



Published in final edited form as:

Ann Intern Med. 2017 August 15; 167(4): 287–288. doi:10.7326/L17-0111.

The Association of Firearm Suicide With Mental Illness, Substance Use Conditions, and Previous Suicide Attempts

Jennifer M. Boggs, MSW¹, Gregory E. Simon, MD, MPH², Brian K. Ahmedani, PhD, LMSW^{3,4}, Edward L. Peterson, PhD⁵, Samuel Hubley, PhD^{1,6}, and Arne Beck, PhD¹

¹Kaiser Permanente Colorado, Institute for Health Research

²Kaiser Permanente Washington Health Research Institute, Seattle, Washington

³Henry Ford Health System, Center for Health Policy and Health Services Research

⁴Henry Ford Health System, Behavioral Health Services

⁵Henry Ford Health System, Public Health Sciences

⁶University of Colorado at Denver, Department of Family Medicine

Background

Firearms account for half of all suicide deaths in the US (1), and reducing access to firearms among at-risk patients has the potential to reduce suicide mortality (2). Attempts to reduce access to firearms have focused on people with a mental health condition or a history of suicidal behavior.

Objective

To identify the proportion of suicide deaths that could be prevented by limiting firearm access for people with a mental health condition or a history of suicidal behavior.

Methods and Findings

The *Treatment Utilization Before Suicide* study identified 2,674 adult and adolescent people in 8 integrated health systems who died by suicide during 2000-2013 and were continuously enrolled for at least 10 of the 12 months before death (3). Using medical records and claims information, we identified one group of patients with a history of any mental health or substance use condition diagnosed at any medical or mental health visit in the year preceding death, and we identified another group of patients with prior suicide attempts. These 2 groups were not mutually exclusive. People with previous suicide attempts overlapped considerably with those who had a mental health condition, because a mental health condition is usually diagnosed in patients who have attempted suicide. Among people dying of suicide, 54.7% had a mental health or substance use condition, and 42.8% of people with one of these conditions used a firearm (Table). Also, among people dying of suicide,

10.9% had a previous suicide attempt, and 37.5% of people with a previous suicide attempt used a firearm. In contrast, more people without a mental health condition or substance use disorder used firearms in their suicides than did people with those conditions (671 versus 627). Also, more people without a previous suicide attempt used firearms in their suicide than did people with a previous suicide attempt (1189 versus 109). In fact, people with a previous suicide attempt who died by suicide with a firearm represented only 4.1% of suicide deaths, and people with a mental health or substance use condition who died by suicide with a firearm represented only 23.5% of suicide deaths.

Discussion

Our findings show that current attempts to limit firearm access only for people with a mental health condition, which includes substance use disorders, or those with a previous suicide attempt could prevent a minority of deaths from firearm-related suicide, even if limiting access was very successful. Therefore, our findings suggest that prevention of firearm-related suicide should be expanded beyond the current focus on patients with prior suicide attempts or mental health conditions to include other people at risk for suicide. Suicide prevention resources are available to educate primary care providers about how to identify patients at risk, evaluate firearm access, engage patients in treatment, and transition patients to specialty care (4). Our findings also highlight the importance of expanding attention beyond an exclusive focus on firearms, especially for persons with mental health or substance use disorders, to include other common means of suicide, for example, instruments used for suffocation (such as rope for hanging) and use of poisons (such as medications, alcohol, and recreational drugs). Suicide prevention resources also are available to educate primary care providers about restricting access to common means of suicide and counseling at-risk patients and their families about how to implement restrictions (5).

References

1. Centers for Disease Control and Prevention (CDC), (WISQARS™) IPCDS. Welcome to WISQARS™. 2017. [02/15/2017]. Available from: <https://www.cdc.gov/injury/wisqars/>
2. The Joint Commission. Detecting and treating suicide ideation in all settings. 2016 Feb 24. [02/15/2017] Available from: https://www.jointcommission.org/assets/1/18/SEA_56_Suicide.pdf
3. Ahmedani, BK., Simon, GE., Rossom, R., Beck, A., Lynch, F., Waitzfelder, B., et al. Treatment Utilization Before Suicide. National Institutes of Mental Health; 03/2015 - 02/20/2019
4. Suicide Prevention Resource Center (SPRC). Zero Suicide in Health and Behavioral Health Care. 2017. [03/01/2017]. Available from: <http://zerosuicide.sprc.org/>
5. Suicide Prevention Resource Center (SPRC). Waltham, MA: 2017. CALM: Counseling on Access to Lethal Means. [03/01/2017]. Available from: <http://www.sprc.org/resources-programs/calm-counseling-access-lethal-means>

Table
Suicide deaths by firearm use for those with a mental health or substance use condition
and those with a previous suicide attempt

Risk Factor	Firearm Use		
	Yes (N=1298)	No (N=1376)	Total (N=2674)
Mental Health or Substance Use Condition *			
Yes	627	837	1464
No	671	539	1210
Previous Suicide Attempt *			
Yes	109	182	291
No	1189	1194	2383

* $p < 0.001$ by chi-square test. Of the 109 people who had a previous suicide attempt and a firearm-related suicide, 70 of them had a mental health or substance use condition and a firearm-related suicide.

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript