

Leveraging Community Context, Data, and Resources to Inform Suicide Prevention Strategies

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Abstract: Colorado has consistently had one of the highest rates of suicide in the United States, and El Paso County has the highest number of suicide and firearm-related suicide deaths within the state. Community-based solutions like those of the Suicide Prevention Collaborative of El Paso County may be more effective in preventing suicide as they are specific to local issues, sensitive to local culture, and informed by local data, community members, and stakeholders.

Background

Suicide in Colorado

Historically, the Mountain West has had a higher rate of suicide and a higher proportion of firearm suicides compared to other regions in the United States (U.S.); this same trend is true in both Colorado and El Paso County.¹ In 2020, Colorado had the fifth highest rate of suicide in the country.² Located south of the Denver Metro Area and containing Colorado's second largest city, Colorado Springs, El Paso County had the highest number of deaths by suicide and firearm-related suicide of all counties within the state.³

Firearm suicide is the most lethal suicide method, meaning those attempting suicide using firearms are more likely to die compared to other methods. In fact, one study estimated that firearms are 2.6 times more lethal than the second most lethal method, suffocation,⁴ with another study finding 90% of firearm suicide attempts resulting in death.⁵ Additionally, having access to firearms in the home increases the odds of completed suicide more than three-fold compared to those who do not have access to firearms in the home.⁶ While gun ownership is closely correlated with these firearm deaths,⁷ there is a paucity of detailed information regarding prevalence of firearm ownership in Colorado. However, in 2020 there were over 6,600 applications for concealed carry permits and over 47,000 background checks for firearms sales in Colorado, a record number for the state.⁸

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Noting the magnitude of firearm suicide in Colorado and the increase in firearm sales, the Colorado General Assembly created the Suicide Prevention Commission in 2014,⁹ bringing together the Colorado Department of Public Health and Environment, Colorado-National Collaborative for Suicide Prevention, and other members from the public and private sectors. The Colorado Office of Suicide Prevention¹⁰ supports the administration of the Commission and has a goal of reducing suicide deaths by at least 20% by 2024 with a major focus on firearm suicide.⁹ Local efforts are crucial to achieving this goal. We established a local collaborative partnership within El Paso County involving multiple stakeholders to leverage local data, culture, and contexts to establish goals and interventions in an effort to achieve this reduction.

Injury Prevention, the Firearm Community, and Public Health

The public health and the firearm-owning communities have disagreed about how to prevent firearm suicides. Historically, public health injury prevention has focused on either removing or mitigating the factors that increase the risk of injury. Several successful injury prevention campaigns have resulted from this framework with a notable success being the reduction of motor vehicle collision fatalities by over 25% since the 1990s.¹¹ The most effective way to prevent motor vehicle-related injuries and fatalities is to remove all cars from the road; however, as this is an unrealistic approach, other changes were required to prevent injuries. The reduction achieved is attributable to several interventions including improving the environment around cars (e.g., use of reflectors and barriers), safety of cars themselves (e.g., airbags and vehicle crash testing), and laws and media campaigns to reduce drunk driving and increase seatbelt use.¹²

Similarly, regarding firearm injury and fatalities, the removal of all firearms is not a realistic option. However, taking parallel approaches to motor vehicle-related injury prevention has not achieved the

same success. Part of the problem is that all the same options are not available. If public health focuses on preventing high levels of exchange of energy, as was done for motor vehicle crashes, firearm suicide public health practitioners are faced with the impossible task of making the individual impenetrable to ammunition. So instead, there is a focus on the safety of the environment for high-risk individuals. This approach requires reducing access to firearms through policy, behavioral, or other interventions. Policies that limit firearm ownership have met significant resistance, including with arguments made for Second Amendment rights, personal preferences, culture, recreation, and self-defense, among others. Given these challenges, firearm injury prevention requires careful consideration of socially and politically acceptable preventive interventions.¹³

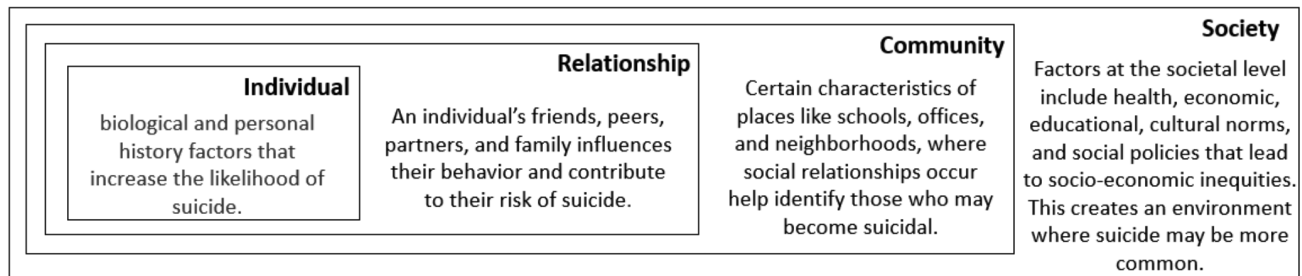
Due to this resistance, efforts have focused on outlining several public health approaches to address firearm violence and suicide in the U.S. that highlight the need for a multidisciplinary strategy.¹⁴ A one-size-fits-all approach is challenging given the complexity and diversity of our social structures. Thus, a multifaceted approach that targets multiple levels of society to have the largest impact is favored. The social-ecological model (Figure 1) can be a helpful framework to conceptualize interventions or policies that target different levels of a person's life — such as individual, relationship, community, societal factors — to ensure the menu of options is broad and extends beyond just individual-level intervention for greatest impact.¹⁵ This model provides a foundation for injury prevention efforts, one which emphasizes the wide range of factors contributing to successful prevention strategies. Importantly, interventions can be locally focused and target all levels of the social-ecological model.

These injury prevention efforts should be developed in collaboration with any interested stakeholder, but specific efforts to prevent firearm suicide should be made that include representatives of the firearm community. If not, well-intentioned messaging may be

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Figure 1

Social-Ecological Model applied to Suicide Risk (Adapted from L.L. Dahlberg and E.G. Krug, "Violence: A Global Public Health Problem," in *World Report on Violence and Health*, ed. E. Krug, L.L. Dahlberg, J.A. Mercy, A.B. Zwi, and R. Lozano [Geneva, Switzerland: World Health Organization; 2002]:1-21.)



Overlapping boxes illustrate how factors at each level can interact and influence factors at another level

perceived as biased or threatening. Perceptions surrounding firearm messaging vary greatly among firearm owners. For example, some firearm owners may view interventions from healthcare or mental health providers as inappropriate due to their perceived lack of cultural knowledge or practical issues related to firearm.¹⁶ Other studies indicate that public health efforts to promote safe storage practices would likely benefit from engaging with local law enforcement agencies, firearm industry advocates or manufacturers, and safety training course instructors.¹⁷ Focusing on these insider messengers is key for garnering trust, improving relationships, and achieving behavioral change.

Along with engaging trusted messengers, crafting a culturally sensitive message is also important. For example, studies have demonstrated that some firearm owners associate a negative connotation with the term "gun" and would prefer the term "firearm."¹⁸ Studies also show that many firearm owners fundamentally misunderstand statistics surrounding firearm ownership and injury outcomes. Of particular concern is the perception that having a firearm in the home makes it safer rather than less safe.¹⁹ Without partnering with firearm communities, well-intentioned public health workers could sabotage messaging campaigns by including sensitive, inflammatory language or statistics without context that alienate firearm owners and harm prevention efforts. Through working with local groups and agencies, navigating these pitfalls becomes much easier to avoid.

There are also local and political issues that impact the relationship between firearm owners and public health practitioners. One example of this is the passage of Extreme Risk Protection Orders (ERPO), also known as "Red Flag" laws. These laws have been enacted in 19 states and the District of Columbia,

including Colorado, in an effort to prevent firearm injuries and suicide.²⁰ These civil orders provide a process for temporary removal of firearms from individuals who threaten imminent violence against themselves or others. State-level studies suggest ERPOs may prevent firearm suicides.²¹ However, Colorado's ERPO law passage in 2019 was controversial in part due to fears of misuse as a way to unfairly confiscate firearms.²² This eventually led to several counties in Colorado, including El Paso County Commissioners, declaring themselves "Second Amendment Sanctuary Counties," a non-binding declaration where local government stated they would not enforce the law (even while the El Paso County Sheriff was supportive and indicated they would enforce the law).²³ This demonstrates the possible unintended consequences of alienating some firearm owners when these laws are passed and results in those firearm owners being less likely to engage in systems that are designed to prevent firearm suicides and homicides during times of crisis. Better communication and clearer dissemination of evidence-based policy in a way that addresses the concerns of most firearm owners is needed to ensure these laws are used in the most effective way.

Alternatively, an example of a successful local, community-based intervention is the Gun Shop Project. Resulting from a partnership between the New Hampshire Firearms Safety Coalition and the Harvard T.H. Chan School of Public Health,²⁴ the Gun Shop Project leverages partnerships between firearms retailers, ranges, and public health experts to reduce access to firearms by individuals at risk for suicide.²⁵ The Gun Shop Project accomplishes this goal by providing retailers, firearm safety instructors, and customers with firearm suicide prevention educational materials which are distributed at firearm education events,

shooting ranges, and retailers. The Gun Shop Project's focus on encouraging temporary offsite storage of firearms when an individual is at elevated suicide risk has been a success, and the program is now being replicated in nearly half of all states in the U.S.²⁶ This public health approach highlights how existing partnerships can be leveraged to create a local approach to address firearm suicide in a culturally acceptable way.

Suicide Prevention Collaborative of El Paso County

To support local suicide prevention efforts, the Suicide Prevention Collaborative of El Paso County was established in 2020 with financial and technical guidance from state and national partners. The Colorado Office of Suicide Prevention coordinates the Colorado-National Collaborative for Suicide Prevention (CNC), a partnership between national, state, and a variety of local affiliates to implement strategies for suicide prevention in Colorado with the goal of reducing the suicide burden across the state. The CNC focuses on developing, implementing, and evaluating a comprehensive strategy for suicide prevention across the continuum, which includes upstream early prevention efforts, intervention and follow-up, and postvention efforts. The CNC is funded by the U.S. Centers for Disease Control and Prevention (CDC), the Association of State and Territorial Health Officials (ASTHO) and Substance Abuse and Mental Health Services Administration (SAMHSA).

CNC counties, which include El Paso County, were selected to participate in the CNC because they had high suicide rates and counts. Each county works closely with a variety of partners, including local health departments, law enforcement, and faith communities, to implement suicide prevention strategies that

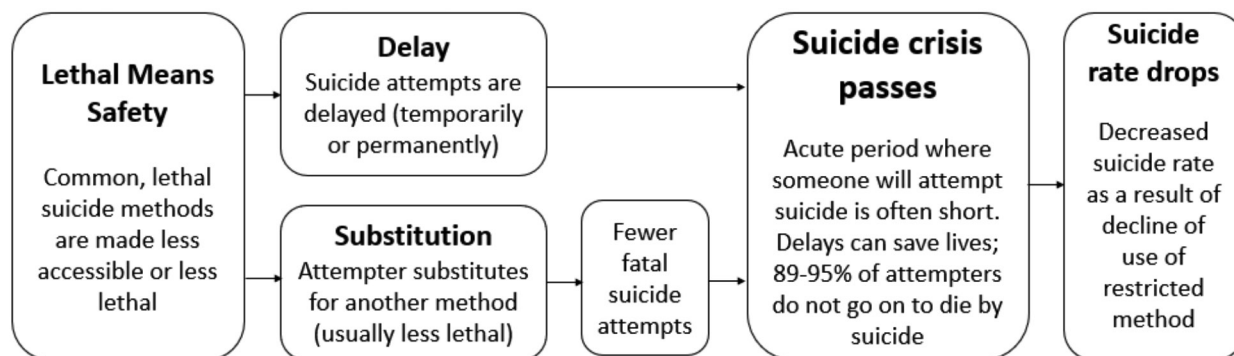
are data-driven and evidence-based from across the prevention, intervention, and postvention (intervention in the aftermath of a suicide to help individuals with grief and distress, and mitigate effects of exposure to suicide including preventing further suicides) continuum.²⁷ The CNC team identified six components for strategic implementation: (1) connectedness, (2) economic stability and supports, (3) education and awareness, (4) access to suicide safer care, (5) postvention, and (6) lethal means safety. These practices are aligned with national recommendations from the CDC and the National Action Alliance.²⁸ The Suicide Prevention Collaborative of El Paso County organizes its work around all six components including Lethal Means Safety.

Lethal Means Safety prevents suicide by limiting access to forms of highly lethal suicide methods during periods of high crisis given that suicidal intent is transient, often involves little planning, and 90% of individuals surviving a suicide attempt do not go on to die from suicide.²⁹ Lethal Means Safety is an evidence-based suicide prevention strategy when applied to many means of suicide. Regarding firearms, this entails limiting access during a time of crisis, or putting time and space between the person in crisis and a firearm until the crisis period has passed (Figure 2).³⁰ One component of firearm lethal means safety is storing firearms unloaded in locked containers inside the home with ammunition stored separately. Several studies have assessed this practice in the U.S., reporting that only up to 50% of firearm owners store their firearms unloaded, in locked containers, or both.³¹

In 2019, one year prior to the formation of the Suicide Prevention Collaborative of El Paso County, a local

Figure 2

Lethal Means Safety Conceptual model (Adapted from C.W. Barber and M.J. Miller, "Reducing a Suicidal Person's Access to Lethal Means of Suicide: A Research Agenda," *American Journal of Preventive Medicine* 47, no. 3 Suppl. 2 [2014]: S264-272; with permission.)



group of leaders formed the Colorado Springs Firearm Safety Think Tank. Comprised of about 60 community members including health care professionals, suicide prevention experts, first responders, law enforcement, military representatives, elected officials, and firearm owners and retailers, the Think Tank had several goals. The first goal was to understand local data

regarding firearm-related deaths, that most of these deaths were by suicide, and that the number of deaths by suicide and firearm-related suicide exceeded all other counties in Colorado. Think Tank members next agreed that the number of deaths locally were too high and impacted a plethora of people in the community. Discussions regarding how to reduce the number of

Table 1

Suicide decedents in El Paso County, CO 2018-2019, firearm vs all other methods

	Firearm (n=182)	Non-Firearm (n=150)	p-value
Age at death, in years (mean (SD))	42.4 (19.5)	41.4 (15.8)	0.608
Gender (male)	152 (83.5)	101 (67.3)	0.002
<i>Method</i>			N/A
Firearm	182 (100.0)	-	
Sharp object	-	3 (2.0)	
Blunt object	-	1 (0.7)	
Poisoning	-	48 (32.0)	
Hanging	-	89 (59.3)	
Other	-	6 (4.0)	
More than 1	-	2 (1.3)	
Unknown	-	1 (0.7)	
<i>Military affiliation</i> [†]			0.002
No	109 (59.9)	116 (77.3)	
Yes	72 (39.6)	32 (21.3)	
Unknown	1 (0.5)	2 (1.3)	
<i>Race</i>			0.744
White	157 (86.3)	129 (86.0)	
Black	7 (3.8)	6 (4.0)	
Asian	3 (1.6)	suppress*	
American Indian	suppress*	suppress*	
Native Hawaiian or Other	suppress*	0 (0.0)	
Pacific Islander	5 (2.7)	4 (2.7)	
Other	6 (3.3)	5 (3.3)	
Multiracial	Suppress*	3 (2.0)	
<i>Ethnicity</i>			0.511
Not Hispanic	161 (88.5)	127 (84.7)	
Hispanic	19 (10.4)	22 (14.7)	
Unknown	suppress*	suppress*	
<i>Personal Relationship Status</i>			0.001
Currently in relationship [‡]	99 (54.4)	61 (40.1)	
Not currently in relationship	51 (28.0)	42 (28.0)	
Unknown	32 (17.6)	47 (31.3)	
<i>Known History of mental health diagnosis</i> [§]			0.001
Yes	86 (47.3)	97 (64.7)	
No/Unknown	96 (52.7)	53 (35.3)	

*Data were suppressed if there were less than 3 individuals represented in the numerator

firearm-related suicides and what additional information was needed to develop an action plan ensued. Engaging in these discussions made it clear that a lot of myths existed in the firearm-owning community that contradicted data regarding the impact of access to highly lethal means in people who were contemplating suicide. For example, one ubiquitous myth was that if people who were contemplating suicide didn't have access to a firearm, they would simply choose

other means to attempt suicide, and that all suicide prevention resources should be devoted to improving mental health care rather than focusing on lethal means safety.³²

In 2020, the Colorado Springs Firearm Safety Think Tank evolved into the El Paso County (EPC) Firearm Safety Workgroup and became part of the Lethal Means Safety workgroup within the Suicide Prevention Collaborative of El Paso County. The CNC

Table 2

Representative quotes by firearm advocates by theme

Theme	Representative Quotes
El Paso County identifies as a strong pro-gun environment, with existing high sensitivity to any gun related discussions	“Our community is highly pro firearms. More conceal carry than any other county in the state, and we are about to have our 4th firing range when most cities our size only have one. It’s a very active community, and I’d say we lean toward protection.”
	“With the high concentration of active duty and veterans, we have a definite military bias. There is a gun culture that comes with that.”
	“This is a very conservative county and gun rights are important and protected. It is part of the lifestyle; seems like we have a lot of gun owners and a lot of hunters too. That goes hand in hand.”
	“The second amendment is a huge part of our identity. It’s emotional because it’s identity driven.”
Suicide prevention is considered a complex issue, without a simple solution; and, no one is believed to have done a “good job” of addressing it	“Do gun locks belong in a different conversation? This is a much bigger issue. We need to have a broader conversation about mental health and wellbeing in our community; make it local.”
	“I’m a huge proponent of firearm safety, but I’m not sure that will solve it; suicide has intent. If a firearm isn’t available, they’ll find a way to get it done.”
	“It doesn’t matter because safety is a factor, huge factor of impulsivity with suicide. You can’t ignore the availability issue in hopes of slowing people down.”
The messaging and the messenger are equally important and requires trust; and including suicide by firearms	“With the high gun ownership culture, it must be very carefully discussed. You cannot use ‘crisis’ language.”
	“If we talk about locking up guns, we’ll only piss off gun owners. Empathy and understanding is the first answer.”
The general public has extremely low awareness of around local suicide statistics	“There’s not enough education on the numbers, the data. So I’d say a very low percentage understand. Education is definitely an important part of it. There is a woeful lack of education out there now.”
	“EPC is a really interesting community. 4th most conservative in the U.S. with military and strong Christian communities; that’s the beginning. People don’t want to believe if its not convenient or doesn’t align with their biases. Unless it affects you, you don’t see it.”
	“The hospital staff was shocked at the stats and how significant it is. We need to get the stats out there more and share what a high-risk community we are. It’s really shocking.”

supports this effort, as lessons learned from previous efforts showed that lethal means safety is most effective and successful when we utilize localized grassroots efforts around messaging, such as a trusted messenger who is locally rooted and has personal experience vs. that outreach and work coming directly from the state.

Data-Informed Priorities

During deliberations of the EPC Firearm Safety Workgroup, firearm advocates in the group clearly articulated cultural differences amongst local firearm owners compared to other citizens and geographic areas in the state and stated a level of distrust of data, opinions, intent, and actions from outside of the local community, especially related to firearms. To inform strategies on how to educate El Paso County residents on how to best reduce firearm-related deaths, the Suicide Prevention Collaborative sought both quantitative and qualitative data from local sources.

In collaboration with the El Paso County Coroner's office, data on all suicides in the county were collected, analyzed, and disseminated to understand how particular sub-populations were impacted by suicide. Data on all suicide decedents in 2018-2019 were abstracted from the El Paso County Coroner's Office, including police and coroner reports. Of particular interest were data not included in the state-wide violent death reporting system, including information on firearm storage and ownership. Authors (LB, CL, JL, EW) abstracted data detailing who discovered the decedent, circumstances of the scene, and known suicide risk factors.³³ All analyses were performed using R Statistical Software (version 3.6.2; R Foundation for Statistical Computing, Vienna, Austria). This local data showed a large proportion (55%, Table 1) of firearm-related suicide deaths compared to all other means of suicide and a large proportion of suicide decedents with military affiliations (31%; Table 1). In addition, data was abstracted from local coroner reports that was not available at the national or state level, including that 74.7% of firearm suicide decedents were the owner of the firearm used in suicide. This data led to the collaborative prioritizing of specific strategies. Findings were summarized and disseminated with an infographic.

Additional data collection through a qualitative study was executed with the goal of understanding how to disseminate messaging on firearm safety. A local organization with experience in conducting focus groups was hired with funding from the SPC to help conduct and analyze this study. From July 7th-24th, 2020, 13 local firearm advocates including community partners, firearm owners, and firearm retailers and instructors

participated in a focus group held via video conference, and ten 30-minute individual interviews were also performed. Findings included (1) El Paso County identifies as a strong pro-gun environment, with existing high sensitivity to any firearm-related discussions; (2) suicide prevention is considered a complex issue, without a simple solution, and no one is believed to have done a "good job" of addressing it; (3) the messaging and the messenger are equally important and require trust; and (4) the general public has extremely low awareness of local suicide statistics, including suicide by firearms (Table 2).

From this, the collaborative created a strategic plan that incorporated these qualitative and quantitative data. Priorities were set to focus on several factors in addressing firearm suicide in El Paso County. First, establishing a baseline understanding of the local firearm suicide issue was deemed a high priority, achieved by disseminating facts without overwhelming or evoking a "crisis" sentiment. While lethal means safety was thought to be part of the solution, this type of messaging is premature without community awareness of the firearm suicide public health problem in El Paso County. Second, acknowledging the strong firearm culture and the emotion surrounding firearms needed to be part of any communications initiative. Respect and understanding for firearm owners and their rights needed to be embedded in any messaging that was developed. This would help to ensure that the disseminated message would be more acceptable to the target audience and prevent further alienation of the firearm owning community.

Local Activities & Resources

Informational Video and Social Media Campaign

The Suicide Prevention Collaborative produced an informational video on safe firearm storage and suicide prevention which was recorded by trusted messengers from the community, including first responders and military leaders: Sheriff Bill Elder (El Paso County), Director of Public Safety Chris Heberer (City of Fountain), Lt. Col. Chris Jackson (United States Air Force), Police Chief Vincent Niski (City of Colorado Springs) and Fire Chief Randy Royal (City of Colorado Springs). The needs of the community drove a culturally sensitive approach, focusing on apolitical solutions to educate the community about local suicide data, and motivating safe firearm storage to reduce deaths by suicide.

A social media campaign ensued, along with individual distribution of the video to trusted messengers within the firearms community. The Facebook media ad campaign was administered by a third-party mar-

keting firm beginning in August 2021. As of April 2022, the total number of times the ad was displayed to users on Facebook was 2,091,738, this included 268,522 Facebook users in the target audience of El Paso County. The ad, which included the full link to the Suicide Prevention Collaborative website including the video, was clicked 7,192 times.

Feedback was derived from views and engagement (comments) on social media websites in addition to direct feedback from other stakeholders/organizations in El Paso County. Anecdotal feedback from local firearms advocates on the content and messaging of the video was positive. The City of Colorado Springs added the video to its website after the video was presented at one of its weekly meetings, and several individuals and organizations have distributed it to other

focused action plan that examines the six strategic components of suicide prevention including lethal means and develops activities to incorporate the lens of Justice, Equity, Diversity and Inclusion (JEDI) and social determinants of health. Future firearm safety education and outreach will include diversifying messaging and audiences.

In addition, two Colorado college students were awarded a \$10,000 grant from the Davis Projects for Peace program, an initiative open to undergraduate students to initiate projects that tackle causes of conflict and contribute to creating peace. The students have been working with the Suicide Prevention Collaborative of El Paso County and the Lethal Means Firearm Safety Workgroup developing community workshops to be presented in September 2022 to

Understanding local context and culture that may contribute to suicide trends is foundational. It allows engaged community stakeholders to address these factors to reduce firearm suicide deaths in El Paso County and the state of Colorado as a whole. Community-based solutions driven by local data like those of the Suicide Prevention Collaborative of El Paso County may be more effective in preventing suicide as they are specific to local issues, sensitive to local culture, and informed by local data, community members, and stakeholders.

local firearm owners and have included the video in their firearm safety training courses. The overall sense is that the video effort has been successful at raising local awareness of the firearm suicide issue.

Ongoing Work

Ongoing outreach and education on firearm safety and suicide prevention with the Suicide Prevention Collaborative of El Paso County continues. A graduate student (LB) developed an infographic informed by members of the Suicide Prevention Collaborative using the abstracted 2018-2019 data from El Paso County Coroner's Office. The infographic details deaths by suicide including by firearm and provides data based on gender, age, military affiliation, and contributing risk factors. The information was distributed during the summer of 2022 at the local premier of a film supporting the Blue Angels fundraiser and suicide prevention awareness event to 300 attendees. The infographic will be distributed at events and in presentations to the community throughout El Paso County. The Suicide Prevention Collaborative of El Paso County also recently developed an equity-

cover safe storage and suicide prevention. Ongoing activities also include distributing safe storage devices and working with El Paso County employers to provide information to employees about safe storage and suicide prevention.

Conclusion

Understanding local context and culture that may contribute to suicide trends is foundational. It allows engaged community stakeholders to address these factors to reduce firearm suicide deaths in El Paso County and the state of Colorado as a whole. Community-based solutions driven by local data like those of the Suicide Prevention Collaborative of El Paso County may be more effective in preventing suicide as they are specific to local issues, sensitive to local culture, and informed by local data, community members, and stakeholders.

Note

The authors have no conflicts of interest to disclose.

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