interventions. The current proportions of less than 1/10th of 1% raise questions about substantial criticisms and calls for pervasive reforms and suggest careful considerations are needed regarding reasonable expectations. The proportions appear much smaller than the AHH comparator data, providing important context and raising questions concerning disparate discourses used for police and HCWs. Police and HCWs are justifiably held to higher standards (Davids 2006; Kinsinger 2010); however, the standards must remain reasonable and attainable if the public wants people to choose careers as police and HCWs. The current narratives for HCWs rightfully appear much more reasonable and assume beneficence. If we want to reduce AHH, we engage HCWs to make policy changes, and we discuss increasing resources or reducing service expectations. The current results suggest Canadian police warrant a similar narrative and similar engagements, changes that would require concerted efforts from multiple groups (e.g., concerned groups, governments, and media). Discourse involving police and HCWs should explicate their extraordinary service despite exceptional demands and the growing problems with recruitment and retention. Police and HCWs are members of the communities they serve, which means informed, contextualized, and constructive narratives offer opportunities that can benefit everyone.

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Data availability

Data generated or analyzed during this study are available in the following repositories: Statistics Canada (2024) “Table 13-10-0156-01 Deaths, by cause, Chapter XX: External causes of morbidity and mortality (V01–Y89)”. Available at <https://doi.org/10.25318/1310015601-eng>; Statistics Canada (2024) “Table 17-10-0009-01 Population Estimates, quarterly”. Available at <https://doi.org/10.25318/1710000901-eng>; Statistics Canada (2024) “Table 35-10-0076-01 Police Personnel and Selected Crime Statistics”. Available at <https://doi.org/10.25318/3510007601-eng>; Canadian Institute for Health Information (2024) “Hospitalization and Childbirth, 1995–1996 to 2022–2023—Supplementary Statistics”. Ottawa, ON. Available at <https://www.cihi.ca/sites/default/files/document/hospitalization-childbirth-1995-2022-supplementary-data-tables-en.xlsx>; Canadian Institute for Health Information (2024) “Hospital Harm Results, 2014–2015 to 2023–2024”. Available at <https://www.cihi.ca/sites/default/files/document/hospital-harm-results-2014-2023-data-tables-en.xlsx>; and the number of cases referred to the Crown by IPCOAs were extracted from the published annual reports of each IPCOA, available on their respective websites.

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Competing interests

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