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Deaths involving firearms

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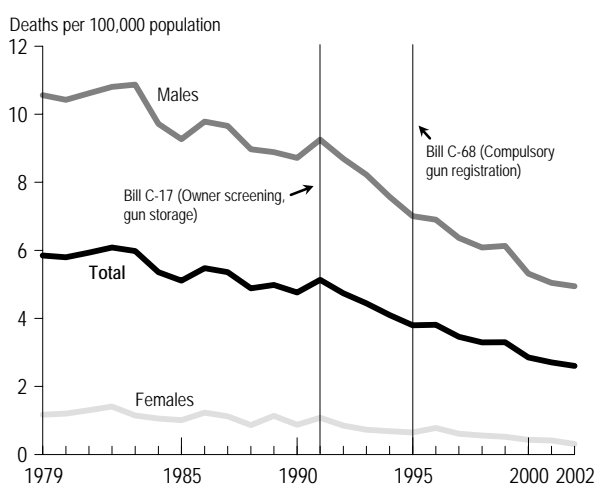
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DEATHS INVOLVING FIREARMS by Kathryn Wilkins

In 2002, 816 Canadians died from firearms-related injuries (see *Gun control laws*). This amounted to 2.6 deaths per 100,000 population. The number of such deaths among males far outnumbered that for females: 767 versus 49, representing rates of 4.9 and 0.3 deaths per 100,000 population, respectively. These figures are based on the most recent data available from the Canadian Mortality Data Base, which comprises information from death certificates.

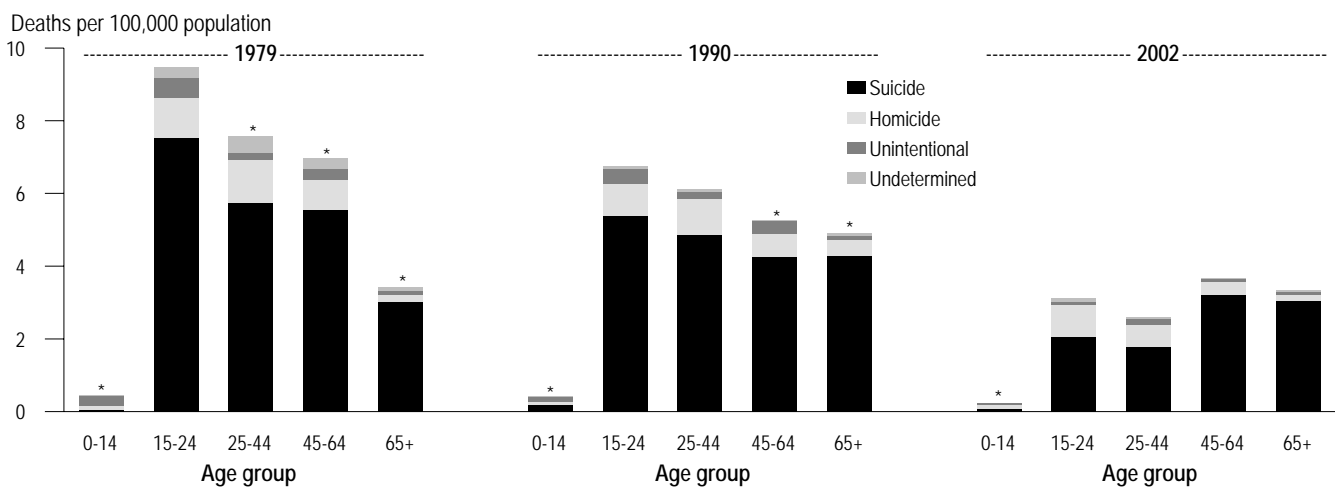
The rates of deaths related to firearms have declined over the past couple of decades. Between 1979 and 2002, the male rate fell from 10.6 to 4.9 deaths per 100,000 population and the female rate, from 1.2 to 0.3 (Table A). In other words, over this 23-year period, the rate for males fell by just over one-half; the rate for females, by three-quarters.

Rate of death from injury involving firearm—by sex



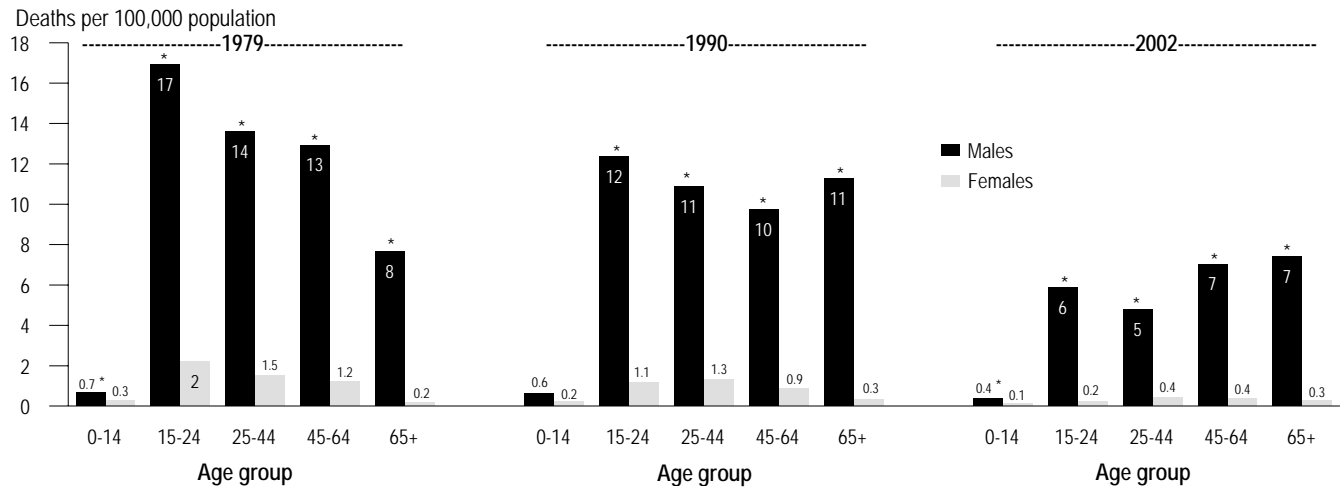
Data source: Canadian Mortality Database

Rate of death from injury involving firearm—by manner/intent and age group



Data source: Canadian Mortality Database
 *Significantly different from rate for 15-to-24 age group in same year (p < 0.05)

Rate of death from injury involving firearm—by sex and age group



Data source: Canadian Mortality Database
 *Significantly higher than rate for females (p < 0.05)

Age gradient declines

In 1979, the rate of deaths related to firearms was highest among 15- to 24-year-olds (see also Table B). By 1990, the age gradient had decreased somewhat, and by 2002, differences between age groups had largely disappeared for people aged 15 or older. Sizable decreases in death rates—particularly notable for suicides involving firearms—in the 15-to-24 and 25-to-44 age groups accounted for most of the levelling over age groups that had occurred by 2002.

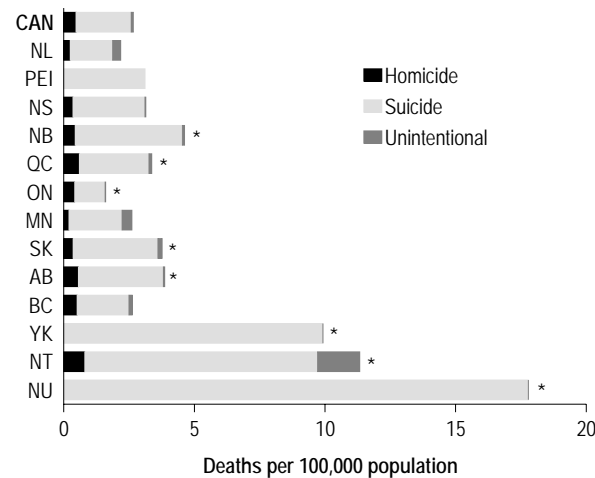
Rates higher in North

The average annual rate of firearms-related deaths for 2000-2002 was significantly higher in the territories than in Canada as a whole. Rates in several provinces also

differed significantly from the national rate. In New Brunswick, Québec, Saskatchewan and Alberta, the rate was higher; in Ontario, it was lower (see also Table C).

In Montreal, Calgary, Vancouver and Toronto, Canada's four largest census metropolitan areas (CMAs), the overall rates of deaths related to firearms differed somewhat. The only statistically significant difference emerged between Montreal and Toronto: 2.2 versus 1.3 firearms-related deaths per 100,000 population. Differences in rates of homicide and suicide among the four large cities were not statistically significant.

Average annual rate of death (2000-2002) from injury involving firearm—by manner/intent and province/territory

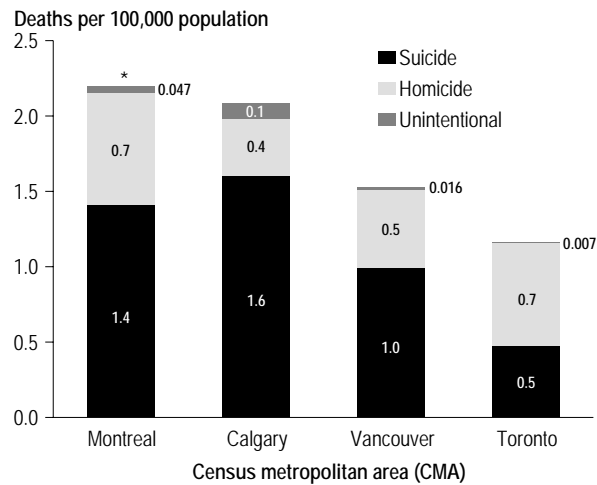


Data source: Canadian Mortality Database
 * Combined rate significantly different from estimate for Canada (p < 0.05)

Most are suicides

In each year from 1979 to 2002, about four-fifths of all firearms-related deaths were

Average annual rate of death (2000-2002) from injury involving firearm—by manner/intent for selected CMA



Data source: Canadian Mortality Database

* Combined rate significantly higher than that for Toronto ($p < 0.05$)

suicides. Homicides usually accounted for around 15%, and about 4% of deaths involving a firearm were unintentional.

Beginning in the mid-1980s through 2002, the rate of suicide involving a firearm fell from 5 to 2 deaths per 100,000. The falling rate of firearms-related suicides is reflected in a declining use of shooting as a means of committing suicide. Among all suicides committed from 1979 and throughout the 1980s, around one-third involved firearms. Beginning in the early 1990s, this share began to drop, and by 2002, about 1 in 6 suicides was carried out with a firearm. As gun-related suicides declined, suicide by suffocation/hanging became more common: the rate rose from about 3 to 5 deaths per 100,000. Still, the downturn in firearms-related suicides contributed to a decline in the overall suicide rate, which fell from about 14 to 12 deaths per 100,000 population.

The decline in the rate of suicides related to firearms accounted for most of the decrease in the firearms-related death rate.

Gun control laws

In Canada, laws regulating guns date back more than a century. Even before the first Criminal Code in 1892, Justices of the Peace had the authority to jail anyone who carried a handgun but had no reason to fear an assault against their life or property.¹ Then in 1892, the Criminal Code required that handgun owners who could not sufficiently justify ownership have a basic permit to carry their pistol. A 1934 law was the first to require handgun owners to formally register their guns, and the records were maintained regionally by designated police departments or by the Royal Canadian Mounted Police. When the handgun registry was centralized in 1951, the registration of automatic firearms also became mandatory.

More recent firearm restrictions were enacted in 1977 (Bill C-51), 1991 (Bill C-17) and 1995 (Bill C-68). The 1977 law mandated that people acquiring a firearm have a Firearms Acquisitions Certificate attesting that they are at least 16 years of age and have no criminal record or history of mental illness. The later legislation reduced the availability of and accessibility to firearms, requiring more extensive background screening of prospective purchasers, registration of all guns owned, and safe storage of these weapons. Compulsory registration, which allowed each gun acquired to be linked to its owner, also required that spouses and former spouses be notified about the gun's acquisition.

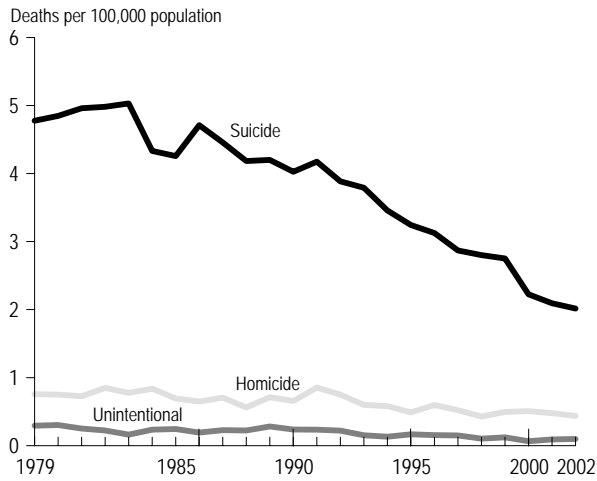
In 1995, when gun registration became compulsory, the death rate for firearms-related injuries was 3.8 per 100,000 population. Over the following years, the rate, which had been falling quite steadily since the early 1990s, continued to drop. Of course, it is difficult to measure the contribution that gun control regulations may have made to this decrease.

Homicides down

The rate of homicides involving a firearm fell from 0.8 deaths per 100,000 population in the early 1980s to 0.4 in 2002. This trend mirrored a decline in the overall homicide rate, although the share of homicides in which a firearm was used remained fairly stable over the entire period, at just under one-third.

A report based on police records indicates that handguns accounted for two-thirds of firearm

Rate of death from injury involving firearm—by manner/intent



Data source: Canadian Mortality Database

homicides in 2002, up from about one-half during the 1990s.² Rifles and shotguns accounted for one-quarter of all homicides involving firearms; the remainder were committed with other types of firearms (data not shown).

Unintentional deaths

In 1979, 71 Canadians died from unintentional firearms-related injuries, representing a rate of 3 deaths per million population. People younger than 25 accounted for the majority (60%) of these deaths: 16 were in children under 15, and 27 occurred in the 15-to-24 age group.

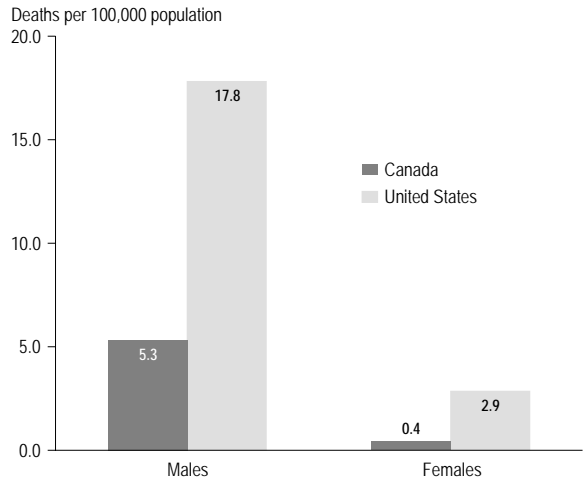
During the 1990s, the rate of unintentional fatalities related to firearms fell fairly steadily, and by 2002, it was one-third the 1979 level. In 2002, 31 people were unintentionally killed by firearms. Three of these victims were younger than 15, and another three were between 15 and 24. Decreases in the death rates in these age groups accounted for much of the decrease in the overall rate of unintentional firearms-related deaths between 1979 and 2002.

Canadian and US rates

The risk of death from a firearms-related injury in Canada is a fraction of that in the United States. In 2000, American males had more than three times the risk of dying from injuries related to firearms when compared with their Canadian counterparts. The excess was even greater for US females—seven times as high.³

Firearm homicide rates in the United States are strikingly higher than in Canada. In 2000, the rate of homicide involving a gun was 3.8 per 100,000 population in the United States, nearly eight times as high as Canada's rate of 0.5.³ In Canada, homicides accounted for 18% of deaths involving firearms in 2000, compared with 38% in the United States.⁴

Rates of death from injury involving firearm—Canada and the United States, 2000



Data sources: Canadian Mortality Database; United States National Center for Injury Prevention and Control, Centers for Disease Control and Prevention

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Data sources

Data on firearms-related deaths in Canada are from the Canadian Mortality Data Base, and they are based on information abstracted and compiled from death certificates. The figures for the United States are from the National Center for Injury Prevention and Control, Centers for Disease Control and Prevention.³

Causes of death for deaths occurring between 1979 and 1999 were defined according to the *International Classification of Diseases, Ninth Revision (ICD-9)*,⁵ and those occurring between 2000 and 2002 were defined according to the tenth revision of this volume (ICD-10).⁶

The ICD-9 codes corresponding to the categories used in this article are:

- firearms-related suicide: E955.0 to E955.4
- firearms-related homicide: E965.0 to E965.4
- firearms-related, unintentional: E922.0 to E922.9
- firearms-related, intent undetermined: E985.0 to E985.4
- firearms-related legal intervention: E970

The ICD-10 codes are:

- firearms-related suicide: X72 to X74
- firearms-related homicide: X93 to X95
- firearms-related, unintentional: W32 to W34
- firearms-related, intent undetermined: Y22 to Y24
- firearms-related legal intervention: Y35.0

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- 2 Savoie J. Homicide in Canada, 2002. *Juristat* (Statistics Canada, Catalogue 85-002-XIE) 2003; 23(8): 1-21.
- 3 National Center for Injury Prevention and Control, Centers for Disease Control and Prevention. United States Firearms Deaths and Rates per 100,000: 2000. Available at <http://webappa.cdc.gov/cgi-bin/broker.exe>. Accessed March 24, 2004.
- 4 Centers for Disease Control. First reports evaluating the effectiveness of strategies for preventing violence: firearms laws. Findings from the Task Force on Community Preventive Services. *Morbidity and Mortality Weekly Report* 2003; 52 (No. RR-14): 11-20.
- 5 World Health Organization. *Manual of the International Classification of Diseases, Injuries and Death*. Based on the recommendations of the Ninth Revision Conference, 1975. Geneva: World Health Organization, 1977.
- 6 World Health Organization. *International Classification of Diseases and Related Health Problems, Tenth Revision, Volume 1*. Geneva: World Health Organization, 1992.

Table A

Number and rate of firearms-related deaths, by sex, Canada, 1979 to 2002

	Both sexes		Males		Females	
	Number population	Deaths per 100,000	Number population	Deaths per 100,000	Number population	Deaths per 100,000
1979	1,416	5.9	1,274	10.6	142	1.2
1980	1,421	5.8	1,273	10.4	148	1.2
1981	1,473	5.9	1,311	10.6	162	1.3
1982	1,528	6.1	1,350	10.8	178	1.4
1983	1,517	6.0	1,371	10.9	146	1.1
1984	1,372	5.4	1,236	9.7	136	1.1
1985	1,320	5.1	1,189	9.3	131	1.0
1986	1,435	5.5	1,273	9.8	162	1.2
1987	1,423	5.4	1,273	9.7	150	1.1
1988	1,314	4.9	1,197	9.0	117	0.9
1989	1,364	5.0	1,207	8.9	157	1.1
1990	1,323	4.8	1,201	8.7	122	0.9
1991	1,443	5.1	1,290	9.3	153	1.1
1992	1,352	4.7	1,230	8.7	122	0.8
1993	1,286	4.4	1,180	8.2	106	0.7
1994	1,199	4.1	1,098	7.6	101	0.7
1995	1,125	3.8	1,028	7.0	97	0.6
1996	1,131	3.8	1,014	6.9	117	0.8
1997	1,037	3.5	945	6.4	92	0.6
1998	996	3.3	911	6.1	85	0.6
1999	1,006	3.3	926	6.1	80	0.5
2000	878	2.9	811	5.3	67	0.4
2001	842	2.7	777	5.0	65	0.4
2002	816	2.6	767	4.9	49	0.3

Data source: Canadian Mortality Database

Table B**Annual number and rate of firearms-related deaths, by manner/intent and age group, 1979, 1990, and 2002**

	Suicide		Homicide		Unintentional		Undetermined	
	Number	Deaths per 100,000 population	Number	Deaths per 100,000 population	Number	Deaths per 100,000 population	Number	Deaths per 100,000 population
1979	1,085	4.5	183	0.8	71	0.3	62	0.3
0-14	3	0.1	6	0.1	16	0.3	1	0.0
15-24	362	7.5	52	1.1	27	0.6	14	0.3
25-44	398	5.7	82	1.2	13	0.2	31	0.4
45-64	255	5.6	38	0.8	13	0.3	14	0.3
65+	67	3.0	5	0.2	2	0.1	2	0.1
1990	1,053	3.8	182	0.7	66	0.2	13	0.0
0-14	10	0.2	6	0.1	8	0.1	1	0.0
15-24	220	5.4	35	0.9	18	0.4	3	0.1
25-44	462	4.9	95	1.0	17	0.2	6	0.1
45-64	227	4.3	33	0.6	19	0.4	1	0.0
65+	134	4.3	13	0.4	4	0.1	2	0.1
2002	633	2.0	137	0.4	31	0.1	11	0.0
0-14	4	0.1	7	0.1	3	0.1	0	0.0
15-24	87	2.1	38	0.9	3	0.1	4	0.1
25-44	173	1.8	59	0.6	15	0.2	3	0.0
45-64	247	3.2	27	0.4	7	0.1	2	0.0
65+	122	3.1	6	0.2	3	0.1	2	0.1

Data source: Canadian Mortality Database

Note: Legal intervention involving firearm discharge accounted for 15 deaths in 1979, 9 deaths in 1990, and 4 deaths in 2002.

Table C**Average annual number and rate of firearms-related deaths, by manner/intent and province/territory, 2000-2002**

	Total		Homicide		Suicide		Unintentional		Undetermined	
	Number	Deaths per 100,000 population	Number	Deaths per 100,000 population	Number	Deaths per 100,000 population	Number	Deaths per 100,000 population	Number	Deaths per 100,000 population
Canada	844.7[†]	2.7	147.0[†]	0.5	656.3[†]	2.1	26.3[†]	0.1	10.0[†]	0.0
Newfoundland and Labrador	12.0	2.2	1.3	0.2	8.7	1.6	1.7	0.3	0.0	0.0
Prince Edward Island	4.3	3.1	0.0	0.0	4.3	3.1	0.0	0.0	0.0	0.0
Nova Scotia	30.0	3.2	3.3	0.4	26.0	2.8	0.3	0.0	0.0	0.0
New Brunswick	35.3	4.7	3.3	0.4	31.0	4.1	0.7	0.1	0.3	0.0
Québec	253.7	3.4	44.3	0.6	198.0	2.7	7.7	0.1	3.0	0.0
Ontario	198.7	1.7	50.0	0.4	139.0	1.2	2.3	0.0	5.3	0.0
Manitoba	30.7	2.7	2.3	0.2	23.3	2.0	4.3	0.4	0.3	0.0
Saskatchewan	39.0	3.8	3.7	0.4	33.0	3.2	1.7	0.2	0.3	0.0
Alberta	119.7	3.9	17.3	0.6	99.3	3.2	1.7	0.1	0.3	0.0
British Columbia	108.3	2.6	21.0	0.5	81.3	2.0	5.3	0.1	0.3	0.0
Yukon	3.0	9.9	0.0	0.0	3.0	9.9	0.0	0.0	0.0	0.0
Northwest Territories	4.7	11.3	0.3	0.8	3.7	8.9	0.7	1.6	0.0	0.0
Nunavut	5.3	17.8	0.0	0.0	5.0	17.8	0.0	0.0	0.0	0.0

Data source: Canadian Mortality Database

† Because of rounding, detail may not add to total.