

## **68% of deaths from firearms are from self-harm, majority in older men in rural regions**

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A new study of gun injuries and deaths in Ontario found that 68% of firearm-related deaths were from self-harm, and they most often occurred in older men living in rural regions, pointing to the need for targeted prevention efforts. The study is published in *CMAJ (Canadian Medical Association Journal)*.

There were 2009 injuries secondary to self-harm over the study period, and "this is equivalent to a firearm-related [injury](#) ... every 3 days; 92% of these injuries were fatal," writes Dr. David Gomez, a trauma surgeon at St. Michael's Hospital, Unity Health Toronto, adjunct staff scientist at ICES, and assistant professor at the University of Toronto, with coauthors.

In Canada, nonfatal firearm-related injuries are largely unmeasured.

To better understand injuries and deaths from firearms, a major cause of morbidity and mortality, researchers looked at data on all residents of Ontario with a valid OHIP number who were injured or died of gun injuries between 2002 and 2016. They used hospital discharge and provincial [death](#) records to categorize injuries as assault, unintentional, self-harm and undetermined intent.

Some findings:

- Injuries related to assault accounted for 40% of nonfatal injuries and 25% of deaths. Young men living in low income neighborhoods were overrepresented in this group.
- Injuries and [death rates](#) were higher in [rural areas](#) versus [urban areas](#), largely due to higher rates of self-harm in these regions.
- Injury patterns varied by age, with assault most common in people aged 15-34, and self-harm being most common among those aged 45 or older.
- Five of 10 Census divisions with the highest injury rates from assault were in the Greater Toronto Area and Hamilton.
- Firearm injury rates varied over time, with a high of 4.71 per 100 000 in 2005/06 after which rates declined, followed by an increase in the last 2 years of the study (3.51 per 100 000 in 2015/16). Both peaks were related to injuries from assault as [self-harm](#) rates showed less variability.

Targeted initiatives are required to address the different causes of injuries in rural and urban regions.

"This urban-rural divide highlights the need for tailored interventions to address these 2 contrasting injury patterns," write the authors. "Our findings highlight the need for suicide-prevention strategies in rural Ontario targeted at men aged 45 or older. Restricting access to lethal methods by such means as safe-storage campaigns and reduction in firearm ownership must go hand in hand with depression screening and treatment."

"Firearm-related injuries and deaths in Ontario, Canada, 2002-2016: a population-based study" is published October 19, 2020.

**More information:** *Canadian Medical Association Journal* (2020).  
[www.cmaj.ca/lookup/doi/10.1503/cmaj.200722](http://www.cmaj.ca/lookup/doi/10.1503/cmaj.200722)

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