

The US Pandemic: Firearm Injury and Death

#ThisIsOurLane

Thomas G. Cooney, MD MACP
Professor of Medicine
Oregon Health and Science University

Disclosures

- I worked for Remington Arms when I was in high school and college
- My cousin committed suicide with a firearm
- My friend, and former fellow IM resident, was shot to death (handgun) in his office by a patient
- One of my former residents survived the Columbine shooting by hiding in a cabinet
- I own no firearms

Objectives

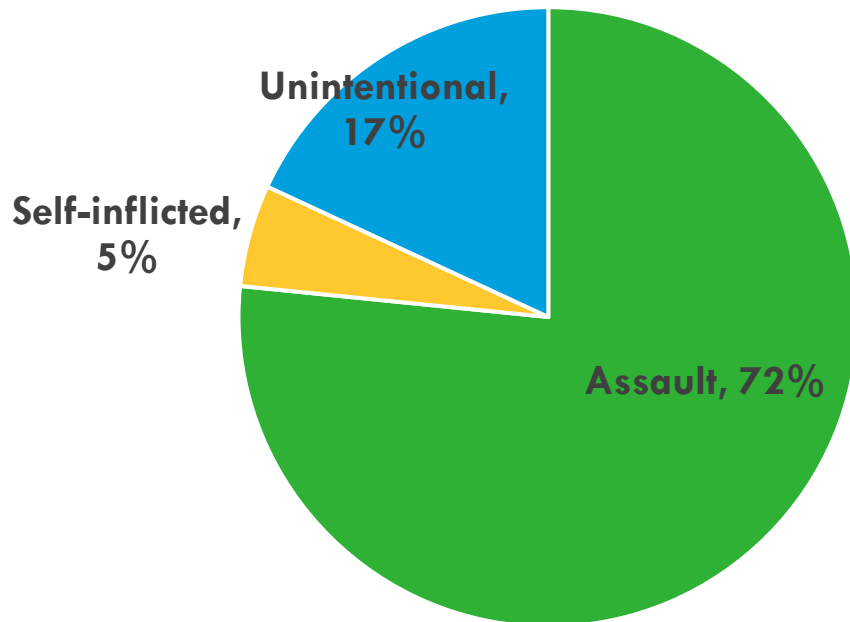
- Review the epidemiology of firearm injury and death in the US
- Review evidence for strategies to reduce firearm injuries and deaths
- Review ACP's recommendations
- Discuss federal versus state approaches
- Call to action

Firearm death and injury: adults

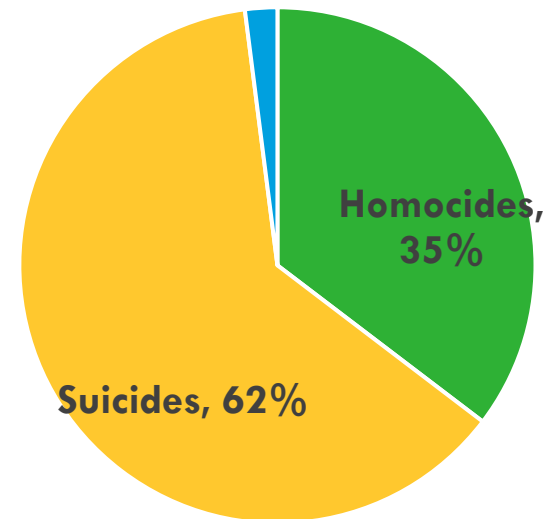
- From 2010 to 2012, ~32,000 people (n = 32,529) died annually from a firearm-related injury
 - 62% suicides (n = 20,012)
 - 35% homicides (n = 11,256)
 - 2% unintentional (n = 582)
- ~ 67,000 had non-fatal firearm related injuries
 - 72% assault (N= 48,534)
 - 5% self-inflicted (N= 3606)
 - 17% unintentional (N= 11,529)

Firearm death and injury: adults

Cause of Injury
N= 67,000



Cause of death
N=32,529
Unintentional, 2%

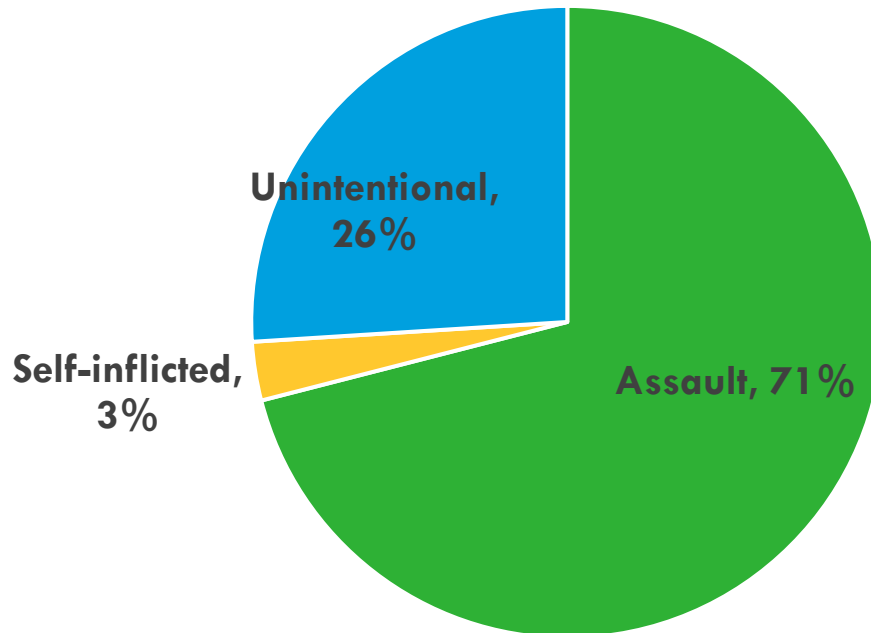


Firearm death and injury: children

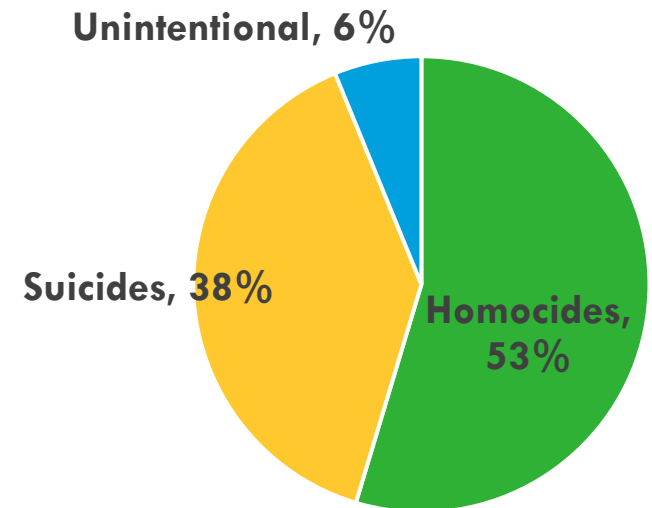
- From 2012 to 2014, ~1300 children ($N = 1297$) died annually from a firearm-related injury
 - 53% were homicides ($n = 693$)
 - 38% were suicides ($n = 493$)
 - 6% were unintentional
- ~6000 children ($N = 5790$) had non-fatal firearm related injuries
 - 71% were assaults ($n = 4102$)
 - 3% were self-inflicted ($n = 170$)
 - 26% were unintentional

Firearm death and injury: children

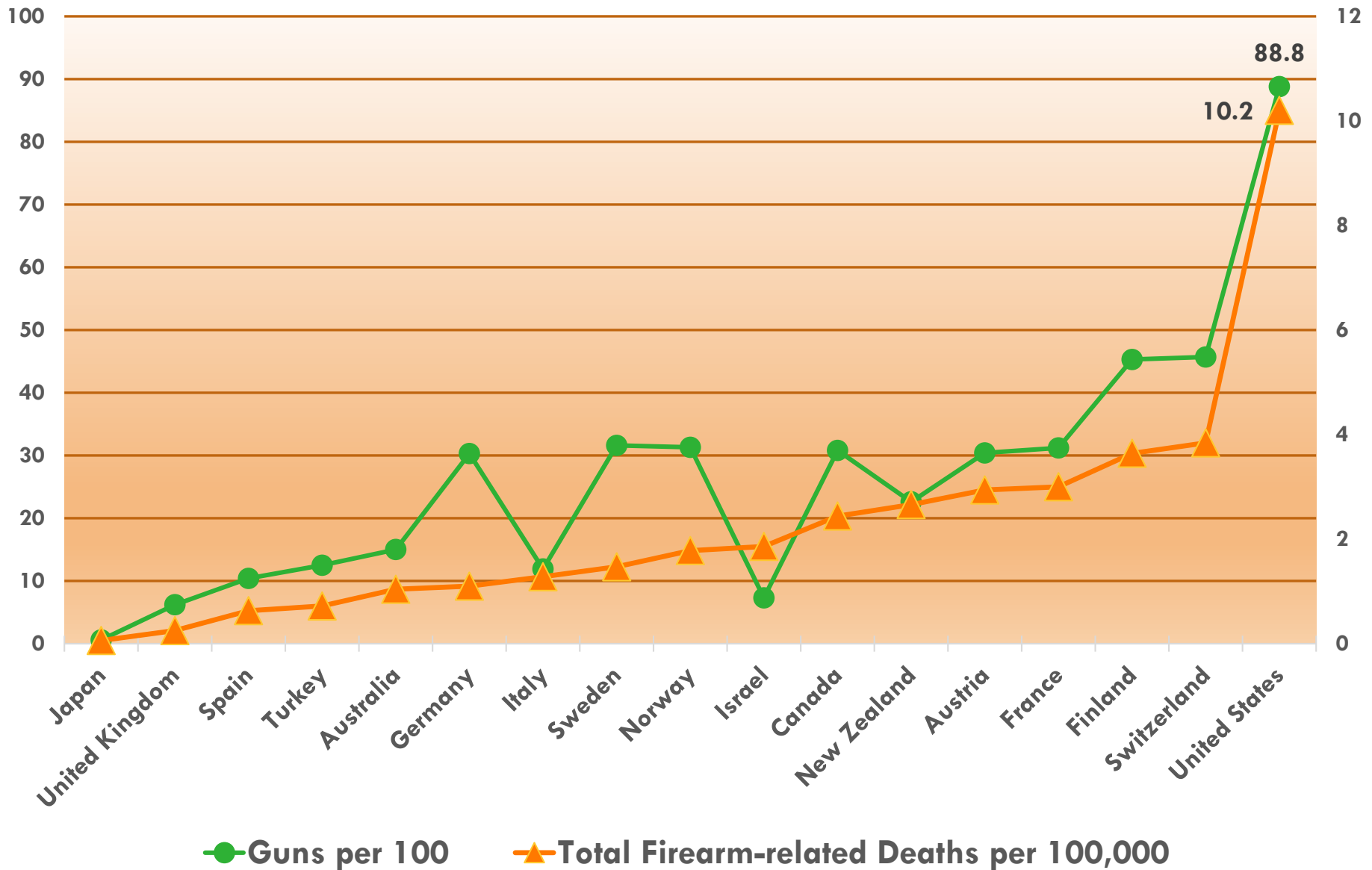
Cause of Injury
N= 5790



Cause of death
N=1297



Gun ownership versus gun deaths



Data: Am J Med. 2013; 126:873-6

Lethality of suicide methods

Table 1 Distribution of suicide and hospitalised para-suicide episodes - Illinois 1990–1997

Suicide method (n)	Complete sample	Male	Female	Minor Below 18	Adult 18 and over
	% of total*	% of total*	% of total*	% of total*	% of total*
	% fatal†	% fatal†	% fatal†	% fatal†	% fatal†
Poisons‡ (35476)	74.5	58.8	87.8	84.7	73.0
	6.5	11.1	3.9	0.9	7.4
Firearms (5043)	10.6	20.2	2.3	3.9	11.5
	96.5	96.5	96.0	95.3	96.5
Suffocation§ (2574)	5.4	9.6	1.8	2.7	5.8
	90.4	90.7	89.0	65.2	92.0
Cuts¶ (2409)	5.1	6.1	4.1	4.8	5.1
	6.7	9.9	2.6	0.7	7.5
Crash/jump** (676)	1.4	2.2	0.8	0.5	1.6
	74.0	76.1	68.8	51.7	75.0
Exposure†† (183)	0.4	0.5	0.3	0.3	0.4
	56.3	64.0	43.5	6.7	60.7
Other‡‡ (1278)	2.7	2.5	2.9	3.1	2.6
	1.8	2.4	1.4	0.5	2.0
Total episodes	47639	21965	25674	5943	41696
Total fatal episodes	10287	8222	2065	394	9893

Lethality of suicide methods

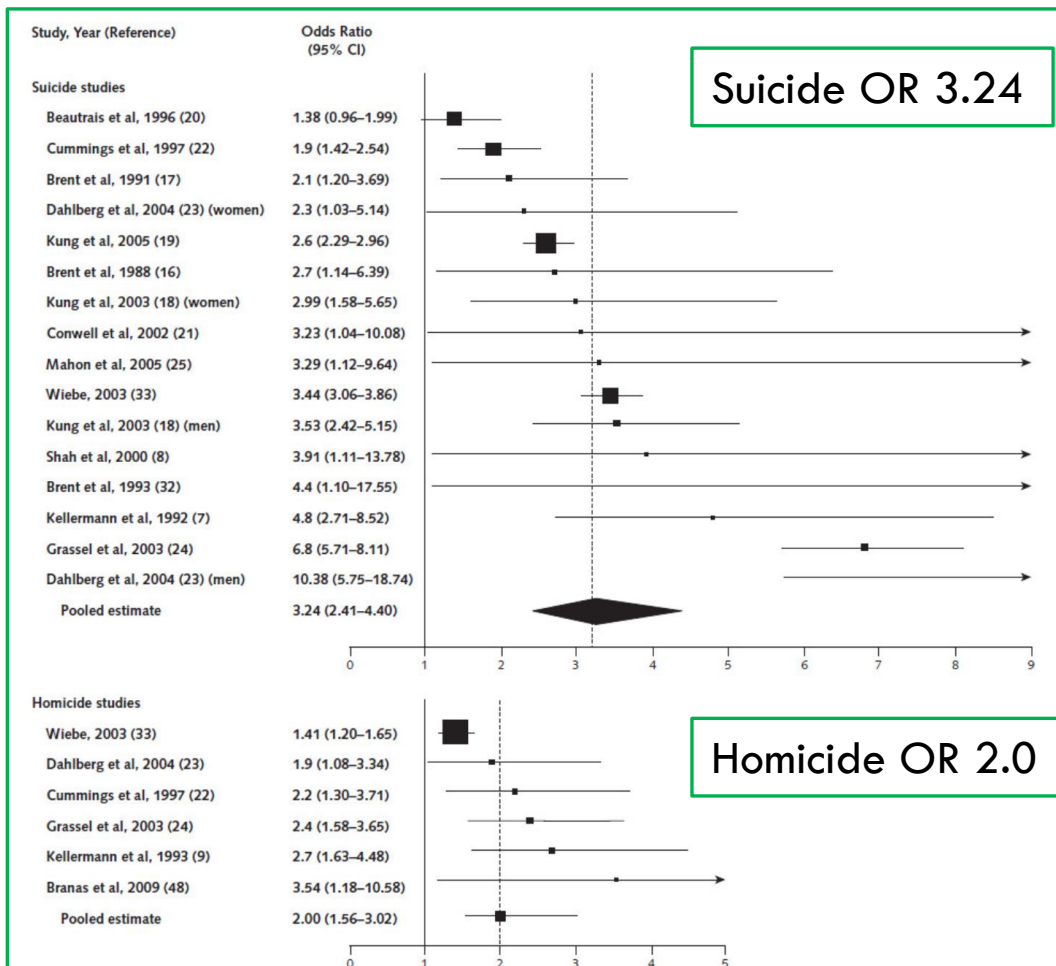
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Suffocation§ (2574)	5.4	9.6	1.8
	90.4	90.7	89.0

Suicide and firearms: guns in home

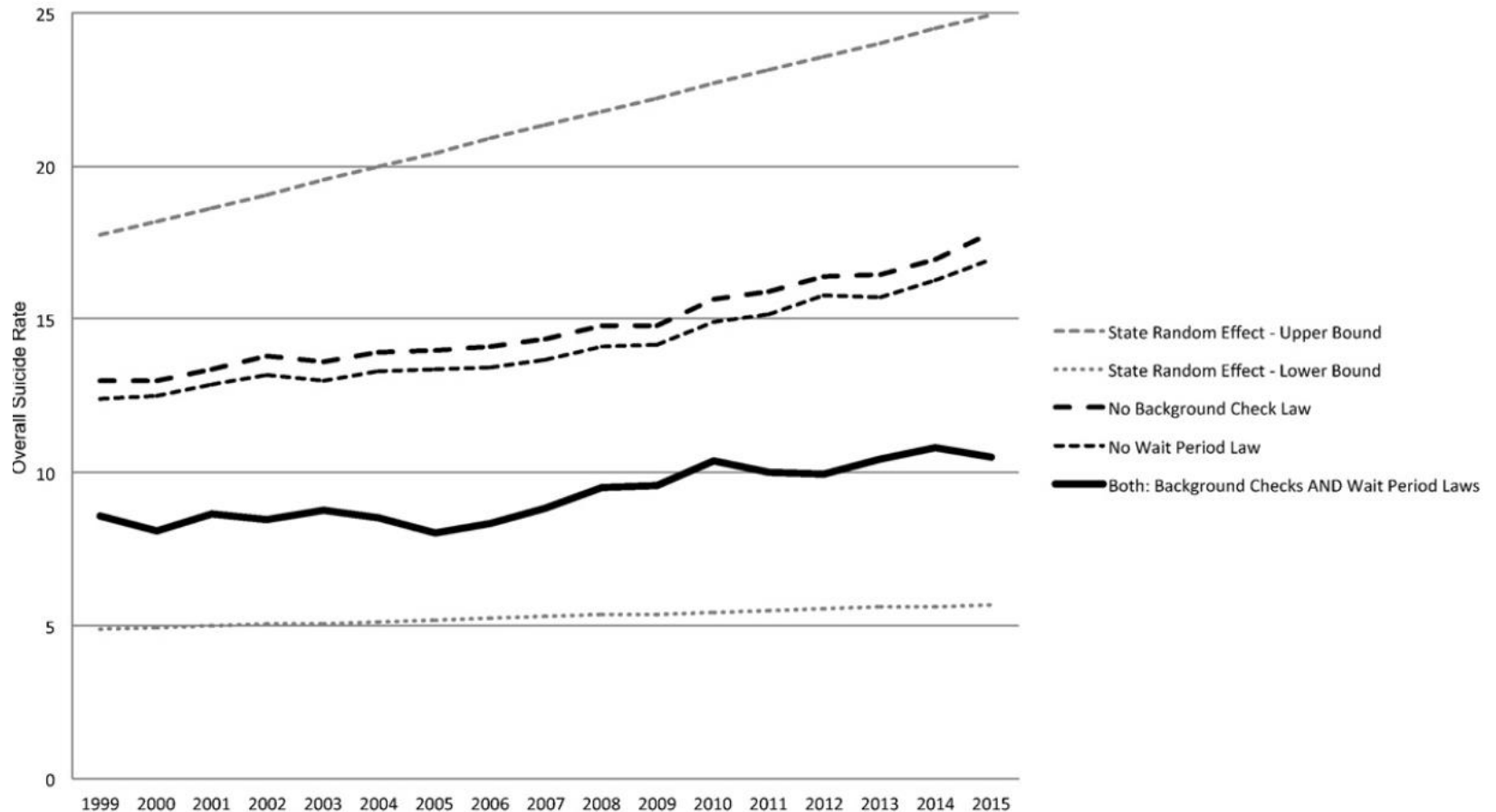
Variable	Adjusted odds ratio	95% Confidence interval
Type of guns in the home		
One or more handguns	5.8	3.1–4.7
Long guns only	3.0	1.4–6.5
No guns in the home	1.0	—
Loaded guns		
Any gun kept loaded	9.2	4.1–20.1
All guns kept unloaded	3.3	1.7–6.1
No guns in the home	1.0	—
Locked guns		
Any guns kept unlocked	5.6	3.1–10.4
All guns kept locked up	2.4	1.0–5.7
No guns in the home	1.0	—

Homicide and suicide: firearm accessibility

The Accessibility of Firearms and Risk for Suicide and Homicide Victimization Among Household Members
Annals Internal Medicine
 2014



Suicide by firearm: association with state laws



US gun ownership and age-adjusted firearm homicide rate

Examining the relationship between the prevalence of guns and homicide rates in the USA using a new and improved state-level gun ownership proxy

Michael Siegel,¹ Craig S Ross,² Charles King^{3,4} Inj Prev 2014;20:424–426.

“higher levels of household gun ownership at the state level are significantly associated with increased state-specific firearm and total homicide rates, but not non-firearm homicide rates.”

Firearms: domestic versus non-domestic homicides

American Journal of
Preventive Medicine

2019

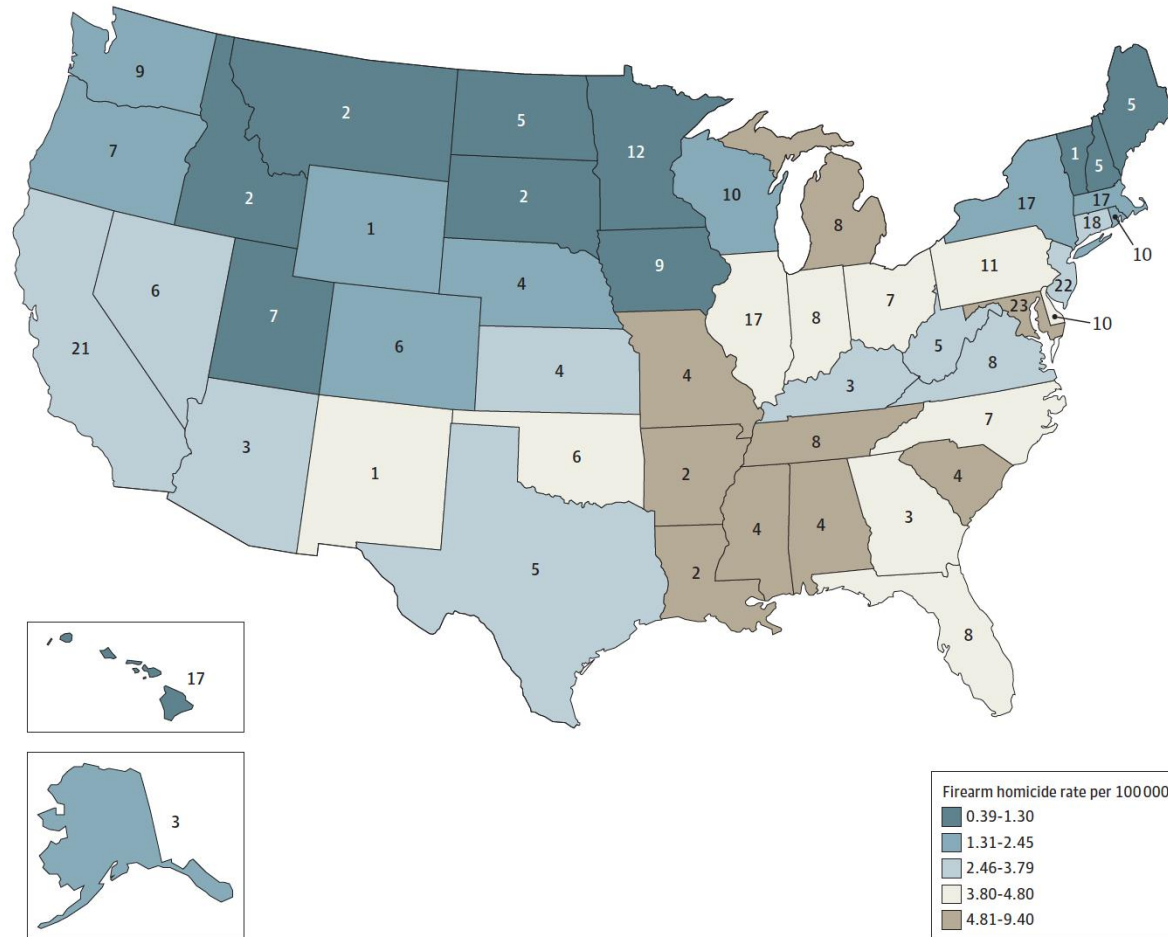
RESEARCH ARTICLE

Firearm Ownership and Domestic Versus Nondomestic Homicide in the U.S.

Aaron J. Kivisto, PhD,¹ Lauren A. Magee, PhD,² Peter L. Phalen, PsyD,³ Bradley R. Ray, PhD⁴

“States in the top quartile of firearm ownership had a 64.6% ($p < 0.001$) higher incidence rate of domestic firearm homicide than states in the lowest quartile; however, states in the top quartile did not differ significantly from states in the lowest quartile of firearm ownership in observed incidence rates of nondomestic firearm homicide.”

US Firearm Laws and State Homicide Rates



US Firearm Laws and State Homicide Rates

“The strength of firearm legislation in general, and laws related to strengthening background checks and permit-to-purchase in particular, is associated with decreased firearm homicide rates.”

Mass shootings

State gun laws, gun ownership, and mass shootings in the US: cross sectional time series

Paul M Reeping,¹ Magdalena Cerdá,² Bindu Kalesan,³ Douglas J Wiebe,⁴ Sandro Galea,⁵ Charles C Branas¹

- States with more permissive gun laws and greater gun ownership have higher rates of mass shootings
- There is a growing divergence in recent years as rates of mass shootings in restrictive states have decreased and those in permissive states have increased

Mass shootings and ERPOs

Annals of Internal Medicine

MEDICINE AND PUBLIC ISSUES

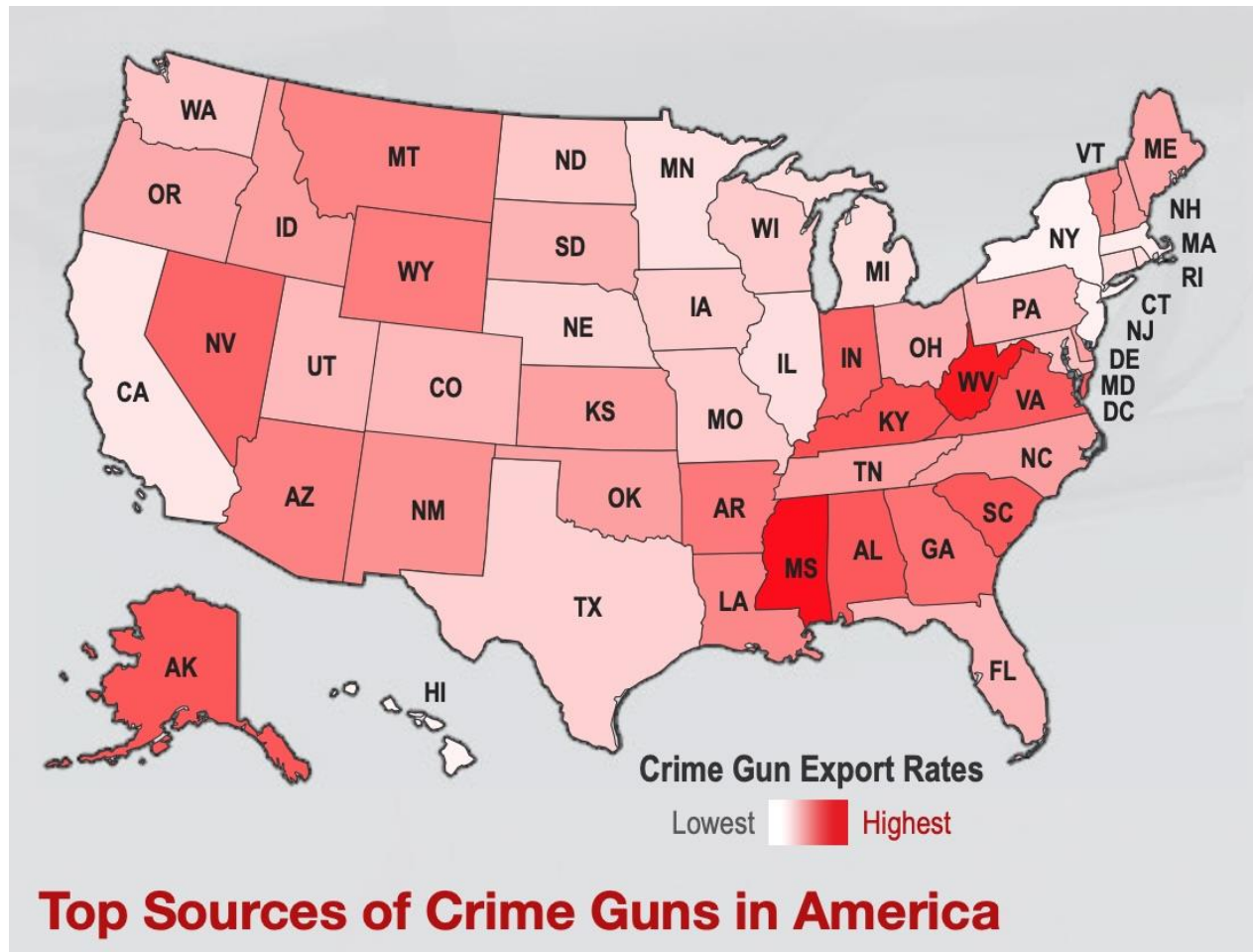
Extreme Risk Protection Orders Intended to Prevent Mass Shootings

A Case Series

Garen J. Wintemute, MD, MPH; Veronica A. Pear, MPH; Julia P. Schleimer, MPH; Rocco Pallin, MPH; Sydney Sohl, BS; Nicole Kravitz-Wirtz, PhD; and Elizabeth A. Tomsich, PhD

“21 cases in which ERPOs were used in efforts to prevent mass shootings. Most subjects were male and non-Hispanic white; the mean age was 35 years. Most subjects made explicit threats and owned firearms. Four cases arose primarily in relation to medical or mental health conditions, and such conditions were noted in 4 others. Fifty-two firearms were recovered. As of early August 2019, none of the threatened shootings had occurred, and no other homicides or suicides by persons subject to the orders were identified”

State gun laws and source of crime guns



Example: US firearms trafficking

Guns and lies US gun control

California arms traffickers used Snapchat to market illegal weapons

Recent investigations show that in the Bay Area, social media is playing a significant role in firearms sales



Firearms trafficking

“...purchased potentially hundreds of semi-automatic pistols through private-party transactions in Nevada. Nevada doesn’t require background checks or record-keeping for private-party gun sales, in effect hiding these transfers from authorities and allowing purchasers to acquire large numbers of guns in short periods of time without setting off alarms.”

ACP: Firearms Policy

Annals of Internal Medicine

POSITION PAPER

Reducing Firearm Injuries and Deaths in the United States: A Position Paper From the American College of Physicians

Renee Butkus, BA; Robert Doherty, BA; and Sue S. Bornstein, MD*; for the Health and Public Policy Committee of the American College of Physicians

For more than 20 years, the American College of Physicians (ACP) has advocated for the need to address firearm-related injuries and deaths in the United States. Yet, firearm violence continues to be a public health crisis that requires the nation's immediate attention. The policy recommendations in this paper build on, strengthen, and expand current ACP policies approved by the Board of Regents in April 2014, based on analysis of ap-

proaches that the evidence suggests will be effective in reducing deaths and injuries from firearm-related violence.

Ann Intern Med. doi:10.7326/M18-1530

For author affiliations, see end of text.

This article was published at [Annals.org](https://annals.org) on 30 October 2018.

[Annals.org](https://annals.org)

NRA and #ThisIsOurLane



#This

Stephanie Bonne



Joseph Sakran @JosephSakran · Nov 7, 2018

As a Trauma Surgeon and survivor of #GunViolence I cannot believe the audacity of the @NRA to make such a divisive statement.

We take care of these patients everyday. Where are you when I'm having to tell all those families their loved one has died.
[@DocsDemand](#) [#Docs4GunSense](#) [twitter.com/NRA/status/106...](#)

NRA @NRA

Someone should tell self-important anti-gun doctors to stay in their lane. Half of the articles in Annals of Internal Medicine are pushing for gun control. Most upsetting, however, the medical community seems to have consulted NO ONE but themselves.
[nraila.org/articles/20181...](#)



Joseph Sakran

@JosephSakran

Not only are we not going to “stay in our lane”, but we are going to do everything in our power to ensure that Americans in communities all across this nation our protected from these senseless tragedies.

3,302 4:02 PM - Nov 7, 2018 · Baltimore, MD



hair I sit in
e you tell me
sISMyLane

SMyLane



Impact of NRA Tweet

From the American College of Physicians

Overview of attention for article published in Annals of Internal Medicine, October 2018



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Title Reducing Firearm Injuries and Deaths in the United States: A Position Paper From the American College of Physicians

Published in Annals of Internal Medicine, October 2018

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Pubmed ID 30383132

Authors Renee Butkus, Robert Doherty, Sue S. Bornstein

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ACP firearm policies: high level view

1. The American College of Physicians recommends a public health approach to firearms-related violence and the prevention of firearm injuries and deaths.

ACP firearm policies: #2

2. The medical profession has a special responsibility to speak out on prevention of firearm-related injuries and deaths, just as physicians have spoken out on other public health issues. Physicians should counsel patients on the risk of having firearms in the home, particularly when children, adolescents, people with dementia, people with mental illnesses, people with substance use disorders, or others who are at increased risk of harming themselves or others are present

ACP firearm policies: #3

3. The American College of Physicians supports appropriate regulation of the purchase of legal firearms to reduce firearms-related injuries and deaths. The College acknowledges that any such regulations must be consistent with the Supreme Court ruling establishing that individual ownership of firearms is a constitutional right under the Second Amendment of the Bill of Rights.

ACP firearm policies: #3

- a. Universal background check and proof of satisfactory completion of an appropriate educational program on firearms safety.
- b. State and federal laws to prohibit convicted domestic violence offenders from purchasing or possessing firearms
- c. Waiting periods
- d. Strong penalties or criminal prosecution for those who sell firearms illegally and those who legally purchase firearms for those who are banned from possessing them (“straw purchases”).

ACP firearm policies: #4

4. The American College of Physicians recommends that guns be subject to consumer product regulations regarding access, safety, and design. In addition, the College supports law enforcement measures, including required use of tracer elements or taggants on ammunition and weapons, and identifying markings, such as serial numbers on weapons, to aid in the identification of weapons used in crimes.

ACP firearm policies: #5

5. Firearm owners should adhere to best practices to reduce the risk of accidental or intentional injuries or deaths from firearms. They should ensure that their firearms cannot be accessed by children, adolescents, people with dementia, people with substance use disorders, and the subset of people with serious mental illnesses that are associated with greater risk of harming themselves and others. ACP supports child access prevention laws that hold firearm owners accountable for the safe storage of firearms. Firearm owners should report the theft or loss of their firearm within 72 hours of becoming aware of its loss.

ACP firearm policies: #6

6. The College cautions against broadly including those with mental illness in a category of dangerous individuals. Instead, the College recommends that every effort be made to reduce the risk of suicide and violence, through prevention and treatment, by the subset of individuals with mental illness who are at risk of harming themselves or others. Diagnosis, access to care, treatment, and appropriate follow-up are essential.

ACP firearm policies: #7

7. The College favors enactment of legislation to ban the manufacture, sale, transfer, and subsequent ownership for civilian use of semiautomatic firearms that are designed to increase their rapid killing capacity (often called “assault weapons”) and large-capacity magazines, and retaining the current ban on automatic weapons for civilian use.

ACP firearm policies: #8

8. The College supports efforts to improve and modify firearms to make them as safe as possible, including the incorporation of built-in safety devices (such as trigger locks and signals that indicate a gun is loaded).

ACP firearm policies: #9

9. More research is needed on firearm violence and on intervention and prevention strategies to reduce injuries caused by firearms. The Centers for Disease Control and Prevention, National Institutes of Health, and National Institute of Justice should receive adequate funding to study the impact of gun violence on the public's health and safety. Access to data should not be restricted.

ACP firearm policies: #10

10. ACP supports the enactment of extreme risk protection order (ERPO) laws which allow family members and law enforcement officers to petition a court to temporarily remove firearms from individuals who are determined to be at imminent risk of harming themselves or others while providing due process protections.

Federal versus state approaches: issues

- NRA's continued stranglehold on federal legislation
- States have been more responsive
- State's are impacted by laws in adjacent states
- Second Amendment related litigation and lack of clarity
- Elections matter

Call to action

SPECIAL ARTICLE | 7 AUGUST 2019

Firearm-Related Injury and Death in the United States: A Call to Action From the Nation's Leading Physician and Public Health Professional Organizations FREE

Robert M. McLean, MD; Patrice Harris, MD; John Cullen, MD; Ronald V. Maier, MD; Kyle E. Yasuda, MD; Bruce J. Schwartz, MD; Georges C. Benjamin, MD

American College of Physicians
American Medical Association
American Academy of Family Physicians
American College of Surgeons
American Academy of Pediatrics
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American Public Health Association