

**TITLE:** Tackling the Increasing Public Health Impact of Firearms: A Call to Action

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**DISCLOSURE:**

*The authors are Canadian medical students that are a part of the student branch of the Canadian Doctors for Protection from Guns (CDPG). The CDPG is a non-profit organization that advocates for change in gun control policy in Canada in effort to reduce firearm-related morbidity and mortality. The CDPG views firearm injury and death as a public health issue that is largely preventable. With the support of the Ontario Medical Association, Canadian Nurses Association, Canadian Psychiatric Association, and other organizations, the CDPG has proposed several actions for the Canadian government to address the firearm crisis. The CDPG believes that the government should implement evidence informed legislation and a strategic approach to reduce firearm injury and death. As well, the CDPG is advocating for funding and proper infrastructure for research is essential to inform policy interventions to reduce firearm related injury and death.*

**BACKGROUND**

**Firearms injury: A public health crisis in Canada**

The incidence of gun violence in Canada has been increasing with an 81% rise in violent offenses involving guns since 2009. One in three homicides now firearm related.<sup>1</sup>The issue extends beyond what is publicized in the news with the RCMP reporting 80% of firearm deaths in Canada being attributed to suicide.<sup>2</sup> Consider the Femicide observatory data: about 2 women per week are killed in Canada. In some years, the most frequent method of killing is by gun. The presence of a gun in the home makes it about 3.5X more likely that a woman will die in a domestic violence situation and that an adolescent will die in a suicide attempt than if a gun is not in the home. It is clear, firearm related injuries or deaths, whether unintentional or intentional, are preventable. Although this is a preventable public health issue, medical students and medical professionals receive minimal to no education on firearm injury, prevention of injury and how they can advocate for change both at the community and systems level. Additionally, despite the impact on our communities, there are many knowledge and research gaps in our understanding of gun violence, especially as this pertains to the Canadian landscape.

Research evidence demonstrates that gun violence remains a significant yet preventable public health threat in Canada. A recent study revealed that from 2016-2020 there were over 4000 deaths, over 3000 hospitalizations, and over 2500 emergency department visits related to firearm injuries.<sup>3</sup> Gun violence has also shown to disproportionately affect vulnerable populations including Indigenous peoples, youth, and women. Over the span of two decades, approximately 59% of homicide involving Indigenous women involved the use of a firearm.<sup>4</sup> The Canadian Paediatric Society have reported that between 2011-2015, 14% of all youth suicides involved a firearm and in these cases, the youth were more likely to have had access to firearms in their home.<sup>5</sup> Considering their developmental stage and increased impulsivity, the presence of a firearm in the home has been demonstrated as a strong risk factor for suicide completion in youth.<sup>6</sup> Research has also shown that gun possession in the home is a significant risk factor for spousal homicide, as firearms are the most commonly reported method used in fatal violence against women by their partners.<sup>7,8</sup>

Globally, Canada ranks 3rd among the G7 and 5th out of 23 countries in the OECD for age-adjusted gun-related mortality.<sup>9</sup> Recent research has shown that the Canadian firearm mortality rate is eight times that of the United Kingdom and Japan, and three times that of Australia and the Netherlands, countries with strict gun control legislation. As we aim to contextualize gun violence in Canada it is essential to move beyond sole comparisons with our neighbors, the United States, a country where gun violence remains a widespread issue.

### **Firearms injury: Addressing the root causes**

Firearm use is influenced by various factors ranging from the individual to the community level.<sup>10</sup> There is a significant overlap between social determinants of health and factors contributing to gun violence that can have a substantial burden on health systems and health outcomes.<sup>10,11</sup> Social determinants, such as low socioeconomic status and community violence, as well as substance use disorders can make one vulnerable to firearm violence.<sup>12</sup> To address the public health impact of firearms, we must consider the health inequities that exist on a social, environmental, and economic level. Overwhelmingly, those affected tend to be some of our most vulnerable communities: those with mental health illnesses especially in communities where resources are lacking, youth from minority communities and women in intimate partner violence situations.

Implementing system-level changes that influence determinants of health are important to address violence by firearms. For instance, government-implemented policies providing financial support to tackle poverty and income inequality have been associated with a reduction in gun violence.<sup>13</sup> The role of the government in addressing social determinants of health through funding, policy change, and research provides an opportunity to simultaneously address issues contributing to firearm use, injury, and death while focusing on other factors to improve overall health outcomes. The literature has convincingly demonstrated that social and structural factors predict gun violence. The intersection of poverty, racism, and firearm-related injuries and death requires that our government's approach gun related crime as a public health crisis. Investing in equity of access and adopting strength-based solutions focused on housing, employment, and education are at the center of reform amidst this epidemic.

### **Firearms injury: Role of medical professionals and closing gaps in medical curricula**

The Canadian Medical Association (CMA) defines gun violence as a public health issue in which physicians have a responsibility to engage. Historically, the medical community has held a defining role in social justice, equity and public health issues. Physicians are uniquely positioned to observe the harms of exposures (tobacco, asbestos, drinking and driving), as well as physicians are able to decode the scientific literature and are uniquely equipped to communicate the findings with the public and policy makers. One of the seven CanMeds roles is an advocate, not only for the individual patient, but also for the populations we serve.

Health care professionals' interactions with their communities provide them with intimate knowledge of the social factors influencing their patients' health. Ultimately, this offers physicians with an understanding of the public health programming most needed within their service areas. Medical students and physicians remain trusted and respected sources of information. Recent studies have shown that social media has provided a novel platform for physicians as they have begun to combat misinformation and effectively advocate for policy changes with respect to gun violence within their own communities.<sup>14</sup> It is imperative that we take a public health approach, encourage collective action, and enable collaboration with the wider healthcare community to successfully address the systemic factors perpetuating gun violence in our country. The public health perspective is severely lacking in firearms policy discussions, and this detrimentally affects the outcome. We need more public health representatives at the table to highlight how multiple issues weave together and can be tackled together such as firearms

impact and the need for mental health supports. However, many are unaware of the current issue and how they can advocate for change. We are often consoled that our gun violence issues are not to the same level as the United States, but as emphasized earlier there is much to be done in Canada.

Additionally, recent attention to the public health crisis of firearms and impacts on patients and families in the United States has led to the development of guidelines and curricula surrounding education for medical trainees. In 2021, a US-based consensus-driven guideline for firearm injury education among medical professionals was published indicating several key recommendations in curricula development. Recommendations included, but were not limited to, an understanding of firearm epidemiology and social context, patient-centered skills (such as identification individuals at risk of firearm injury, counseling on safe storage, etc.), documentation of firearm injury risk and counseling, general ethical and legal implications (such as legislation and mandated reporting) and general knowledge regarding firearm and ammunition types and storage techniques.<sup>15</sup> Several US institutions have piloted related curricula, with general findings of increased confidence in students with regards to counseling patients and policy-related skills.<sup>16</sup> Similar initiatives can be adopted in Canadian medical school curricula.

In March 2023, the mass casualty commission report was released by the joint federal and provincial commission into the April 2020 Nova Scotia mass casualty. In their report they echo the need for a cultural shift to institute a public health approach to gun safety. This included strengthening public knowledge about: firearm related laws and regulations; identifying risk factors associated with accidental injury, suicide, domestic violence; how to raise concerns; and how to store firearms appropriately.<sup>17</sup> We agree that this is an essential part of tackling firearms injury and believe medical students should learn this information as they can play a role in tackling public health issues. Incorporating education about the rising impact of firearms into medical school curricula can help to promote the health of individuals and communities. For the community, doctors who are educated about gun violence may be more likely to effectively identify risk factors, provide resources and participate in proactive initiatives, potentially reducing the number of gun violence incidents.<sup>18</sup> Further, this would enhance the ability of the medical community to play a role in reducing gun violence in their communities and may be more effective advocates for further policy changes. For medical students, this can help to broaden their understanding of the biopsychosocial upstream factors that can contribute to health from a new lens and apply this understanding to other similarly impactful public health matters.<sup>19</sup> By educating future physicians on the important and rising public health issue of gun violence, the government can help equip health professionals to address firearms impact, to be involved in public health and advocacy efforts and hopefully mitigate the effect of firearms on the Canadian people.

## **PRINCIPLES**

The Ontario Medical Students Association puts forward the following principles to guide recommendations for implementing changes when it comes to firearms and including comprehensive training about firearms injury into medical education:

1. Given the increasing incidence of firearms injury in Canada and the detrimental short- and long-term effects, there is need for change at both the community and systems level including the need to train future practitioners on this issue
2. As part of implementing widespread change there must be increased awareness about the rising impact of firearm injury and it must be framed as a biopsychosocial public health issue.

3. We should implement proactive measures and work towards improving the lack of Canadian research on firearms injuries in order to better inform public health initiatives and government legislation.
4. All Ontarians require proactive and evidence-based measures to prevent fire-arm injury and death including addressing the role of societal determinants of health in the public health issue.
5. Improving the health literacy of Ontarians includes educating the public about safety laws, risks of firearms and effective strategies to reduce firearm injuries and deaths.
6. Curricula that will enable the physicians of tomorrow to have conversations with patients about the risk of guns in homes as these risk pertain to accidental discharge, suicide and domestic violence/homicide.

These principles follow the core conditions of the Canada Health Act:

1. Universality, in that all Ontarians require proactive and evidence-based measures to prevent fire-arm injury and death including addressing the role of societal determinants of health in the public health issue.
2. Comprehensiveness, in that improving the health literacy of Ontarians includes educating the public about safety laws, risks of firearms and effective strategies to reduce firearm injuries and deaths.

## **RECOMMENDATIONS**

**Recommendation 1: In collaboration with the OMSA, individual Faculties of Medicine should improve awareness of the increasing impact of firearm injury and death, frame the issue as a biopsychosocial public health issue and equip medical students with the knowledge to address firearms related issues.**

Currently, the government of Canada is discussing strategies to address gun violence and strengthen gun laws by debating new acts such as bill C-21. It is therefore an opportune time to increase public awareness of firearms injuries and the extent of this public health issue. Although Canada has a lower rate of firearms related injury and death compared to the USA, we have a higher rate than other industrialized OECD countries such as the UK and Australia. Framing firearms injury as a public health issue will allow the consideration of social and structural inequities such as poverty and lack of opportunity, as major factors influencing this problem. Looking at the problem as a biopsychosocial issue also allows the medical community to treat the issue beyond its immediate effects and instead examine all the social, environmental, and psychological factors that will affect people both before and after injury.<sup>20</sup>

Physicians have a unique role beyond treating firearms injuries, they can take an active role in preventing firearm-related injuries and deaths by counseling on safe firearm storage, risks and benefits of firearm ownership, and providing resources to those both at risk of and affected by firearm injury. Recent research reports and medical curricula recommendations from the United States can provide insight on integrating firearm violence prevention and the relationship with societal factors into appropriate school courses. It is essential to equip medical students with the knowledge to have these open conversations with patients and how they can advocate for system level changes. Incorporating these curricula changes will also assist in helping increase medical student knowledge and understanding about diverse and vulnerable populations, the long-lasting impacts of gun violence and the circumstances that not only affect the health of victims but the health of whole communities.

**Recommendation 2: Implement formalized education or training opportunities pertaining to the evolving roles and responsibilities of physicians in protecting the safety of patients in relation to firearm injury prevention.**

This may include but is not limited to:

- Discussion of firearm-related injuries as a growing and concerning public health problem.
- Discussion of the role that physicians play in safety and injury prevention as well as within the regulation of firearms.
- Informing on current legislation relating to firearm use and storage.
- Counselling patients about the risks of firearms in the home.

Physicians have an integral role in injury prevention, in particular, firearm injury and mortality prevention.<sup>21</sup> The American Association of Family Physicians stated that “Reducing gun injury is not only amenable to action at the level of policy and public health initiatives, but that of individual physicians.” Across the US, physician-based interventions have been implemented in settings such as pediatric, primary care and emergency departments.<sup>22,23</sup> Interventions include screening by physicians for those most at-risk for firearm injury (such as suicide), and conversations led by physicians with regards to firearm safety, storage, and associated consequences (lethal means assessment and counseling).<sup>24</sup> By intervening, physicians have a role in prevention of significant morbidity and mortality. However, several studies have reported that most physicians and medical trainees do not feel confident in having these discussions, and do not conduct them.<sup>25</sup> Some have suggested this is a result of a “lack of education about the basics of firearm injury, its risk factors, and its prevention”.<sup>26</sup>

The Canadian climate is evolving, with increased violence, firearm use, shootings, and mass shootings. Firearm injury in Canada has become increasingly recognized as a public health issue, leading to political attention and changes to regulation and legislation. However, the medical profession remains delayed in terms of educating physicians on their roles and responsibilities in firearm injury prevention. Current medical trainee curricula also lack injury prevention and, specifically, firearm injury prevention areas; increasingly common and morbid medical issues. The need for screening among those at-risk for suicide by firearm is, in particular, important in the Ontario context as close to 70% of all firearm injuries are intentionally self-inflicted and an extremely lethal method of injury.<sup>27</sup> Again, physicians can play an extremely valuable role in identifying at-risk individuals and preventing firearm suicides.<sup>28</sup>

For physicians and trainees to be able to screen and counsel with regards to firearms, however, they must be equipped. They need to be aware of the current legislation surrounding firearm use and abuse, such as background/mental health checks, where physicians may play a direct role in the regulation process, similar to that of driver’s licenses. To be able to guide patients on firearm safety, they must first be trained on the significance of the problem and appropriate safety measures.

**Recommendation 3: Health professionals, including those in training should advocate with government to study and introduce evidence-informed legislation. The government should introduce legislation to reduce the prevalence of firearms, such as restrictions on gun ownership and a strategic approach to reduce the illegal sale of guns and the importation of firearms from other jurisdictions.**

Government laws and regulations play a large role in the distribution and ownership of guns within Canada. Since the inclusion of gun possession into the criminal code, various bills have been introduced to further strengthen control over firearms. The introduction of bill C-17 provided more rigorous screening requirements and stricter penalties for gun possession and use.<sup>29,30</sup> The impact of this

bill was significant in decreasing suicide and homicide rates involving the use of guns, suggesting a role for the use of laws to decrease firearm morbidity and mortality in Canada.<sup>29</sup> More recently, with the introduction of bill C-21, the Canadian government has provided stronger regulations over gun possession, placing a “freeze” on handgun purchase, sale or transfer within Canada and import to Canada, further controlling the distribution of firearms.<sup>31</sup> However, despite these bills, the distribution of guns has not been completely ceased and the presence of firearms remains an issue suggesting the need for further restrictions on firearm possession including the banning of assault weapons and handguns.

A major point of access to guns in Canada is through illegal importation. In particular, the United States has been implicated in providing a large number of guns recovered in crimes in Canada.<sup>32,33</sup> To adequately address this problem, the Canadian government must take firm action to compose a strategic plan to reduce the illegal sale of firearms. Approaches to reducing the illegal distribution of firearms include tracing the source of guns retrieved from crimes and enhanced theft reporting.<sup>34</sup> By establishing greater policies and plans to address firearm distribution, we can reduce the overall burden of firearm violence on the public.

**Recommendation 4: Increase federal and provincial funding to support research related to: firearm-related epidemiology, the impacts of the social determinants of health on the prevalence and impacts of gun violence, and evidence-based strategies and legislation that reduce firearm related injuries and deaths.**

Research in the area of gun violence epidemiology is critical to implement effective public health strategies that reduce firearm related fatalities, this is especially important in Canada where there is a significant lack of Canadian-specific firearms research. Statistics can identify populations that are at high risk for gun violence such as neighborhoods with increased poverty rates. It is thus critical that this research also be interpreted through a social determinants of health lens. Unstable housing, poor income, and low levels of education, have all shown to increase the risk of experiencing or perpetuating gun violence.<sup>35,36,37</sup> Research and its contextualization with academic concepts can help facilitate the implementation of targeted prevention programs and interventions that address root causes of this issue. Moreover, research can also establish fire-arm related morbidity and mortality rates, determine common firearm related injury types, and identify long-term effects of gun violence on survivors, all of which inform policies and interventions that decrease the impact of firearms on a multi-factor level.

When implementing solutions, it is essential that evidence-based strategies are used to ensure feasibility and effectiveness. Research has consistently demonstrated that background checks are associated with decreased rates of firearm related morbidity and mortality.<sup>38</sup> Studies have also highlighted the efficacy of community-based violence intervention programs, which involve identifying high risk individuals and providing them support to decrease engagement in gun violence.<sup>39</sup>

Supporting the production of research, contextualizing findings with academic concepts, and utilizing evidence to inform interventions are essential to effectively address Canada’s gun violence epidemic.

**Recommendation 5: The government should implement proactive measures and have greater focus on addressing the root causes of violence in communities.**

As with most public health issues, a multipronged approach and collaboration with local organizations is required in order to target root causes and provide viable options for people at risk of firearm injury.

Some examples of proactive measures include:

1. Improve timely access for Canadians to a comprehensive range of publicly funded mental health services. It is important to note that research has shown that only a small percentage of individuals with mental illness commit violent acts, however mental health services can help provide support to at-risk individuals and those with suicidal/homicidal ideations.<sup>40,41</sup> Mental health services are also essential in addressing the impact of gun violence on survivors and their loved ones.
2. Work with local organizations to include firearm-specific material within programs aimed at education on suicide prevention. As mentioned previously although media focuses on firearm homicides, in Canada the majority of firearm-related deaths (about 80%) are caused by suicide impacting mainly older men in rural areas.<sup>42</sup>
3. Provide and making the public aware of options for safe storage at remote locations in cases when someone is suicidal, violent or at risk of accidental injury and has access to a gun. Canada recently passed the “red flag” law, similar to the US, in which people can ask for an emergency weapons prohibition order to immediately remove firearms, for up to 30 days, from individuals that pose a risk to safety.<sup>43</sup> Public health initiatives should be started to raise awareness about the role of health care providers and how the public can use this law appropriately, especially for those affected the most including women, people with mental health issues, Indigenous people and racialized communities.
4. Collaborate with domestic violence organizations to develop strategies to prevent firearm use in intimate partner violence including increasing public awareness of the risk and harm associated with firearms in unsafe homes. The presence of firearms is the largest risk factor for lethal domestic violence, and rural women are at increased risk for homicide by firearms.<sup>44</sup>
5. Create evidence-based, appropriately funded community-based programs aimed at improving the social determinants of health to support children, youth, and young adults at high risk for gang involvement. A Toronto report found a significant correlation between gang involvement and exposure to firearms, additionally youth affected by gangs tend to be from vulnerable low-income neighborhoods already facing many health inequities.<sup>45</sup>

## REFERENCES

1. Firearm-related injuries and deaths in Ontario, Canada, 2002–2016: a population-based study David Gomez, Natasha Saunders, Brittany Greene, Robin Santiago, Najma Ahmed and Nancy N. Baxter *CMAJ* October 19, 2020 192 (42) E1253-E1263; DOI: <https://doi.org/10.1503/cmaj.200722>
2. Government of Canada. (2022). Firearms, Accidental Deaths, Suicides and Violent Crime: An Updated Review of the Literature with Special Reference to the Canadian Situation. Accessed Dec 21 2022. Retrieved from [https://www.justice.gc.ca/eng/rp-pr/csj-sjc/jsp-sjp/wd98\\_4-dt98\\_4/p4.html](https://www.justice.gc.ca/eng/rp-pr/csj-sjc/jsp-sjp/wd98_4-dt98_4/p4.html)
3. Alemu, F., & Duku, E. (2023). Child maltreatment and injury morbidity among children aged less than five years in sub-Saharan Africa: a systematic review and meta-analysis. *Injury Epidemiology*, 10(1), 18. <https://doi.org/10.1186/s40621-023-00422-z>
4. National Inquiry into Missing and Murdered Indigenous Women and Girls. (2019). Reclaiming Power and Place: The Final Report of the National Inquiry into Missing and Murdered Indigenous Women and Girls. <https://www.mmiwg-ffada.ca/final-report/>
5. Canadian Paediatric Society. (2018). Youth suicide and self-harm: What can we do to prevent it? <https://www.cps.ca/en/documents/position/youth-suicide-and-self-harm>
6. Rodgers, S., Guilaran, J., Bolton, J., Marrie, R., Katz, L. Y., & Sinyor, M. (2020). Firearm access and youth suicide in Canada: a cohort study. *Canadian Medical Association Journal*, 192(22), E583-E590. <https://doi.org/10.1503/cmaj.191540>
7. Javanmardi, M., & Hasan, S. (2020). Gun access and spousal homicide in Canada: a regional analysis. *BMC Public Health*, 20(1), 1-8.
8. Canadian Femicide Observatory for Justice and Accountability. (2020). 2020 National Femicide Report. <https://femicideinCanada.ca/2020-2/>
9. Santaella-Tenorio, J., Cerdá, M., Villaveces, A., & Galea, S. (2016). What do we know about the association between firearm legislation and firearm-related injuries?. *Epidemiologic reviews*, 38(1), 140-157.
10. World Health Organization. Social determinants of health. Accessed December 30, 2022. <https://www.who.int/health-topics/social-determinants-of-health>
11. Kim D. Social determinants of health in relation to firearm-related homicides in the United States: A nationwide multilevel cross-sectional study. *PLOS Medicine*. 2019;16(12):e1002978. doi:10.1371/journal.pmed.1002978
12. Sanchez C, Jaguan D, Shaikh S, McKenney M, Elkbuli A. A systematic review of the causes and prevention strategies in reducing gun violence in the United States. *The American Journal of Emergency Medicine*. 2020;38(10):2169-2178. doi:10.1016/j.ajem.2020.06.062



13. Rowhani-Rahbar A, Schleimer JP, Moe CA, Rivara FP, Hill HD. Income support policies and firearm violence prevention: A scoping review. *Preventive Medicine*. 2022;165:107133. doi:10.1016/j.ypmed.2022.107133
14. Ojo, A., Guntuku, S. C., Zheng, M., Beidas, R. S., & Ranney, M. L. (2021). How health care workers wield influence through Twitter hashtags: Retrospective cross-sectional study of the gun violence and COVID-19 public health crises. *JMIR Public Health and Surveillance*, 7(1), e24562.
15. Hoops, K., Fahimi, J., Khoeur, L., Studenmund, C., Barber, C., Barnhorst, A., ... & Ranney, M. L. (2021). Consensus-driven priorities for firearm injury education among medical professionals. *Academic medicine*, 97(1), 93-104.
16. Kucirek, N., Studenmund, C., Cordero, D. M., & Garg, M. (2021). A preclinical medical school curriculum on firearm violence to develop patient counseling and foundational health policy skills. *Medical education online*, 26(1), 1984177.
17. The Joint Federal/Provincial Commission into the April 2020 Nova Scotia Mass Casualty. (2023). Turning the tide together. Mass Casualty Commission. <https://masscasualtycommission.ca/final-report/>
18. Liller, K. D., & Mehmood, A. (2021). The Important Role for Physicians as Advocates for Firearm and Road Traffic Injury Prevention. *American journal of lifestyle medicine*, 15(6), 701–705. <https://doi.org/10.1177/15598276211039458>
19. Barron, A., Hargarten, S., & Webb, T. (2021). Gun violence education in medical school: A call to action. *Teaching and Learning in Medicine*, 34(3), 295–300. <https://doi.org/10.1080/10401334.2021.1906254>
20. Hargarten, S. W., Lerner, E. B., Gorelick, M., Brasel, K., deRoon-Cassini, T., & Kohlbeck, S. (2018). Gun violence: a biopsychosocial disease. *Western journal of emergency medicine*, 19(6), 1024.
21. Abdallah HO, Kaufman EJ. Before the Bullets Fly: The Physician's Role in Preventing Firearm Injury. *Yale J Biol Med*. 2021 Mar 31;94(1):147-152. PMID: 33795991; PMCID: PMC7995933.
22. Beidas RS, Jager-Hyman S, Becker-Haimes EM, Wolk CB, Ahmedani BK, Zeber JE, Fein JA, Brown GK, Gregor CA, Lieberman A, Marcus SC. Acceptability and Use of Evidence-Based Practices for Firearm Storage in Pediatric Primary Care. *Acad Pediatr*. 2019 Aug;19(6):670-676. doi: 10.1016/j.acap.2018.11.007. Epub 2018 Nov 30. PMID: 30508600; PMCID: PMC6542719.
23. Siry BJ, Knoepke CE, Ernestus SM, Matlock DD, Betz ME. Lethal means counseling for suicidal adults in the emergency department: A qualitative study. *West J Emerg Med*. 2021;22:471–477.

24. Diurba S, Johnson RL, Siry BJ, et al. Lethal means assessment and counseling in the emergency department: Differences by provider type and personal home firearms. *Suicide Life Threat Behav.* 2020;50:1054–1064.
25. Paul J. D. Roszko, Jonathan Ameli, Patrick M. Carter, Rebecca M. Cunningham, Megan L. Ranney, Clinician Attitudes, Screening Practices, and Interventions to Reduce Firearm-Related Injury, *Epidemiologic Reviews*, Volume 38, Issue 1, 1 January 2016, Pages 87–110, <https://doi.org/10.1093/epirev/mxv005>
26. Mueller KL, Blomkalns AL, Ranney ML. Taking Aim at the Injury Prevention Curriculum: Educating Residents on Talking to Patients About Firearm Injury. *Acad Med.* 2022 Oct 1;97(10):1433-1437.
27. Gomez D, Saunders N, Greene B, Santiago R, Ahmed N, Baxter NN. Firearm-related injuries and deaths in Ontario, Canada, 2002-2016: a population-based study. *CMAJ.* 2020 Oct 19;192(42):E1253-E1263. doi: 10.1503/cmaj.200722. Erratum in: *CMAJ.* 2020 Nov 2;192(44):E1393. PMID: 33077520; PMCID: PMC7588199.
28. Goldstein EV, Prater LC, Bose-Brill S, Wickizer TM. The Firearm Suicide Crisis: Physicians Can Make a Difference. *Ann Fam Med.* 2020 May;18(3):265-268. doi: 10.1370/afm.2522. PMID: 32393564; PMCID: PMC7213998.
29. Bridges FS. Gun control law (Bill C-17), suicide, and homicide in Canada. *Psychol Rep.* 2004;94(3 Pt 1):819-826. doi:10.2466/pr0.94.3.819-826
30. Langmann C. Suicide, firearms, and legislation: A review of the Canadian evidence. *Prev Med.* 2021;152(Pt 1):106471. doi:10.1016/j.ypmed.2021.106471
31. Canada PS. A comprehensive strategy to address gun violence and strengthen gun laws in Canada. Published May 30, 2022. Accessed March 30, 2023. <https://www.publicsafety.gc.ca/cnt/cntrng-crm/frms/c21-en.aspx#s1>
32. Cook PJ, Cukier W, Krause K. The illicit firearms trade in North America. *Criminology & Criminal Justice.* 2009;9(3):265-286. doi:10.1177/1748895809336377
33. Small Arms Survey 2002: Counting the Human Cost. Published June 10, 2002. Accessed March 30, 2023. <https://www.smallarmssurvey.org/resource/small-arms-survey-2002-counting-human-cost>
34. Vernick JS, Webster DW. Policies to prevent firearm trafficking. *Inj Prev.* 2007;13(2):78-79. doi:10.1136/ip.2007.015487
35. Zeoli, A. M., Grady, S. C., & Pizarro, J. M. (2021). Neighborhood-level risk factors for firearm homicide: An analysis of 178 American cities. *American Journal of Public Health*, 111(6), 1103-1109. <https://doi.org/10.2105/AJPH.2020.306136>

36. Grineski, S. E., Collins, T. W., Chakraborty, J., & Montgomery, M. C. (2020). The association between economic insecurity and firearm violence: An empirical examination in 50 U.S. states. *Social Science & Medicine*, 258, 113119. <https://doi.org/10.1016/j.socscimed.2020.113119>
37. Keyes, K. M., Jager-Hyman, S., Hamilton, A., & Haas, A. (2020). Educational attainment and gun violence: A systematic literature review. *Health Education & Behavior*, 47(3), 343-355. <https://doi.org/10.1177/1090198120927167>
38. Zeoli, A. M., McCourt, A., Buggs, S., Frattaroli, S., & Lilley, D. (2017). Association between rates of background checks and firearm deaths in the United States, 1999 to 2013. *JAMA internal medicine*, 177(12), 1844-1851. doi: 10.1001/jamainternmed.2017.5306
39. Branas, C. C., Kondo, M. C., Murphy, S. M., South, E. C., Polsky, D., MacDonald, J. M., ... & Wiebe, D. J. (2018). Urban blight remediation as a cost-beneficial solution to firearm violence. *American journal of public health*, 108(9), 1128-1133. doi: 10.2105/AJPH.2018.304514
40. American Psychological Association. (2013). Gun Violence: Prediction, Prevention, and Policy. Retrieved from <https://www.apa.org/pubs/info/reports/gun-violence-prevention>
41. National Institute of Mental Health. (2020). Mental Illness and Violence. Retrieved from <https://www.nimh.nih.gov/health/topics/mental-illness-and-violence/index.shtml>
42. Gomez, D., Saunders, N., Greene, B., Santiago, R., Ahmed, N., & Baxter, N. N. (2020). Firearm-related injuries and deaths in Ontario, Canada, 2002–2016: a population-based study. *CMAJ*, 192(42), E1253-E1263.
43. Public Safety Canada. (2023, Jan 27). A comprehensive strategy to address gun violence and strengthen gun laws in Canada: BILL C-21, An Act to amend certain Acts and to make certain consequential amendments (firearms). <https://www.publicsafety.gc.ca/cnt/cntrng-crm/frms/c21-en.aspx>
44. Lynch, K. R., Jackson, D. B., & Logan, T. K. (2021). Coercive control, stalking, and guns: Modeling service professionals' perceived risk of potentially fatal intimate partner gun violence. *Journal of interpersonal violence*, 36(15-16), NP7997-NP8018.
45. School Community Safety Advisory Panel. The Road to Health: A Final Report on School Safety. Toronto, Ont.: Toronto District School Board, 2008: [www.falconerschoolsafetyreport.com/finalReport.html](http://www.falconerschoolsafetyreport.com/finalReport.html) (Accessed February 7, 2017).