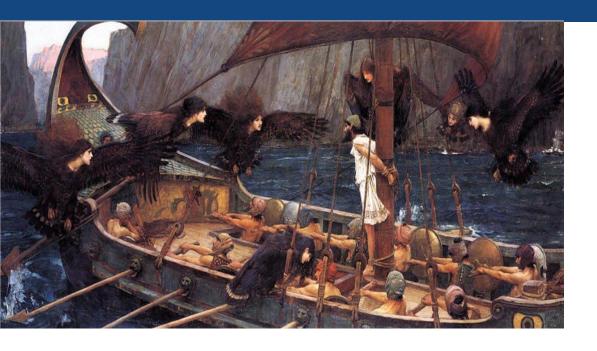
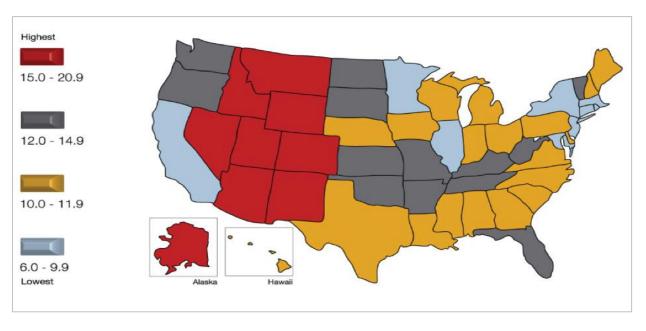
Means Matter



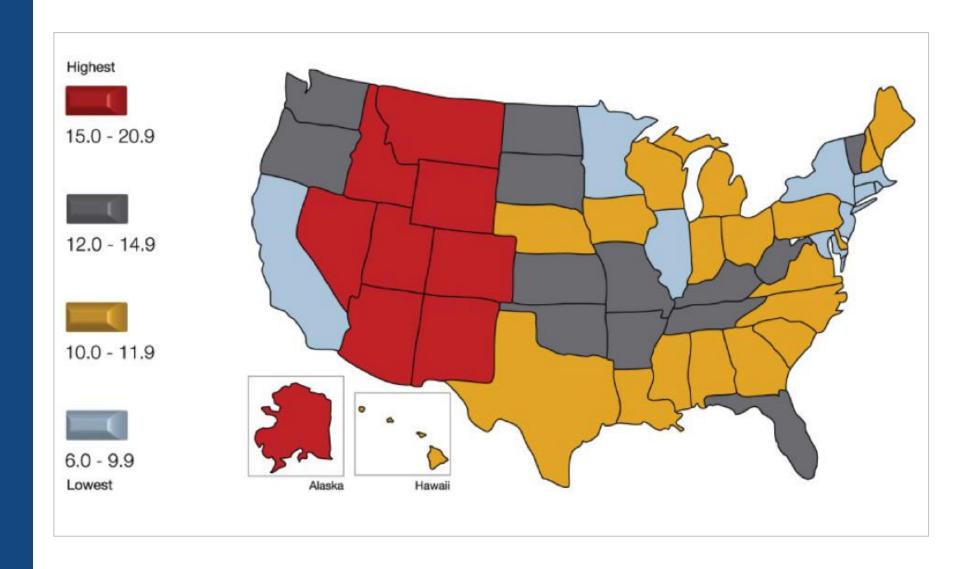
Matthew Miller, MD, MPH, ScD
Professor of Health Sciences and Epidemiology
Northeastern University
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Harvard T.H. Chan School of Public Health
Co-Director, Harvard Injury Control Research Center



Rationale for Means Restriction

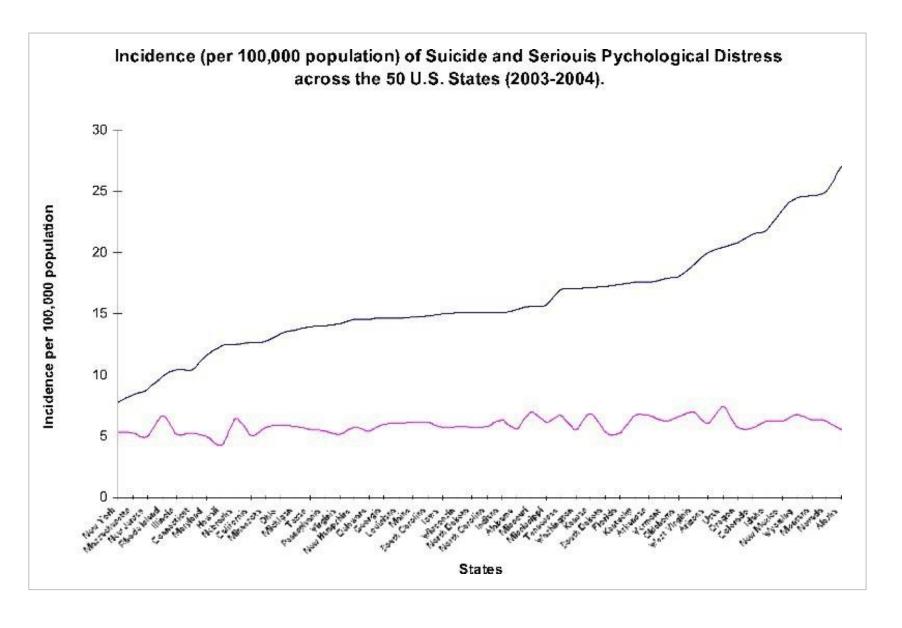
- Suicide acts are often impulsive and crises often fleeting
- ► Method used largely depends on availability
- CFR's for commonly used methods vary greatly
 - CFR firearms ~90%
 - CFR pills and cutting <5%
- Fewer than 10% of survivors—even of near-lethal suicide attempts—go on to die by suicide
 - ► Implication: preventing a suicide today likely saves a life in the long run

Suicide Rates in the United States



Source: Centers for Disease Control and Prevention. Web-based Injury Statistics Query and Reporting System (WISQARS), www.cdc.gov/ncipc/wisqars

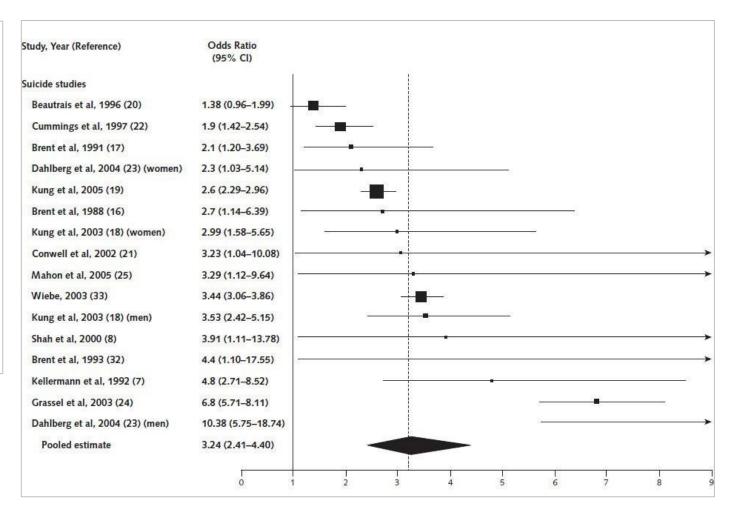
State-Level
Suicide Rates in
Relation to
Rates of Mental
Health
Problems



Source: Suicide data from WISQARS; Serious Psychological Distress in Past Year, Annual Incidence Based on 2003 and 2004 NSDUH data.

More than a Dozen US Case-Control Studies

- Gun in home is a risk factor for suicide for gun owner, spouse, and children
- Factors held constant:
 - Age, gender, community, living alone, education, alcohol, depression medication, illicit drug use, psychiatric diagnosis



Source: Anglemyer et al. (2014). The accessibility of firearms and risk for suicide and homicide victimization among household members: a systematic review and meta-analysis. *Ann Intern Med*;160(2):101–110. http://doi.org/10.7326/M13-1301

Firearms and Adolescent Suicide

A Community Case-Control Study

David A. Brent, MD; Joshua A. Perper, MD, LLB, MS; Grace Moritz, ACSW; Marianne Baugher, MA; Joy Schweers, MEd; Claudia Roth, MSW

• Objective.—To assess the association between firearms in the home and adolescent suicide.

Research Design.—Matched, case-control.

Setting.—Population-based community sample.

Subjects.—Sixty-seven adolescent suicide victims and a demographically matched group of 67 living community controls.

Selection Procedure.—The series of adolescent suicide victims was consecutive, with an overall participation rate of 74% (67/91).

Measurements and Results.—The presence, type (handgun vs long-gun), number, and method of storage (locked vs unlocked, loaded vs unloaded) of firearms in the home were compared between the suicide victims and controls. Even after adjusting for differences in rates of psychiatric disorders between suicide victims and controls, the association between suicide and both any gun (odds ratio [OR]=4.4, 95% confidence interval [CI]=1.1 to 17.5) and nanuguns (OR=9.4, 95% CI=1.7 to 53.9) in the home were both highly significant. Long-guns in the home were associated with suicide only in rural areas, whereas handguns were more closely associated with suicide in urban areas. Handguns (OR=12.9, 95% CI=1.5 to 110.9) and loaded guns (OR=32.3, 95% CI=2.5 to 413.4) in the home were particularly significant risk factors for suicide in those with no apparent psychiatric disorder.

Conclusions.—When pediatricians are faced with a suicidal adolescent, they should insist on the removal of firearms from the home. Pediatricians should also inform parents that the presence of firearms may be associated with adolescent suicide even in the *absence* of clear psychiatric illness.

(AJDC. 1993;147;1066-1071)

Storage Practices and Firearm Suicide Risk, 5- to 19-year-olds

Firearm storage practice	Cases (N=106)	Controls (N=480)	Adjusted odds ratio (95% CI)
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)

Source: Grossman et al. (February 9, 2005). JAMA.





Original Investigation | Pediatrics

Parent and Adolescent Reports of Adolescent Access to Household Firearms in the United States

Carmel Salhi, ScD; Deborah Azrael, PhD; Matthew Miller, MD, ScD

Abstract

IMPORTANCE Adolescent access to firearms increases their risk of firearm injury.

OBJECTIVE To examine adolescent firearm access in homes with guns, how storage may modify access, and discordance between parent and adolescent report of access.

DESIGN, SETTING, AND PARTICIPANTS This survey study used data on parents and their adolescent children from a nationally representative online survey of adults in gun-owning households, conducted from June 30 to August 11, 2019. Individuals who owned firearms and parents of adolescents were oversampled. All parents living with a child aged 13 to 17 years were invited to have their child participate in a separate survey. Respondents with more than 1 adolescent living with them were asked to choose the child with the most recent birthday. Analyses were conducted from June 1, 2020, to January 4, 2021.

MAIN OUTCOMES AND MEASURES Firearm access was assessed by asking adolescents how long it would take to access a loaded gun in their home. Parents were asked whether their child could independently access a household firearm. Individuals who owned guns reported firearm storage practices. Study-specific poststratification weights adjusted for survey nonresponse and undercoverage or overcoverage resulting from the study-specific sample design and for benchmark demographic distributions.

RESULTS Of 6721 adults invited to participate, 4030 completed the survey. Of these, 280 had a firearm in their homes and had a child aged 13 to 17 years who participated in the survey. The mean (SD) age of parents was 45.2 (7.2) years; of children, 15.0 (1.4) years. The sample included 159 male adolescents (weighted percentage, 60.8%; 95% CI, 53.8%-67.8%) and 129 male adults (weighted percentage, 48.3%; 95% CI, 40.9%-55.6%). In 33.9% (95% CI, 26.7%-41.2%) of households, an adolescent reported that they could access a loaded firearm in less than 5 minutes. In homes where all guns were locked, 23.7% (95% CI, 12.3%-35.1%) of adolescents reported that they could access a loaded firearm in less than 5 minutes. Overall, 70.4% (95% CI, 63.7%-77.1%) of parents reported that their child could not access a household firearm. In households where parents said their child could not access a firearm, 21.8% (95% CI 13.8%-29.7%) of their children indicated that they could access a firearm within 5 minutes and 14.9% (95% CI, 8.9%-20.9%) indicated that they could access a firearm in more than 5 minutes but less than 1 hour.

CONCLUSIONS AND RELEVANCE In this study, many adolescents reported having ready access to loaded guns in their homes, even when all household firearms were locked. Many adolescents who reported having access to household firearms lived with parents who knew their children had access, but others lived with parents who did not know. These finding should inform prevention efforts aimed at reducing adolescent access to household firearms.

JAMA Network Open. 2021;4(3):e210989. doi:10.1001/jamanetworkopen.2021.0989

Adolescent Report of Access to a Loaded Household Firearm

	How long does it take to get to a loaded gun			
	>5 min,			
	< 5 min	95% CI	<1 hr	95% CI
Full Sample	33.9% (2	6.7% 41.2%)	17.4% (12.1% 22.6%)
Children of non-owners	36.4% (2	2.9% 50.0%)	18.4% (9.3% 27.5%)
Children of owners	32.9% (2	4.5% 41.4%)	16.9% (10.5% 23.4%)
Number of household guns				
1 gun	18.8% (1	.0% 36.7%)	11.5% (0.0% 24.6%)
2 to 4 guns	30.4% (1	5.5% 45.3%)	21.8% (3.2% 8.9%)
5 or more guns	43.0% (3	0.3% 55.7%)	16.0% (7.0% 25.1%)
Unlocked storage				
No	23.7% (1	2.3% 35.1%)	11.7% (3.7% 19.7%)
Yes	45.0% (3	1.8% 58.2%)	22.2% (11.3% 33.1%)
In homes with any unlocked guns, are				
any loaded & unlocked				
No	28.3% (8	.4% 48.1%)	32.0% (13.4% 50.6%)
Yes	59.4% (4	2.5% 76.2%)	13.8% (1.6% 26.1%)

Sex and age did not have much affect on reported access

Discordance

	Parent report of adolescent access to a household gun		
	No (n=227) 95% CI Yes (r	n=89) 95% CI	
Adolescent report of how long to			
get a gun and load it			
<5 min	21.8% (13.8% 29.7%)	63.3% (50.4% 76.2%)	
>5 min, <1 hr	14.9% (8.9% 20.9%)	22.2% (11.6% 32.7%)	
>1 hr, <2 hr	4.6% (1.9% 7.3%)	3.6% (0.0% 9.5%)	
Can't access in <2 hrs	58.7% (50.0% 67.4%)	10.9% (2.7% 19.2%)	

Based on parent question, "As far as you know, can your child access any of the guns in your home independently, that is without you or another adult in your house accessing it for him/her?"

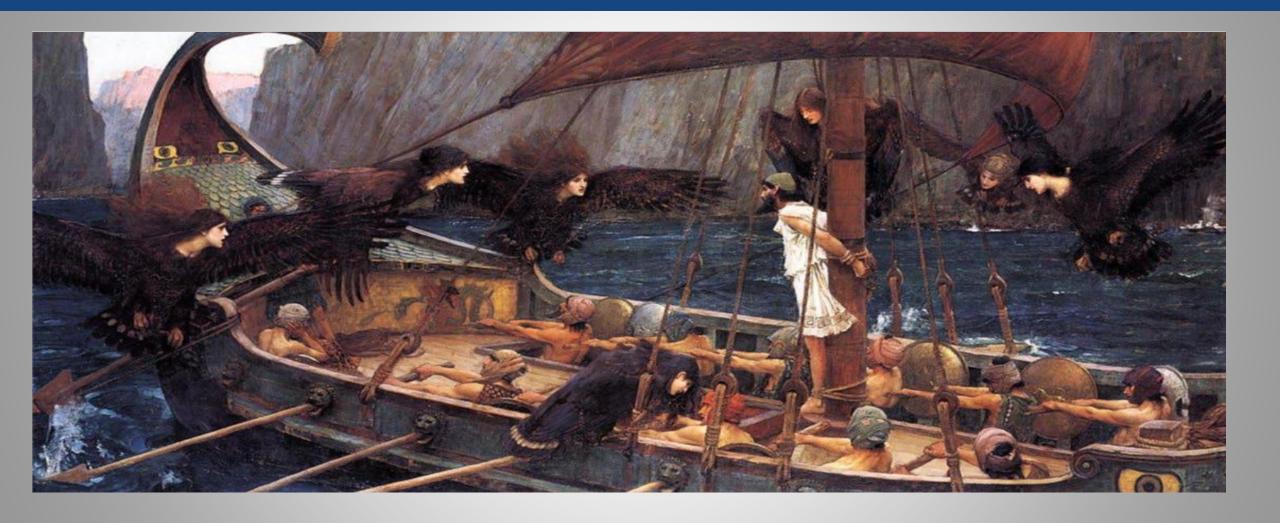
For non-gun owning parents: 27% of those who said their child could not gain access to a household gun had an adolescent who reported they could get to a loaded firearm in <5 mins and an additional 18% in <1hr.

For gun owning parents the corresponding stats are 19% within 5 mins and an additional 13% within an hour.

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
Disagree	48%	68%	64%	37%
Neither agree nor disagree	37%	26%	27%	43%
Agree	15%	6%	9%	20%

Means Matter



State ↓	⇒ Deaths ↑↓	Population	← Crude Rate Per 100,000 🔠
Connecticut (09)	2,020	17,859,594	11.3
Maine (23)	1,280	6,700,143	19.1
Massachusetts (25)	3,318	34,359,824	9.7
New Hampshire (33)	1,277	6,760,034	18.9
New Jersey (34)	3,701	44,623,194	8.3
Rhode Island (44)	578	5,289,866	10.9
Vermont (50)	582	3,121,886	18.6
Total	12,756	118,714,541	10.7

Deaths ↑↓	Population	← Crude Rate Per 100,000 🔒
573	17,859,594	3.2
686	6,700,143	10.2
716	34,359,824	2.1
640	6,760,034	9.5
927	44,623,194	2.1
154	5,289,866	2.9
329	3,121,886	10.5
4,025	118,714,541	3.4
	573 686 716 640 927 154 329	573 17,859,594 686 6,700,143 716 34,359,824 640 6,760,034 927 44,623,194 154 5,289,866 329 3,121,886

