



## Injury by Firearms Australia 1994

J Harrison, J Moller, S Bordeaux  
 June 1996

- [Key Facts](#)
- [Key Indicators of Firearm related death](#)
  - [Age and sex distribution](#)
  - [Trends in death rates](#)
  - [State and Territory differences](#)
  - [Urban / Rural differences](#)
  - [International differences](#)
  - [Hospitalisation](#)
  - [Data issues](#)

### Key Facts

- 522 deaths caused by firearms were registered in Australia in 1994.
- In addition to deaths, about 500 hospital admissions each year are due to non fatal firearm related injuries.
- Firearm deaths comprise 7.3% of all injury deaths.
- Most firearm deaths are suicides; most admitted cases are due to accidents.
- Firearm death rates have declined in recent years.
- Firearm death rates are generally higher in rural and remote areas than in urban areas.
- Australia has a higher firearm related homicide rate than England & Wales and Switzerland, but lower than Canada and much lower than the United States.

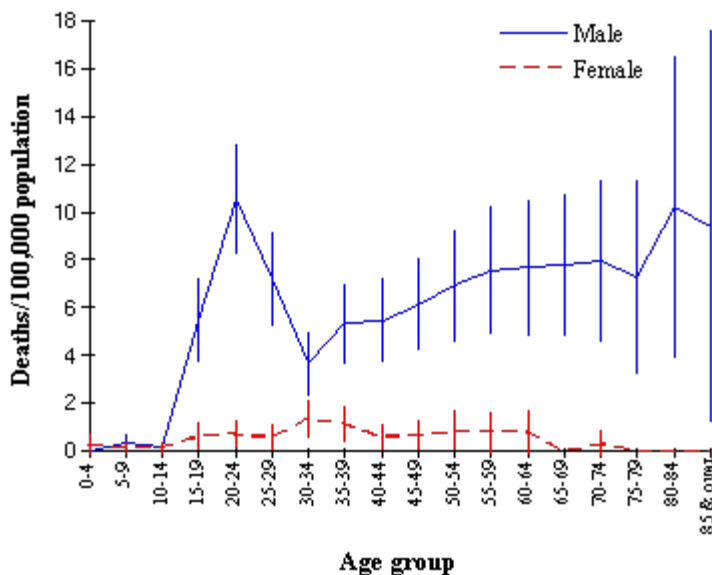
### Key Indicators of Firearm related death

	Males	Females	Persons
Cases	468	54	522
Percent of all injury deaths	9.2%	2.6%	7.3%
Crude rate/100,000 pop	5.3	0.6	2.9
Age adjusted rate/100,000 pop	5.3	0.6	2.9
Change in age adj. rate since 1993	-4%	33%	0%
Average years lost before age 75 yrs	33	39	34

### Age and sex distribution

- More than 90 percent of people dying

### Age-specific rates of fatal injury by firearms, Australia 1994, by sex



(Note vertical lines show 95% confidence intervals)

- due to firearm injuries were males.
- For males, rates were highest for young adults and in old age.
- For females, there was less variation of rates with age. Rates were low in old age.

### Age-adjusted rates of fatal injury by firearms, Australia 1994, by intent and sex



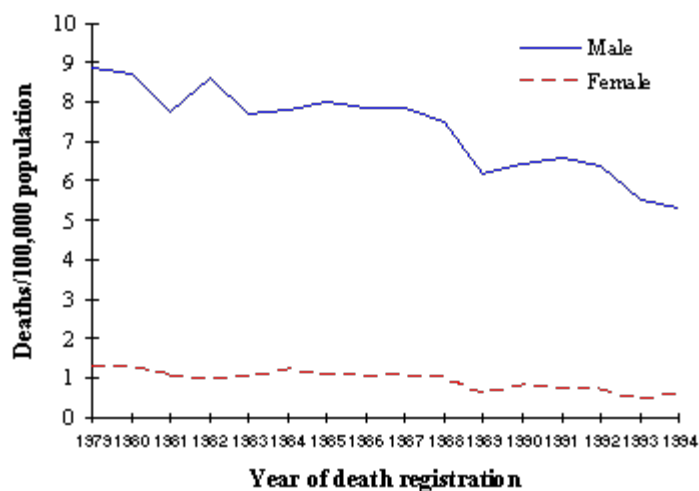
- Suicide accounted for 85% of male firearm deaths, homicide for 10%, and 3% were registered as accidental. Intent was not stated for the remainder.
- For females, homicide accounted for 52% of firearm deaths, suicide for 36% and 10% were registered as accidental. Intent was not stated for 2%.

The routine deaths data set holds no information about the assailant, in the cases of firearm homicide. Other data (Australian Institute of Criminology) show that most homicides are perpetrated by males, especially males aged 15 to 29 years.

#### Trends in death rates

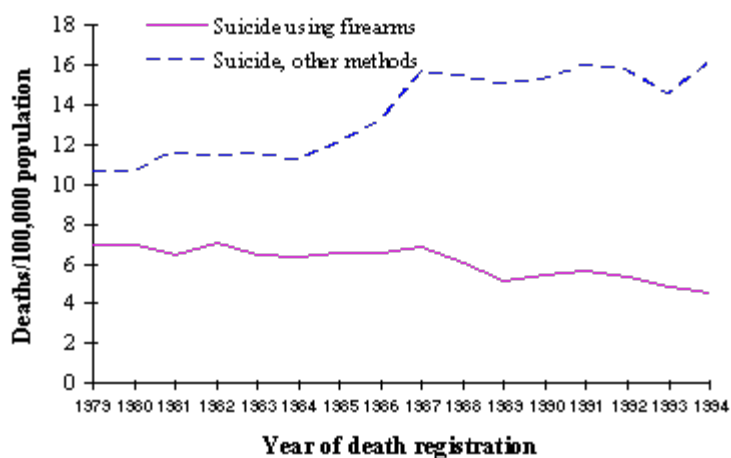
- Firearm death rates have declined in recent years, especially for males.

### Age-adjusted rates of fatal injury by firearms, Australia 1979 to 1994, by sex



- Contributing most to the decline were a drop in the rate of firearm suicide, and in the rate of firearm homicide.

### Suicide using firearms and other methods: males, Australia 1979 to 1994

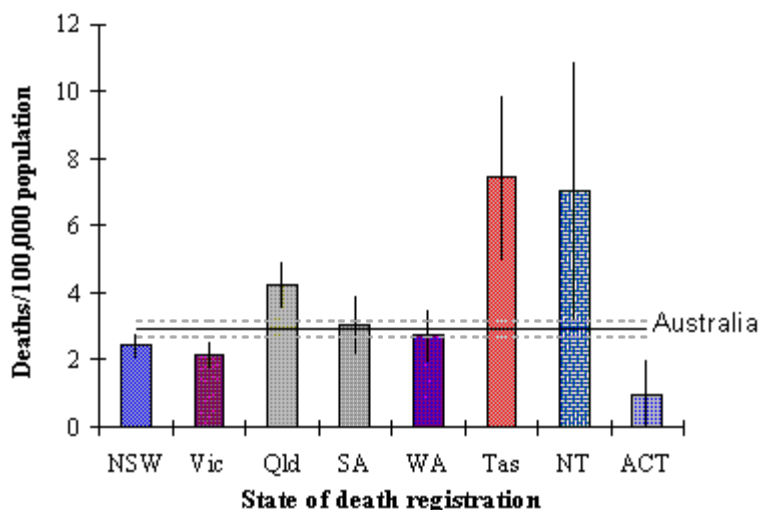


- The male rate of suicide using other methods has risen while the firearm related suicide rate has fallen.
- For female suicide and for male and female homicide, death rates due to firearms have dropped in relation to rates due to other methods.

### State and Territory differences

- The rate of registered deaths due to firearms was significantly higher than the national average rate in Queensland, Tasmania and the Northern Territory.
- Rates recorded for Victoria and the ACT were significantly lower than the national rate.
- A high firearm suicide rate for older males contributed to the high rate in Tasmania.
- One-third of the firearm deaths registered in the Northern Territory were recorded as homicides, higher than the national average (15%).

### Age-adjusted rates of fatal injury by firearms, Australia 1994, by State



(Note vertical lines show 95% confidence intervals )

#### Urban / Rural differences

Total Firearm death rate, males, by type of region: Annual Average 1990-1992		
Type of region	Rate per 100,000	Relative risk compared with capital city
Capital City	4.1	1.0
Other major Urban	7.2	1.8
Rural Major	9.0	2.2
Rural Other	13.3	3.2
Remote major	10.3	2.5
Remote other	21.0	5.1

Source: Australian Injury Prevention Bulletin 8 1994

- Firearm death rates are generally higher in rural and remote regions, with the highest rate in low population density "rural other" and "remote other" regions.
- The overall suicide rate was high in "rural other" and "remote other" regions particularly among 15-24 and 45-54 year old males. While numbers of firearm deaths in these regions are too small to definitively assess age specific patterns, it appears that firearms make a significant contribution to deaths in these high risk categories.

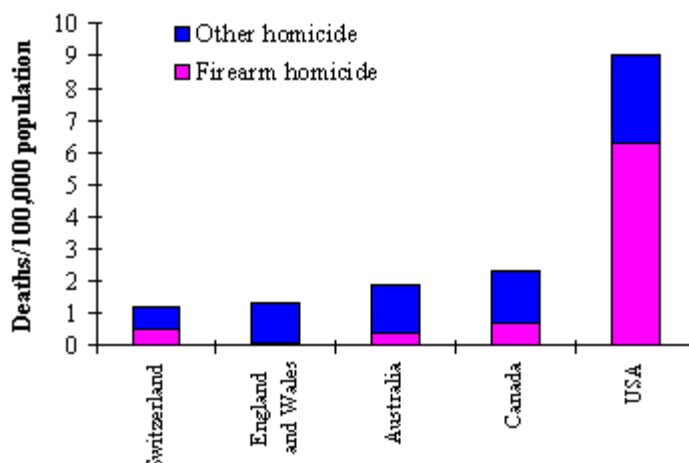
#### International differences

International firearm and other homicide rates per 100,000 persons, 1994					
	Switzerland	England & Wales	Australia	Canada	USA
Firearm	0.5	0.1	0.4	0.7	6.3
Other	0.7	1.2	1.5	1.6	2.7
Total	1.2	1.3	1.9	2.3	9.0

Source Australian Institute of Criminology May 1996, and Killias 1993 (1994 data except Switzerland 1983-1986.)

- The Australian firearm homicide rate

## International comparison of total and firearm related homicide



is higher than England and Wales, about equal to Switzerland, but much lower than Canada and the United States.

- The proportion of firearm homicide is minimal in England and Wales but represents 70% of United States homicides.
- In Australia the proportion of firearm homicide is 21%, in Canada 26% and Switzerland 40%

Percentage of households owning a firearm				
Switzerland	England & Wales	Australia	Canada	USA
27.2	4.7	19.6	29.1	48.0

Source: Killias 1993

- Rates of homicide and suicide, and proportions due to firearms, vary widely between countries.
- Availability of firearms also varies between countries based on estimates of proportion of households with a firearm.
- Association has been found between firearm ownership, and both suicide and homicide. This has been found when comparing levels for whole countries (eg Killias 1993), though such studies have important limitations. It has also been found when comparing individuals in households which did or did not have a firearm (Brent et al 1992; Kellermann et al 1992, 1993).

### Hospitalisation

Firearm related hospital separations Australia (excl NT) 1992/93			
	Total Hospital Separations	Died in hospital	Total Hospital Bed days
1992/93			
Unintentional	368	7	2539
Self harm	104	18	1020
Violence	95	7	627
Total	567	32	4186

- Approximately two thirds of injuries related to firearms resulting in hospitalisation are unintentional. This is in sharp contrast with deaths data. Events recorded as self harm account for about 17% to 18% of cases and violence for about 15% of cases.
- Less than 10% of hospitalised cases die in hospital, with the exception of those as a result of self harm. This suggests that the majority of these cases are in addition to those recorded in death statistics.
- 30% of injuries involved the head of the victim and treatment of all hospitalised cases required 4186 bed days

Hospitalised cases; body regions injured		
	n	%
Head, face	170	30.0
Lower limb	145	25.6

Upper limb	117	20.6
Neck, trunk	47	8.3
Other mainly superficial	88	15.5
Total	567	100.0

### Data issues

### Sources

- Deaths data are supplied by coroners and State registrars to the Australian Bureau of Statistics. Data in this document are extracted from unit record files. Tables are based on State and year of death registration.
- Hospital Separations data are supplied by State and Territory Health Authorities to the Australian Institute of Health and Welfare. Data in this paper are extracted from unit record files.
- Additional information was drawn from the following publications.

Australian Injury Prevention Bulletin 8: The Spatial distribution of injury deaths in Australia, NISU, Adelaide, 1994.

Killias M. International correlations between gun ownership and rates of homicide and suicide. *Can Med Assoc J* 1993;148:1721-1725

Australian Institute of Criminology Data on Firearms and Violent Death, Canberra, May 1996

### Definitions

- Firearm related injuries are defined below:

Description	International Classification of diseases External causes codes
Unintentional	E922
Self Harm	E955.0-.4 ,.9
Violence	E965.0-.4
Intent Unknown	E985.0-.4

Note: Incidents classed as legal intervention E970 have been excluded (n=7, Australia 1994).

### Age-adjustment

- Most all-ages rates have been adjusted to overcome the effect of differences in the proportion of people of different ages (and different injury risks) in the populations that are compared. Direct standardisation was employed, taking the Australian population 1991 as the standard.

### Confidence intervals

- Confidence intervals (95%: based on a Poisson assumption about the number of cases in a time period) have been placed around rates as a guide to the size of the this variation. Chance variation alone would be expected to lead to a rate outside the interval only once out of 20 occasions.

### Additional References

Brent DA, Perper JA, Allman CJ, et al. The presence and accessibility of firearms in the home of adolescent suicides: a case-control study. *JAMA*. 1992;266:2989-2995.

Kellermann AL, Rivara FP, Somes G, et al. Suicide in the home in relation to gun ownership. *N Engl J Med*. 1992;327:467-472.

Kellermann AL, Rivara FP, Rushforth NB, et al. Gun ownership as a risk factor for homicide in the home. *N Engl J Med*. 1993;329:1084-1091.