

## Firearms and Suicide

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Is intent all that matters?



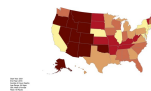
In 2018 there were 48,344 suicides  
~Half (51%) were Firearm suicides (24,432)

Suicide was the

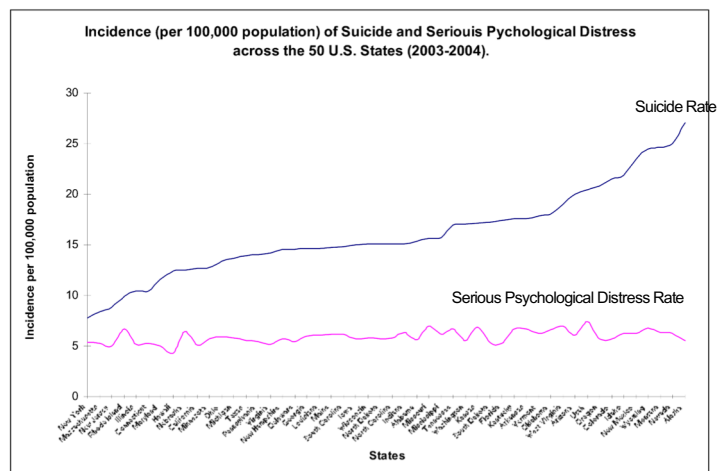
- 10<sup>th</sup> leading cause of death overall
- 2<sup>nd</sup> leading cause of death among persons under 35 years of age
- 2<sup>nd</sup> leading cause of death among persons 1-18

By contrast, in 2018 there were 18,830 Homicides (13,958 FH; 74%);  
39,404 Motor Vehicle fatalities

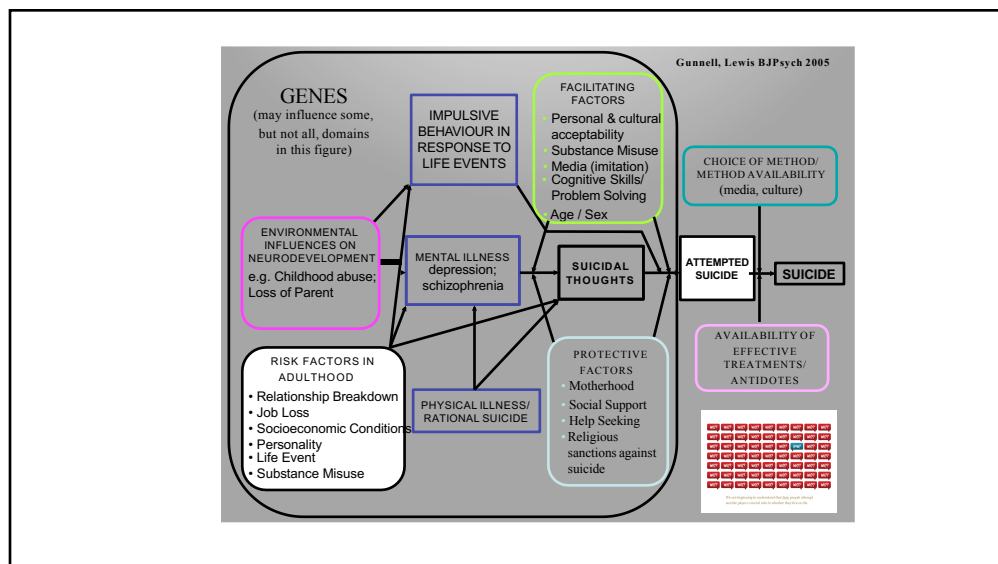
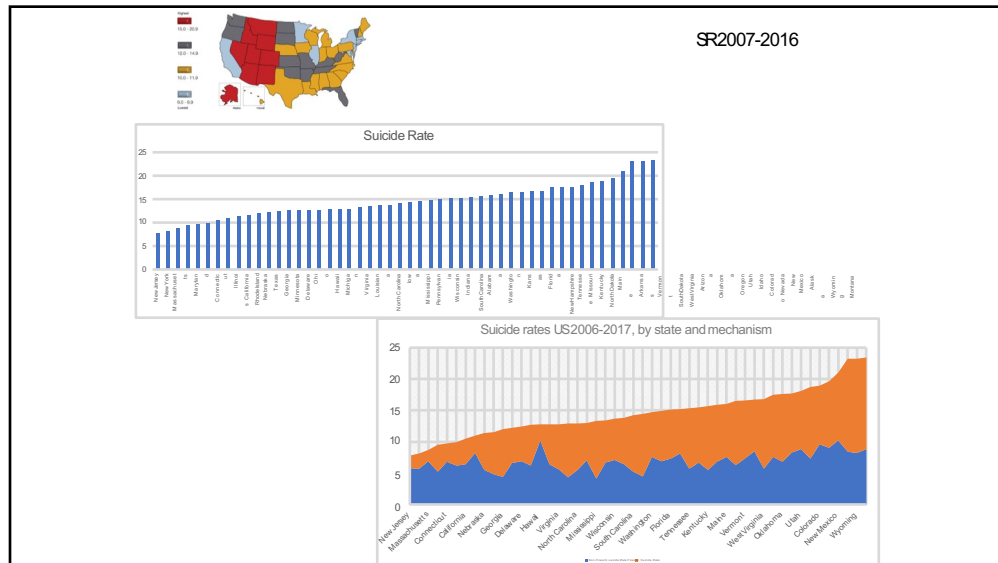
Source: Centers for Disease Control and Prevention, Web-based Injury Statistics Query and Reporting System (WISQARS).  
Available at: [www.cdc.gov/hppo/wisqars](http://www.cdc.gov/hppo/wisqars)



SR2007-2016



Serious Psychological Distress in Past Year, Annual Incidence Based on 2003 and 2004 NSDUH data. See <http://www.oas.samhsa.gov/2k4/State/ch6.htm>.



### Rates of Household Firearm Ownership and Rates of Suicide, Firearm Suicide and Non-Firearm Suicide across 7 North East States, 1996-2000

	Percent of Households with Firearms	Suicides per 100000	Firearm Suicides per 100000	Non-Firearm Suicides per 100000
Vermont	42%	12.3	8.0	4.3
Maine	41%	13.3	7.8	5.5
New Hampshire	30%	11.7	6.2	5.5
Connecticut	17%	8.5	3.3	5.2
Rhode Island	13%	8.3	3.0	5.3
Massachusetts	12%	7.5	2.1	5.4
New Jersey	12%	7.1	2.3	4.8
<b>All 7 States</b>	<b>17%</b>	<b>8.2</b>	<b>3.1</b>	<b>5.1</b>

Miller M, Azrael D, Hemenway D. Firearms and Suicide in the Northeast. Journal of Trauma. 2004; 57:626-632

### Firearms and suicide: is risk independent of underlying suicidal behavior?

Table 3. Suicides and Suicide Attempts in US States with the Highest and Lowest Gun Ownership Levels, 2008-2009

Population Group by State Gun Ownership Level	Person-Years	No. of Firearm Suicides	No. of Nonfirearm Suicides	Total No. of Suicides	Population With Suicidal Acts, %	95% CI
<b>High-gun ownership states<sup>a,b</sup></b>						
All adults	62,383,037	7,275	4,153	11,428	0.41	0.18, 0.63
Adult men	30,273,657	6,263	2,905	9,168	0.38	0.16, 0.60
Adult women	32,109,380	1,012	1,248	2,260	0.44	0.17, 0.71
Adults aged 18-29 years	13,829,694	1,303	960	2,263	1.04	0.40, 1.67
Adults aged ≥30 years	48,553,343	5,972	3,193	9,165	0.24	0.09, 0.38
<b>Low-gun ownership states<sup>c,d</sup></b>						
All adults	62,447,876	1,697	4,341	6,038	0.49	0.00, 0.98
Adult men	29,810,942	1,572	3,207	4,779	0.38	-0.04, 0.79
Adult women	32,636,934	125	1,134	1,259	0.60	-0.01, 1.21
Adults aged 18-29 years	13,335,648	219	778	997	0.97	-0.01, 1.94
Adults aged ≥30 years	49,112,228	1,478	3,563	5,041	0.26	-0.06, 0.58

Abbreviation: CI, confidence interval.

<sup>a</sup> High-gun ownership states are Alabama, Alaska, Arkansas, Idaho, Iowa, Kentucky, Louisiana, Mississippi, Montana, Nebraska, North Dakota, Oklahoma, South Dakota, Tennessee, West Virginia, and Wyoming.

<sup>b</sup> In high-gun ownership states, 51% of adults live in households with firearms.

<sup>c</sup> Low-gun ownership states are Connecticut, Hawaii, Massachusetts, New Jersey, New York, and Rhode Island.

<sup>d</sup> In low-gun ownership states, 15% of adults live in households with firearms.

<sup>e</sup> The percent of the population that engaged in fatal and nonfatal suicidal acts over the past year.

Miller M, Barber C, White R, Azrael D. Firearms and suicide in the United States: is risk independent of underlying suicidal behavior? Am J Epidemiology. 2013

## Rationale for Means Restriction

- Suicide acts are often impulsive and crises often fleeting
- Method used largely depends on availability
- CFRs for commonly used methods vary greatly
  - ü CFR firearms ~90%; CFR pills and cutting <5%
- Fewer than 10% of survivors, even of near-lethal suicide attempts, go on to die by suicide\*

\*why is this important?

## What do we know about these guns?

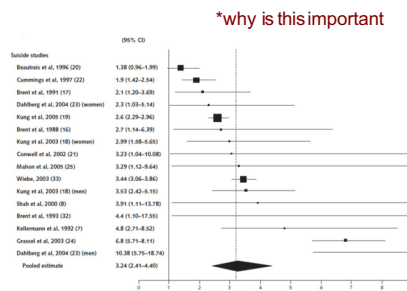
- Most lethal method commonly used in completed suicides
  - CFR ~90% vs. <3% pills/cutting
- Vast majority come from victims home
  - ~75% handguns; 50% long guns among rural youth
  - >85% of guns not purchased within 2 weeks of suicide (e.g., Kellerman 1992 3%)
- ~300,000,000 firearms in civilian hands
  - >1/3 households (with and w/o children)
  - ~5 million children in HH with loaded and unlocked guns
- Gun owners and members of gun owning homes are neither more depressed nor more suicidal than members of non-gun owning homes

More than a dozen US Case-Control Studies:

Gun in home is a risk factor for suicide for gunowner, spouse, and children\*

Factors held constant:

Age  
Gender  
Community  
Living alone  
Education  
Alcohol  
Depression medication  
Illicit drug use  
Psychiatric diagnosis



Anglemeyer et al. Ann Intern Med. 2014;160(2):101-110.  
doi:10.7326/M13-1301

### Storage Practices and YOUTH Firearm Suicide Risk (5-19 year olds)

Firearm Storage Practice	No. (%)		Adjusted Odds Ratio (95% CI)
	Cases (N=106)	Controls (N=480)	
Gun unloaded	66%	91%	0.30 (0.16-0.56)
Gun locked	32%	58%	0.27 (0.17-0.45)
Ammunition locked	24%	48%	0.39 (0.23-0.66)

Grossman et al, JAMA, February 9, 2005.

**Firearm Storage in Gun-Ownng Households with Children:  
Results of a 2015 National Survey**Dolores Azrael · Joanna Cohen · Carmel Salhi ·  
Matthew Miller

5 million children in hh w loaded, unlocked guns

300

D. Azrael et al.

**Table 2** Estimated number of US children exposed to firearms in the home

Storage <sup>a</sup>	% storage in gun-owning households with children <sup>**</sup>	% US households with children <sup>***</sup>	Mean number of children per household storage type	No. of US children < 18 exposed (millions)	
Loaded and unlocked	0.21	0.07	1.7	4.54	[3.7–5.6]
Loaded and locked or unloaded and unlocked	0.50	0.17	1.8	11.44	[10.3–12.6]
Unloaded and locked	0.29	0.10	1.8	6.64	[5.5–7.8]

<sup>a</sup>Hierarchical variable: (1) at least one gun loaded and unlocked; (2) no guns loaded and unlocked, at least one gun loaded and locked OR unloaded and unlocked; (3) all guns unloaded and locked<sup>\*\*</sup>Per the National Firearms Survey, 34% of US households with children have one or more guns<sup>\*\*\*</sup>Per the US Census there were 124.59 million households in the US in 2015. Of these, 30% included children < 18 years old, yielding an estimated 37.4 million households with childrenSalhi et al. 1/3 13-17 y.o. can access a loaded gun w/in 5 min  
1/2w/in an hour (preliminary)**Suicide Risk**

Does a gun in the home increase the risk of suicide?

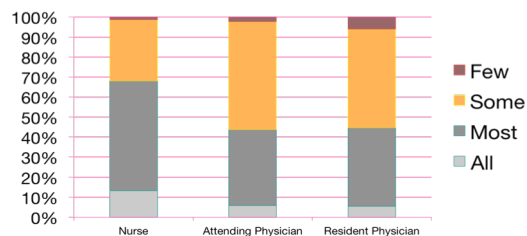
	All	Gun owner	Non-gun owner in gun home	Non-gun owner
<b>Disagree</b>	48%	68%	64%	37%
<b>Neither agree nor disagree</b>	37%	26%	27%	43%
<b>Agree</b>	15%	6%	9%	20%

And only 1/3 health care providers agree

Connor A, Azrael D, Miller M. AIM October 2017

### What health providers think and do about meansrestriction

"Each month in the United States, over 1,000 people die by suicide using firearms. Had a firearm not been accessible to them, how many do you think would have found another way to die by suicide?"

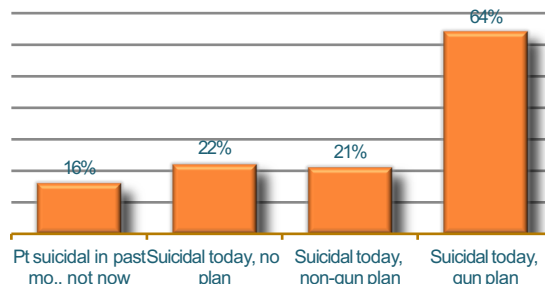


67% of nurses, 43% of attending physicians, and 44% of resident physicians said that "most" or "all" firearm suicide decedents would have died by another method had a firearm been unavailable.

Betz, Miller, Barber et al. Lethal means restriction for suicide prevention: beliefs and behaviors of emergency department providers. Depression and anxiety 2013.

### When Providers Ask about Gun Access

%Reporting they almost always ask



Anonymous survey completed by nurses & physicians at 8 EDs (2010/11). Item prompt says, "I ask if there are firearms at home..." and poses patient scenarios. Response categories are "Almost always," "Often," "Sometimes," "Hardly ever."

Betz M, Miller M, Barber C, et al. Lethal means restriction for suicide prevention: Beliefs and behaviors of emergency department providers. Depression and Anxiety 2013

In Miller et al. SAFETY Study, 2020, 20% asked about guns in usual care period (57% after intervention)



## Means Matter

