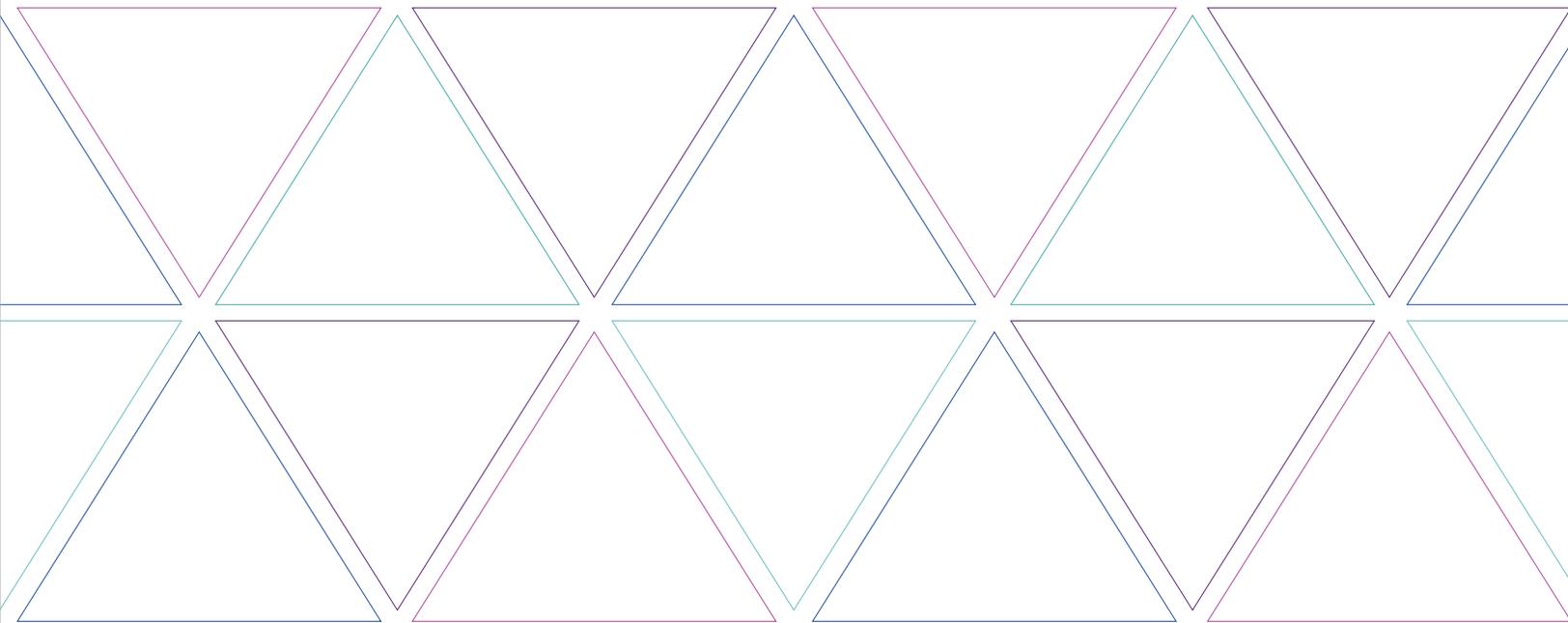




Suicide Prevention

RESOURCE FOR ACTION





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Suicide Prevention

RESOURCE FOR ACTION

A Compilation of the Best Available Evidence

2022

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The 2022 *Suicide Prevention Resource for Action* (Prevention Resource, for short) is an update to the 2017 *Preventing Suicide: A Technical Package of Policy, Programs, and Practices*. It was a collaborative effort between the National Center for Injury Prevention and Control/Division of Injury Prevention and the Prevention Institute (Cooperative Agreement #NU38OT000305). We thank the following individuals who contributed to the development or design of this new Prevention Resource (listed in alphabetical order):

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Overview

Suicide Can Be Prevented

Like most public health problems, suicide is preventable.¹⁻³ The National Center for Injury Prevention and Control's vision of "No lives lost to suicide" relies on implementing a comprehensive public health approach to prevention. These efforts rely on timely data and evidence, prompting an update of the 2017 *Preventing Suicide: A Technical Package of Policy, Programs, and Practices*. This 2022 version, now called the *Suicide Prevention Resource for Action* (or *Prevention Resource*, for short), weaves in new evidence that can be implemented and adapted for the community-specific context.

About the Suicide Prevention Resource for Action

This resource is intended to help communities and states learn about the best available evidence for suicide prevention.

The *Suicide Prevention Resource for Action* maintains the features of the 2017 *Preventing Suicide: A Technical Package of Policy, Programs, and Practices*. It lays out a core set of strategies to achieve and sustain substantial reductions in a specific risk factor or outcome, such as suicide.⁴ This resource is intended to help communities and states learn about the best available evidence for suicide prevention. Communities and states can pair this information with their local context and experience to prioritize prevention activities. This resource has three components. The first component is the **strategy** or the preventive actions to achieve the goal of preventing suicide. The second component is the **approach** or the specific ways to advance the strategy. This can be accomplished through policy, programs, and practices, which are the third component and are based on the **evidence** for each of the approaches in preventing suicide or its associated risk factors.

This Prevention Resource represents a select group of strategies based on the best available evidence to help communities and states focus on prevention activities with the greatest potential to prevent suicide. These strategies include:

- ▶ Strengthen economic supports
- ▶ Create protective environments
- ▶ Improve access and delivery of suicide care
- ▶ Promote healthy connections
- ▶ Teach coping and problem-solving skills
- ▶ Identify and support people at risk
- ▶ Lessen harms and prevent future risk

Preventing Suicide Is a Priority

Suicide is a critical public health problem in the United States (U.S.).⁵

SUICIDE is a death caused by injuring oneself with the intent to die.

SUICIDE ATTEMPT is defined as a *nonfatal act* when someone harms themselves with any intent to end their life but does not die as a result of their actions. A suicide attempt may or may not result in injury.

In recent years, the urgency to prevent suicide has heightened as millions of Americans were impacted by the coronavirus disease 2019 (COVID-19) pandemic and the overdose epidemic. These two major crises have taken a mental, emotional, physical, and economic toll on individuals, families, and communities.²

Suicide is not caused by any single factor and suicide prevention will not be achieved by any single strategy or approach.^{1,2,6} The public health strategies in this resource focus on preventing the risk of suicide in the first place and lessening the immediate and long-term harms of suicidal behavior by helping those in times of crisis get the services and support they need. These strategies support the goals and objectives of the *National Strategy for Suicide Prevention*, *The Surgeon General's Call to Action to Implement the National Strategy for Suicide Prevention*, the Action Alliance's priority to strengthen community-based prevention, and the Centers for Disease Control and Prevention's (CDC) comprehensive suicide prevention approach.

Partnering across sectors to leverage expertise and implementing multiple strategies and approaches that are tailored to cultural needs and strengths can address the multiple factors associated with suicide. Commitment, cooperation, and leadership from public health, mental health, education, justice, healthcare, social services, business, labor, and

government, among others, can drive significant improvements in suicide prevention.

Suicide is highly prevalent

Suicide presents a major challenge to public health in the U.S. and worldwide. It contributes to premature death, morbidity, lost productivity, and healthcare costs.^{1,3} Suicide was responsible for nearly 46,000 deaths in the U.S. in 2020.⁷ This is about 1 suicide every 11 minutes.⁸ Suicide is a leading cause of death for people ages 10–64 years.⁹ Suicide rates rose 30% from 2000 to 2020, including small declines in 2019 and 2020.^{7,10}

Suicide rates vary by age, race/ethnicity, and other socio-demographic characteristics. In 2020, suicide was the second leading cause of death for people ages 10–14 years and 25–34 years, the third leading cause for people ages 15–24 years, the fourth leading cause for people ages 34–44 years, the seventh leading cause for people ages 45–54 years, and the ninth leading cause for people ages 55–64 years.⁹ Non-Hispanic American Indian or Alaska Native (AI/AN) people have the highest suicide rates, followed by non-Hispanic White people.¹⁰ Racism, historical trauma, and long-lasting inequities such as disproportionate exposure to poverty have contributed to higher suicide rates among non-Hispanic AI/AN youth and other groups who have been marginalized.¹¹

Some other population groups disproportionately impacted by higher-than-average suicide rates include veterans, people who live in rural areas, and workers in certain industries and occupations.^{12–14} Transition periods are also associated with higher risk of suicide. This includes transitions from work into retirement, from active-duty military status to civilian status, from high school to college, and between levels of healthcare such as from an inpatient psychiatric hospitalization to outpatient care.^{15–19}

Suicides reflect only a portion of the problem.²⁰ Substantially more people are hospitalized or treated in ambulatory settings like emergency departments for nonfatal self-harm such as suicide attempts or



Suicide is not caused by any single factor and suicide prevention will not be achieved by any single strategy or approach.

not treated at all.²⁰ In 2020, 12.2 million American adults seriously thought about suicide, 3.2 million planned a suicide, and 1.2 million attempted suicide.²¹ According to recent research, between 1991 and 2017, trends in suicidal ideation and planning among high school students decreased among all sex and racial and ethnic groups except non-Hispanic students of multiple races.²² Another recent study found that trends in suicide attempts among adolescents from 2009-2019 increased overall, and Black students, both male and female, had the highest prevalence estimates for suicide attempts.²³ Disparities in access to mental health treatment and other factors such as poverty, historical trauma, and adverse childhood experiences (ACEs) may contribute to differences in suicide attempt rates among Black youth.²² In addition, young people who identify as lesbian, gay, or bisexual have a higher rate of suicidal ideation as compared to their peers who identify as straight. In

2019, suicide attempts were more prevalent among students who reported having sex with persons of the same sex or with both sexes (30%) and students who identified as lesbian, gay, or bisexual (23%).²³ Transgender adolescents are at high risk of suicidal ideation and behavior compared to cisgender adolescents.²⁴

Suicide is associated with multiple risk and protective factors

Research indicates that suicide risk varies as a result of the number and intensity of key risk and protective factors experienced.²⁵ Suicide occurs in response to multiple biological, psychological, interpersonal, environmental, and societal influences that interact with one another, often over time.^{3,26,27} The [social-ecological model](#) encompasses multiple levels of focus and considers the complex interplay between individual, relationship, community, and societal factors. Characteristics that may increase the likelihood of suicide across populations include:



Belonging, safety, dignity, and hope can support resilience and healing for individuals and communities, and protect against suicide.

- ▶ **Individual risk factors:** Previous suicide attempt, history of depression and other mental illnesses, serious illness such as chronic pain, criminal/legal problems, job/financial problems or loss, impulsive or aggressive tendencies, substance misuse, current or prior history of adverse childhood experiences, sense of hopelessness, violence victimization and/or perpetration
- ▶ **Relationship risk factors:** Bullying, family/loved one's history of suicide, loss of relationships, high conflict or violent relationships, social isolation
- ▶ **Community risk factors:** Lack of access to healthcare, suicide cluster in the community, stress of acculturation, community violence, historical trauma, discrimination

- ▶ **Societal risk factors:** Stigma associated with help-seeking and mental illness, easy access to lethal means of suicide among people at risk, unsafe media portrayals of suicide

The presence of risk factors does not predict suicide or suicide attempts for any given person. Most individuals who experience risk factors or who attempt suicide do not die by suicide. The cumulative effect of several risk factors may serve to increase an individual's vulnerability to suicidal behaviors. The relevance of any given risk factor can vary by age, race, gender, sexual orientation, residential geography, and socio-cultural and economic status.^{3,27,28}

Protective factors, or those influences that buffer against the risk for suicide and promote resilience, can also be found across the levels of the social-ecological model. Protective factors that improve resilience include:^{3,27,28}

- ▶ **Individual protective factors:** Effective coping and problem-solving skills, reasons for living (for example, family, friends, pets, etc.), strong sense of cultural identity
- ▶ **Relationship protective factors:** Support from partners, friends, and family, feeling connected to others
- ▶ **Community protective factors:** Feeling connected to school, community, and other social institutions, availability of consistent and high quality physical and behavioral healthcare
- ▶ **Societal protective factors:** Reduced access to lethal means of suicide among people at risk, cultural, religious, or moral objections to suicide

These protective factors can either counter a specific risk factor or buffer against multiple risks associated with suicide. Belonging, safety, dignity, and hope can support resilience and healing for individuals and communities, and protect against suicide.²⁹

Suicide, ACEs, and substance use are connected

Exposure to violence is associated with increased risk of depression, post-traumatic stress disorder, anxiety, suicide attempts, and suicide. Types of violence could include child abuse and neglect, bullying, peer violence, dating violence, sexual violence, and intimate partner violence.³⁰⁻³⁷ ACEs, such as physical, sexual, and emotional abuse, or living in homes with violence, mental illnesses, or substance misuse, are also associated with increased risk for suicide attempts and suicide.^{33,38} The effects of ACEs are often cumulative. Experiencing more ACEs is associated with greater risk for future poor outcomes when compared to people with fewer ACEs.³⁹

Unemployment, poverty, and lower educational attainment are overlapping risk factors for ACEs, substance misuse, and multiple forms of violence and suicide,^{40,41} which suggests that efforts to prevent

these related issues may also prove beneficial in preventing suicide.⁴²⁻⁴⁴ Similarly, many protective factors overlap and may be shared. Connectedness to one's community,⁴⁵ school,⁴⁶ family,⁴⁷ caring adults,^{48,49} and pro-social peers⁵⁰ can enhance resilience and help reduce risk for suicide and different forms of violence.

Substance use disorders and suicide risk are associated.^{51,52} For example, in a study using the National Death Index data and treatment data from electronic health records of 5 million veterans, researchers found diagnosis of substance use disorder was associated with increased suicide risk.⁵³ Drinking alcohol at an early age, heavy drinking, and mild to severe alcohol use disorder can all lead to increases in suicidal ideation.⁵⁴ The relationship is also cyclical. Losing a loved one to overdose or suicide during childhood can increase the risk for overdose or suicide later in life.⁵⁵

Suicide has far-reaching impacts

Suicide and suicide attempts can contribute to lasting impacts on individuals, families, and communities.⁵⁶⁻⁵⁹ Studies estimate that the number of individuals impacted by a single suicide attempt ranges from 135–456 individuals.^{60,61} Other studies have found that 48–58% of adults in the U.S. know at least one person over their lifetime who died by suicide.^{61,62} Research also indicates that people with lived experience, such as having attempted suicide, having suicidal thoughts, or having experienced the loss of a friend or family member to suicide, may suffer long-term health and mental health consequences, such as anger, guilt, and physical impairment.⁶³⁻⁶⁶ Survivors of a loved one's suicide may experience ongoing pain and suffering including complicated grief,⁶⁷⁻⁶⁹ stigma, depression, anxiety, post-traumatic stress disorder, and increased risk of suicidal ideation and suicide.^{64,70-72} The economic toll of suicide on society is immense as well. Suicide cost the U.S. more than \$460 billion and self-harm \$26 billion in 2019.^{73,74}

STRATEGIES AND APPROACHES

to achieve and sustain substantial reductions in suicide

STRATEGY

APPROACH



1 Strengthen Economic Supports

- Improve household financial security
- Stabilize housing



2 Create Protective Environments

- Reduce access to lethal means among persons at risk of suicide
- Create healthy organizational policies and culture
- Reduce substance use through community-based policies and practices



3 Improve Access and Delivery of Suicide Care

- Cover mental health conditions in health insurance policies
- Increase provider availability in underserved areas
- Provide rapid and remote access to help
- Create safer suicide care through systems change



4 Promote Healthy Connections

- Promote healthy peer norms
- Engage community members in shared activities



5 Teach Coping and Problem-Solving Skills

- Support social-emotional learning programs
- Teach parenting skills to improve family relationships
- Support resilience through education programs



6 Identify and Support People at Risk

- Train gatekeepers
- Respond to crises
- Plan for safety and follow-up after an attempt
- Provide therapeutic approaches



7 Lessen Harms and Prevent Future Risk

- Intervene after a suicide (postvention)
- Report and message about suicide safely



Contextual and Cross-Cutting Themes

Synergistic strategies and approaches

The strategies and approaches in this resource can have complementary and synergistic impacts. They are intended to impact community and societal levels as well as individual and relationship levels. They can work in combination and reinforce each other to prevent suicide (see summary box at left).

Each strategy has a specific focus, but the strategies are not mutually exclusive. For instance, some programs that teach skills like emotional regulation and conflict resolution fall under the *Teach Coping and Problem-Solving Skills* strategy but also include components to change peer norms, which falls under the *Promote Healthy Connections* strategy. However, the primary focus of these programs is to provide children and youth with coping and problem-solving skills to resolve problems in relationships, in school, and with peers and to help youth address other negative influences such as substance use.

Comprehensive action

The overarching goal of this resource is to stress the importance of comprehensive prevention efforts. Comprehensive suicide prevention includes preventing suicide risk, supporting those at increased risk of suicide, preventing reattempts, and supporting survivors of suicide loss. Programs, practices, and policies that span multiple sectors and influence multiple levels of the social ecology are more likely to have a greater effect on the overall burden of suicide.

Assessing local context, needs, and strengths

The effectiveness of the programs, policies, and practices identified here will depend on how well they are implemented and the level of participation from partners and communities. Practitioners in the field and community members are valuable resources for assessing needs and strengths and making decisions about the combination of approaches that are best suited to their community context. Community members can also advance health equity by including and amplifying the voices of underserved populations and assisting with cultural adaptations of prevention



Practitioners in the field and community members are valuable resources for assessing needs and strengths and making decisions.

strategies and approaches that may increase acceptability and effectiveness. Multiple strategies and approaches tailored to the social, economic, cultural, and environmental context will increase the likelihood of developing individual and community resilience and removing barriers to supportive and effective care.^{1,2}

Data-driven strategic planning with engagement from multi-sectoral partners can help communities with decision-making.⁷⁵⁻⁷⁷ This planning process guides its members through activities designed to address the range of risk and protective factors specific to the community using programs, practices, and policies with the best available evidence. Strategic planning can also be used to monitor implementation, track outcomes, and adjust as indicated by the data. The community's readiness to plan, implement, and evaluate prevention efforts can also influence

program effects. Implementation guidance to assist practitioners, organizations, and communities is available through the Action Alliance's [Transforming Communities: Key Elements for the Implementation of Comprehensive Community-Based Suicide Prevention](#) and the [Suicide Prevention Resource Center](#).^{78,79} The Prevention Institute's [Suicide Prevention Modules](#)⁸⁰ offer specific guidance for suicide prevention planning in the context of catastrophic events.

Collaboration

A comprehensive approach to suicide prevention includes multi-sectoral partnerships as no agency or sector can accomplish suicide prevention on its own. Such partnerships include allies in the public and private sectors like public health, mental health, healthcare, education, employment/labor, housing, social services, business, and others. Public health agencies are well-positioned to bring leadership and resources to implement strategies. The role of other sectors in implementation is described in the section on *Collaboration and Partnerships*.

The COVID-19 Pandemic and Suicide Prevention

The COVID-19 pandemic created unprecedented challenges for communities. Some experts noted that COVID-19 created the “perfect storm” for increased suicide risk due to the consequences of physical/ social distancing, increases in economic stressors, decreased access to mental health treatment, and decreased access to typical routines and support systems.⁸¹⁻⁸³ Prior public health crises were associated with increased suicide risk among some populations. Studies suggest increased suicide rates during the 1918–1920 influenza pandemic in the U.S. and in Taiwan and among older adults in Hong Kong during the 2003 severe acute respiratory syndrome pandemic.⁸⁴⁻⁸⁶



At the time of this writing (while the world is deeply embedded in the COVID-19 pandemic), it is too early to assess the full impact of the COVID-19 pandemic on suicide. While overall suicide rates declined in 2019 and 2020, they increased among some populations.⁷ Studies showed increases in mental distress and substance use for some populations during the pandemic.⁸⁷⁻⁸⁹ A CDC study conducted in June 2020 indicated that U.S. adults reported significant mental health distress related to COVID-19.⁸⁷ The study also showed that specific sub-populations, including younger adults, people from racial and ethnic minority groups, essential workers, and unpaid adult caregivers, reported experiencing disproportionately worse mental health outcomes, increased substance use, and increased suicidal ideation. Early evidence among older adults paints a different picture. A qualitative study of older adults with pre-existing depression showed no difference in depression, anxiety, and suicidal ideation symptom scores. Instead, older adults exhibited resilience and increased use of technology to connect virtually with social supports.⁹⁰

Organizations are developing strategies to respond to the potential risk presented by COVID-19. For example, telehealth is being used to identify, assess, and treat individuals who are at risk for suicide. Evidence-based suicide prevention programs, such as Collaborative Assessment and Management of Suicidality, have been adapted for use with telehealth to support higher demand for mental health services.⁹¹ The effectiveness of telehealth as a treatment modality has been deemed as equivalent to in-person treatment for many mental health diagnoses, including post-traumatic stress disorder and depression, but the effectiveness for specific suicide interventions is less clear at this time.⁹²⁻⁹⁴ The effectiveness of using telehealth alongside existing suicide prevention strategies is a new area of study, as is consideration for access to technology among people who are at increased risk for suicide.

The Action Alliance has convened diverse sectors to coordinate the [Mental Health and Suicide Prevention National Response to COVID-19](#) to create sustainable and comprehensive solutions to the mental health impacts of the COVID-19 pandemic. The National Response is a public-private partnership engaging leaders from academia, business, government, nonprofits, non-governmental organizations, healthcare, public safety, and media and entertainment.^{95,96}

Assessing the Evidence

This *Suicide Prevention Resource for Action* includes policies, programs, and practices with evidence of impact on suicide, suicide attempts, or risk or protective factors. It has been updated from the original 2017 *Preventing Suicide: A Technical Package of Policy, Programs, and Practices* through a review of suicide-related literature published from 2016–2020 and with input from subject matter experts and state and community leaders. Evidence for inclusion had to meet at least one of the following criteria:

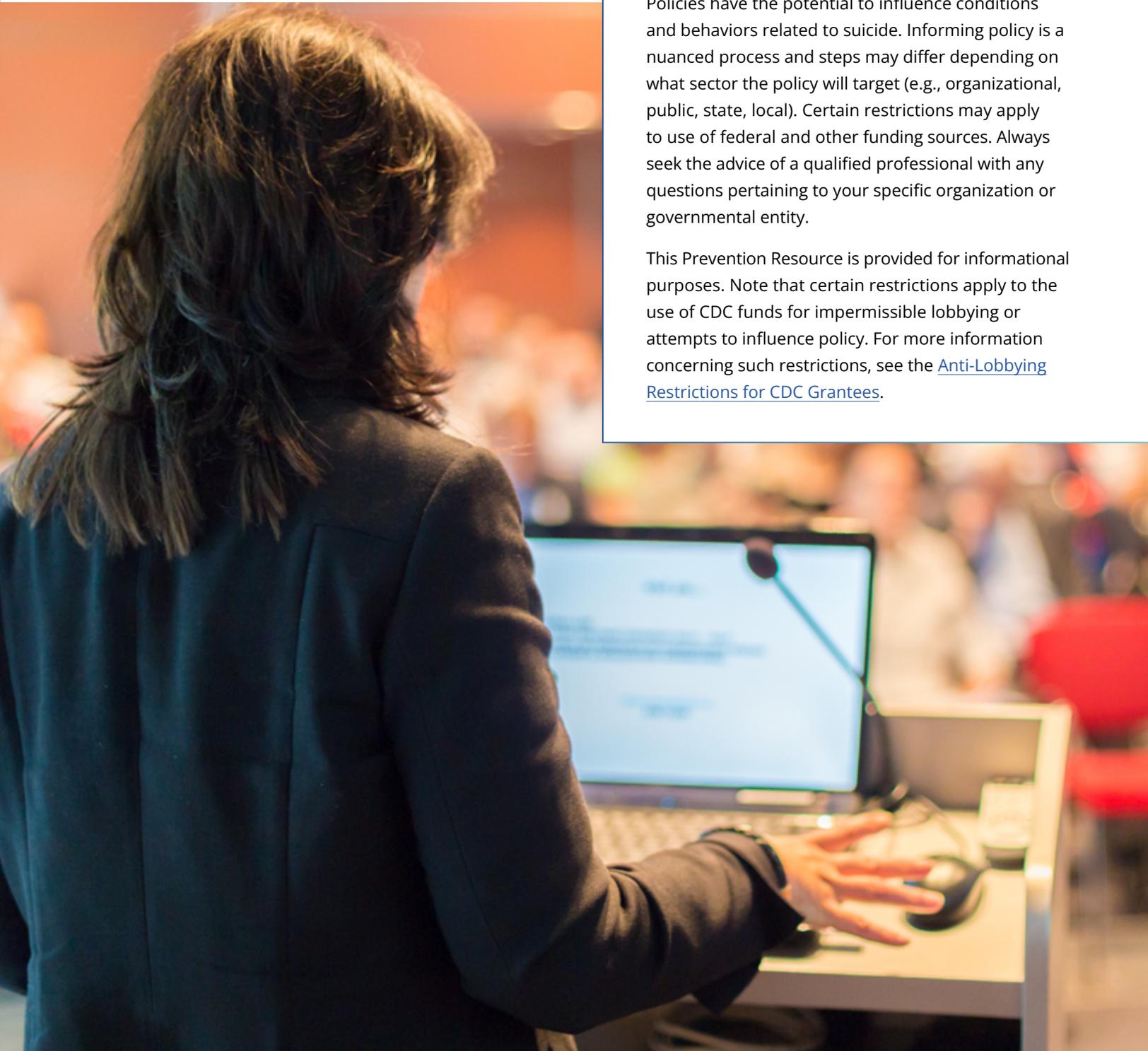
- ▶ meta-analysis or systematic review showing impact on suicide,
- ▶ evidence from at least one rigorous evaluation study (e.g., randomized controlled trial or quasi-experimental design with a control group or multiple pre- and post-assessments) that found significant preventive effects on suicide,
- ▶ meta-analysis or systematic review showing impact on risk or protective factors against suicide, or
- ▶ evidence from at least one rigorous evaluation study that found significant impacts on risk or protective factors against suicide. International studies were included if they were written in English and could potentially be implemented in the U.S. context. In evidence sections below, the study locations are listed for studies conducted outside the U.S.

Some approaches do not yet have research evidence demonstrating impact on suicide rates but are supported by evidence indicating impacts on risk or protective factors against suicide. Programs that have demonstrated effects on suicide or suicide attempts provide a higher level of evidence, but the evidence base is not that strong in all areas. For instance,

less evaluation has been done on the effects of the community engagement and family programs on suicidal behavior. The approaches provided in this resource that have effects on risk or protective factors related to suicidal behaviors reflect the developing nature of the evidence base and use of the best available evidence at a given time.

Importantly, significant heterogeneity in the nature and quality of the available evidence often exists among the policies, programs, or practices in a given strategy or approach. Not all policies, programs, or practices that utilize the same approach are equally effective, and even those that are effective may not work across all populations. Tailoring programs for specific populations that are culturally relevant and conducting more evaluations may be necessary to address different population groups. *The policies, programs, and practices included in the resource are not intended to be a comprehensive list for each approach but rather serve as examples that have shown impact on suicide or suicide risk or protective factors.* [Learning modules](#) from the Prevention Institute are available to guide state and community leaders in adapting and applying the evidence to meet local community needs.

Each chapter shares evidence from published literature that was confirmed by experts for each of the seven suicide prevention strategies. They include the rationale for the strategy, an overview of the broad approaches, potential outcomes resulting from the strategy and approaches, and evidence citations for each of the approaches. Finally, a section on future directions describes where additional studies are being conducted or need to be conducted to expand the evidence and identify additional approaches.



Informing Policy

Policies have the potential to influence conditions and behaviors related to suicide. Informing policy is a nuanced process and steps may differ depending on what sector the policy will target (e.g., organizational, public, state, local). Certain restrictions may apply to use of federal and other funding sources. Always seek the advice of a qualified professional with any questions pertaining to your specific organization or governmental entity.

This Prevention Resource is provided for informational purposes. Note that certain restrictions apply to the use of CDC funds for impermissible lobbying or attempts to influence policy. For more information concerning such restrictions, see the [Anti-Lobbying Restrictions for CDC Grantees](#).



Strengthen Economic Supports

Rationale

Historical trends in the U.S. indicate that suicide rates increase during economic recessions marked by high unemployment rates, job losses, and economic instability and decrease during economic expansions and periods marked by low unemployment rates, particularly for working-age individuals 25–64 years old.^{77,97-100} Economic and financial strain may increase an individual's risk for suicide or may indirectly increase risk by exacerbating existing physical and/or mental illnesses.^{101,102} Financial strains could include job loss, long periods of unemployment, poverty, reduced income, difficulty covering medical, food, and housing expenses, and even the anticipation of such financial stress. Evictions and homelessness are also related to suicide.^{97,103} Reducing these stressors can potentially buffer suicide risk. For example, strengthening economic support systems can help people stay in their homes or obtain affordable housing. They may also pay for necessities such as food and medical care, job training, childcare, and other expenses required for daily living. Providing economic support may reduce stress, anxiety, and the potential for a crisis, thereby preventing risk of suicide. More research is needed on how economic factors interact with other factors to increase suicide risk, but the available evidence suggests that strengthening economic supports may be one opportunity to buffer suicide risk.

Providing economic support may reduce stress, anxiety, and the potential for a crisis, thereby preventing risk of suicide.

Approaches

Economic supports for individuals and families can be strengthened by increasing household financial security and ensuring stability in housing during periods of economic stress.

Improve household financial security

This approach can buffer the risk of suicide by providing individuals with the financial means to lessen the stress and hardship associated with a job loss or other unanticipated financial problems. The provision of unemployment benefits and other forms of temporary assistance, livable wages, medical benefits, and retirement and disability insurance to help cover the cost of necessities or to offset costs in the event of disability are examples of ways to strengthen household financial security.

Stabilize housing

This approach seeks to keep people in their homes and provides housing options for those in need during times of financial insecurity. Housing stabilization may occur through programs that provide affordable housing to those who are experiencing homelessness or are at risk of homelessness. It could happen through government subsidies, loan modification programs, and financial counseling services to help minimize the risk or impact of foreclosures and eviction.

Potential Outcomes

Potential outcomes include reductions in:

- ▶ Financial stress
- ▶ Emotional distress
- ▶ Poverty
- ▶ Foreclosure and eviction rates
- ▶ Suicide

Evidence

Evidence suggests that strengthening household financial security and stabilizing housing can reduce suicide risk.

Improve household financial security

Some studies have shown that [unemployment insurance benefits](#) may offset the relationship between unemployment and suicide. One study found

that an increase in the maximum benefits allowed through unemployment insurance was protective against increasing suicide rates during times of increased unemployment.¹⁰⁴ This was particularly the case among those ages 20–34. Another study in the U.S. examined reciprocity rates (the percentage of unemployed individuals receiving unemployment insurance benefits) by state over time and found that this was also related to reduced suicide rates but only among men, non-Hispanic White Americans, and those ages 45–64 years.¹⁰⁵

Other unemployment support practices.

Government municipalities in Japan implemented a broad community-based intervention that provided both financial and non-financial support to unemployed individuals, such as consultations about unemployment, bankruptcy, debt problems, and human resource training.¹⁰⁶ Researchers found that this comprehensive intervention reduced suicide rates among older males. A meta-analysis of the impact of unemployment support practices (in studies from the U.S., the United Kingdom, Spain, Australia, and





Finland) found that job skills training or group support interventions reduced levels of depressive symptoms, a suicide risk factor, particularly among those at highest risk for clinical depression.¹⁰⁷

Other household financial security measures.

One study in the U.S. found that state suicide rates decreased as per capita spending increased on total **transfer payments, medical benefits, and family assistance** such as Temporary Assistance for Needy Families.¹⁰⁸ Researchers estimated 3,000 fewer suicides would occur nationally per year if every state increased its per capita spending on these types of assistance by \$45 per year.¹⁰⁸

A more rigorous evaluation was carried out in Indonesia examining the impact of cash *transfer payments* on suicide rates.¹⁰⁹ The program offered conditional cash transfers of 10% of the household's annual consumption for six consecutive years in subdistricts with high levels of poverty. Results

indicated that the cash transfers reduced annual suicide rates by 18% in the participating subdistricts.

Other household benefits that may impact suicide rates in the U.S. are state supplements to federal **earned income tax credits, Supplemental Nutrition Assistance Program (SNAP)** participation, and **Social Security early retirement benefits**.¹¹⁰⁻¹¹³

Two independent studies found that states that supplemented the federal earned income tax credit at 10% or more had a 3–4% reduction in suicide rates compared to states with no state supplement.^{111,112} Another study estimated that a 1% increase in SNAP participation could result in approximately 7,000 fewer suicide deaths.¹¹³ A fourth study indicated that early access to Social Security benefits reduced suicide rates by 7–8% among those turning 62 years of age.¹¹⁰

Finally, there is growing evidence that **increasing minimum wages** may reduce suicide rates. One study in the U.S. estimated that a \$1 increase in



Programs offering support for individuals and families threatened by potential eviction or foreclosure may help prevent suicide.

minimum wages was associated with a 2% decrease in annual suicide rates.¹¹⁴ Two other studies examined the impact among those with a high school education or less. The first study found that a 10% increase in minimum wages was related to a 2.7% decrease in non-drug suicide deaths among those with a high school education or less.¹¹² A second study indicated that a \$1 increase in minimum wages was associated with a 6% decrease in suicide rates.¹¹⁵ Increasing minimum wages can help minimize the disparities between increased suicide rates among those of lower versus higher socioeconomic status.¹¹⁶

Stabilize housing

A longitudinal analysis of the association between suicides and foreclosures demonstrated that as the proportion of foreclosed properties increased, so did the state suicide rate, particularly among working-aged adults.¹¹⁷ Another study analyzing data from 16 U.S. states found that suicides associated with home foreclosures and evictions increased more than 100% from before the housing crisis began in 2005 to after it peaked in 2010.⁹⁷ Most of the suicides occurred prior to the actual loss of the person's home. Programs offering support for individuals and families threatened by potential eviction or foreclosure may help prevent suicide.

A particularly understudied area is the impact of financial assistance and eviction support on suicide risk for individuals with lower incomes who rent rather than own a home. Studies have not found that **rent assistance** can reduce suicide, but there is an association between financial assistance programs for renters with lower incomes in the U.S. and United Kingdom and self-reported depression, a suicide risk factor.^{118,119}

Programs that offer **low-barrier housing for individuals experiencing chronic homelessness** may also help reduce suicide. Housing First is one such program.¹²⁰ One study in Canada found individuals with alcohol problems who entered Housing First experienced a 43% reduction in severity

of suicidal ideation after two years.¹²¹ A more rigorous randomized controlled trial done in Canada among individuals experiencing homelessness with major mental health illnesses also observed decreases in suicidal ideation over two years. However, this impact was not substantially different from a control group who were referred to existing community supports.¹²²

The Veterans Health Administration's programs for homeless veterans significantly reduced both all-cause and suicide mortality among veterans self-reporting housing instability. These programs included:

- ▶ Emergency housing services such as Health Care for Homeless Veterans and Safe Haven programs
- ▶ Rapid rehousing and homelessness prevention programs such as Supportive Services for Veteran Families
- ▶ Permanent supportive housing programs such as the U.S. Department of Housing and Urban Development-Veterans Affairs Supportive Housing
- ▶ Transitional housing¹²³

Future Directions

Evidence is still accumulating around many approaches for strengthening economic supports and their relationship with suicide. Many studies show promising correlations between the interventions and the outcomes at the population level. This evidence can be strengthened as states and communities continue to monitor changes and impacts using rigorous study designs.



Create Protective Environments

Rationale

Prevention efforts that focus on changes to the environment can increase the likelihood of positive behavioral and health outcomes.¹²⁴ Creating environments that address risk and protective factors where individuals live, work, and play can help prevent suicide.^{1,125} Suicide rates are high among middle-aged adults who comprise about 43% of the workforce;¹²⁶ among certain occupational groups;^{12,127} and among people in detention facilities such as jails or prisons.¹²⁸ Settings where these populations work and reside are ideal for implementing policies, programs, and practices to buffer against suicide. Implementing supportive policies can change organizational culture by changing social norms, encouraging help-seeking, and demonstrating that health and mental health are valued.^{129,130} Modifying characteristics of the physical environment such as access to lethal means among people at risk can prevent harmful behavior and reduce suicide rates, particularly in times of crisis or transition.¹³¹⁻¹³⁶

Creating environments that address risk and protective factors where individuals live, work, and play can help prevent suicide.

Approaches

The current evidence suggests three potential approaches for creating environments that protect against suicide.

Reduce access to lethal means among persons at risk of suicide

Means of suicide such as firearms, hanging or suffocation, or jumping from heights provide little opportunity for rescue. These means have high case-fatality rates. Almost 90% of people who use a firearm in a suicide attempt die from their injury.¹³⁷ Research also indicates that the interval between deciding to act and attempting suicide can be as short as 5 or 10 minutes^{138,139} and people tend *not* to substitute a different method when a highly lethal method is unavailable or difficult to access.¹⁴⁰⁻¹⁴² Reducing access to lethal means among people at risk and increasing the time interval between deciding to act and the suicide attempt can be lifesaving. The following are examples of approaches intended to reduce access to lethal or available environmental means for persons at risk of suicide:

- ▶ **Interventions to reduce readily accessible environmental means.** A person's environment can significantly influence the accessibility of lethal suicide means. Places where suicides may take place relatively easily include tall structures (such as bridges, cliffs, balconies, and rooftops), railway tracks, or isolated areas. Efforts to prevent suicide at these locations include erecting barriers or limiting access to prevent jumping and installing signs and telephones to encourage individuals who are considering suicide to seek help.¹⁴³⁻¹⁴⁷
- ▶ **Safe storage practices and policies.** Safe storage of medications, firearms, and other household products can reduce the risk for suicide by separating individuals at elevated risk of suicide from easy access to lethal means. Such

practices may include storing firearms in a gun safe or lock box, unloaded and separate from the ammunition, and keeping medicines in a locked box or other secure location. The provision of a safe storage device may also be combined with education and counseling about access to lethal means to enhance safe storage practices.¹⁴⁶ Finally, approaches that effectively limit children's access to firearms in the home by enhancing safe storage practices may help prevent youth suicide.

- ▶ **Approaches to put time and space between lethal means and suicidal individuals** may help save lives. Mandatory waiting periods are laws that delay the possession of firearms for a period of time after purchase. These laws may help insert time and space between an individual's impulse or decision to attempt suicide and an actual suicide attempt.¹⁴⁸

Create healthy organizational policies and culture

Protective environments that promote positive behaviors and norms may be implemented in places of employment, detention facilities, and other secured environments such as residential settings. Such policies and cultural values include strong leadership support of policies and programs and promote pro-social behavior (such as asking for help), skill building, and positive social norms among all people in the organization or setting. These policies

can also improve access to assessments, referrals, and helping services such as mental health treatment, substance misuse treatment, and financial counseling. Crisis response plans, postvention, and other measures can also foster a safe physical environment. These policies and cultural shifts can positively impact organizational climate and morale to help prevent suicide and its related risk factors such as depression and social isolation.^{130,149}

Reduce substance use through community-based policies and practices

Research studies in the U.S. have found that greater alcohol availability is positively associated with alcohol-involved suicides.¹⁵⁰⁻¹⁵² A review of the literature found that acute alcohol use was associated with more than one-third of suicides and approximately 40% of suicide attempts.¹⁵³ **Policies to reduce excessive alcohol use** include zoning to limit the location and density of alcohol outlets, taxes on alcohol, and bans on the sale of alcohol for individuals under the legal drinking age.¹⁵² Studies have also revealed a connection between suicide attempts and other substance misuse, such as opioids.^{51,154} One analysis revealed a dose-response relationship between suicide and opioids prescribed for pain, depicting higher suicide rates among those with higher dose prescriptions.¹⁵⁴

Potential Outcomes

Potential outcomes include increases in:

- ▶ safe storage of lethal means, and
- ▶ access points to low and no cost help-seeking.

Potential outcomes also include reductions in:

- ▶ stigma associated with mental illness and suicide-related outcomes,
- ▶ suicide, and
- ▶ substance-related suicide deaths.





Crisis response plans, postvention, and other measures can also foster a safe physical environment. These policies can positively impact organizational climate.

Evidence

The evidence suggests that creating protective environments can reduce suicide and suicide attempts by increasing the time and space between a suicidal individual's decision to act and an actual suicide attempt. As with other strategies, the evidence is continually evolving. People using this Prevention Resource may wish to seek out the latest evidence since release of this publication.

Reduce access to lethal means among persons at risk of suicide

Interventions to reduce readily accessible environmental means. Erecting a barrier on the Jacques-Cartier Bridge in Montreal, Canada, reduced the suicide rate from people jumping off the bridge

from about 10 suicide deaths per year to about 3 deaths per year.¹⁵⁵ The reduction in suicides by jumping was sustained even when all bridges and nearby sites were considered. This suggests little to no displacement of suicide deaths to other jumping sites.¹⁵⁵ Similar results were seen at the Bloor Street Viaduct in Toronto, Canada. Installing a barrier decreased the average annual deaths by suicide at the viaduct from 9 to 0.1, with only 1 suicide death over the 11 years following its installation.¹⁴⁷

Safe storage. In a case-control study of firearm-related events in 37 counties in Missouri, Oregon, and Washington, and five trauma centers in Washington and Missouri, researchers found that firearms being stored unloaded, separate from ammunition, and in a locked place (or secured with a safety device) was protective of suicide attempts among adolescents.¹⁵⁶ The Israeli Defense Forces administration enacted a prevention strategy that included mandatory storage of soldiers' firearms on base when soldiers went home for the weekends. This effort resulted in a 40%–50% decrease in suicide rates of soldiers over the weekends.^{157,158}



Counseling on Access to Lethal Means (CALM) is a suicide prevention program designed to reduce access to lethal means in times of crisis.¹⁶³ CALM was initially developed for use by mental health providers but has been tailored for use in emergency departments. The Emergency Department Counseling on Access to Lethal Means (ED CALM) was used to train psychiatric emergency clinicians in a large children's hospital to provide lethal means counseling and safe storage boxes to parents of patients under age 18 receiving care for suicidal behavior. In a pre-post quality improvement project, Runyan and colleagues found that 76% of the 55% of parents who were followed up with (n = 114) reported that all medications in the home were locked as compared with fewer than 10% at the time of the initial emergency department visit.¹³¹ Among parents who indicated the presence of guns in the home at pre-test (67%), all (100%) reported guns were currently locked at post-test.¹³¹

Another study evaluated a CALM implementation program with case managers to understand the impact of the training on service providers. Case managers reported that most beliefs, attitudes, and behavioral intentions about counseling clients and

families on lethal means improved after the training. Most participating providers believed CALM provided them with concrete ideas to use in their work (78%), and it addressed an important, often overlooked aspect of suicide prevention (77%).¹⁵⁹

A CALM online training is available to the public on the Suicide Prevention Resource Center (SPRC; listed under [Resources and Programs](#)). This video describes a [CALM partnership](#) between National Center for Injury Prevention and Control's Core State Violence and Injury Prevention Program and Injury Control Research Centers.

Approaches to put time and space between lethal means and suicidal individuals. A review of **child access prevention laws** concluded that they have been associated with lower rates of youth firearm self-injury and suicide.¹⁴⁸ These laws, called CAP laws, are intended to limit a child's access to firearms within the home. Two types of CAP laws exist: those that hold the firearm owner liable for directly providing the firearm to a minor (recklessness laws) and those that hold the firearm owner liable for the unsafe storage of the firearm (negligence laws). In a study of state-level

CAP firearm laws throughout the U.S. between 1991–2016, negligence CAP laws were associated with a 12% relative reduction in firearm suicides among children and youth under 15 years old.¹⁶⁰ However, authors acknowledge that due to the study design, the results cannot be used to indicate causality and that residents' awareness of these laws in a particular state is unknown. Some research suggests that gun owners are often not aware of negligent storage CAP laws in their state and that the presence of the law is not associated with a significant difference in storage practices.¹⁶¹ Lastly, the results do not account for differences between states, misclassification in the data, or enforcement of CAP laws.¹⁶⁰

Other policies to put time and space between lethal means and people with suicidal thoughts or intent include **mandatory waiting periods**. A systematic review concluded that there is “moderate” evidence (i.e., two or more studies found significant effects in the same direction and no contradictory evidence was found in other studies with stronger methods) that mandatory waiting periods are associated with lower firearm suicide rates.¹⁴⁸ As above, causality cannot be inferred due to the correlational nature of the study design, and the extent to which laws impacted individuals directly is unknown. Also, the effects of waiting periods can be limited because they are likely to only have protective benefits for those who do not already own a firearm, and the possibility remains that waiting periods might only delay suicide for some individuals.¹⁴⁸

Create healthy organizational policies and culture

The United States Air Force Suicide Prevention Program is an example of healthy organizational policies and culture.¹⁶² The program includes 11 policy and education initiatives and was designed to change the culture within the Air Force surrounding suicide. The program uses leaders as role models and agents of change, establishes expectations for behavior related to awareness of suicide risk, develops skills and knowledge in the population

through education and training, and investigates every suicide to understand what contributed to the death.¹⁶³ Researchers using a time-series design found the program was associated with a 33% relative risk reduction in suicide.¹⁶³ A longitudinal assessment of the program over the period 1981–2008 (16 years before the 1997 launch of the program and 11 years after the launch) found significantly lower suicide rates after the program was launched than before.¹²⁹ These effects were sustained over time, except in 2004, which the authors found was associated with less rigorous implementation of the program.¹²⁹

Together for Life is a workplace program the Montreal Police Force implemented to address suicide among officers. Policy and program components were designed to foster an organizational culture that promoted mutual support and solidarity among all members of the force. The program included training for supervisors, managers, and all units to improve competencies in identifying suicide risk and use and awareness of existing resources. The program also included an education campaign to improve awareness and help-seeking.¹⁶⁴ Police suicides were tracked over 12 years and compared to rates in the control city of Quebec. The suicide rate in the intervention group decreased significantly by 79% to a rate of 6.4 suicides per 100,000 population per year compared to an 11% increase in the control city (29 per 100,000).¹⁶⁴ Suicide decreases were evaluated 10 years later in a follow-up study. Results indicated that the decrease in suicides observed 12 years after initiation of the Together for Life program were sustained in the following 10 years of program's operation.¹⁶⁵

Primary and secondary school-based organizational initiatives have also demonstrated effectiveness in improving staff knowledge and confidence recognizing and properly addressing student self-injury and suicidality. **Strong Schools Against Suicidality and Self-Injury** depicted such results immediately after implementation of two-day workshops and at six-month follow-up evaluations (U.S. and Germany).^{166,167}

Correctional suicide prevention that involves comprehensive policies and practices can reduce suicide among incarcerated populations through:

- ▶ routine suicide prevention training for all staff,
- ▶ standardized intake screening and risk assessment,
- ▶ provision of shared information between staff members (especially in transitioning or transferring of inmates),
- ▶ varying levels of observation,
- ▶ safe physical environment,
- ▶ emergency response protocols,
- ▶ notification of suicidal behavior through the chain of command, and
- ▶ critical incident stress debriefing and death review.¹⁴⁹

As a result of this approach, suicide rates among those incarcerated in 11 state prisons in Louisiana dropped 46%, from a rate of 23.1 per 100,000 before the intervention to 12.4 per 100,000 the following year.¹⁶⁸ Similar programs both in the U.S. and in other countries have resulted in declines in suicide.¹⁶⁹

Reduce substance use through community-based policies and practices

A meta-analysis of over 870,000 participants in cross-sectional, case-control, and cohort studies identified a strong relationship between substance use disorders and suicide-related outcomes, including suicidal ideation, attempts, and deaths.¹⁷⁰ Several studies examining **reduced alcohol outlet density** in the

U.S., Canada, Denmark, Lithuania, Russia, Slovenia, Switzerland, Sweden, the United Kingdom, and the Soviet Union¹⁷¹⁻¹⁷⁵ suggest that such measures can potentially reduce alcohol-involved suicides. Additionally, a longitudinal analysis of alcohol outlet density, suicide mortality, and hospitalizations for suicide attempts over six years in 581 California ZIP codes indicated that greater density of bars, specifically, was related to greater suicide and suicide attempts, particularly in rural areas.¹⁷⁶ Although correlational, researchers discovered a positive effect on suicide rates from **prescription drug supply restrictions** (as measured by the implementation of Prescription Drug Monitoring Programs) in locations with a strong presence of drug treatment facilities and prescribing of medication-assisted therapy.¹⁷⁷

Future Directions

Research on how to create protective environments is ongoing and continually evolving, with evaluations underway. For example, the [Gun Shop Project](#) is currently active in many states and communities. This program educates gun shop owners and customers about how to identify and respond to a customer who is potentially at risk of suicide.^{178,179} This program was created by community members, a gun shop owner, behavioral health and suicide prevention organization representatives, and public health researchers. Work is underway to evaluate this program and other similar programs.

Additional research is needed to replicate and extend prior studies related to approaches to reduce access to firearms among persons at risk for suicide. This research could include evaluations of strategies to promote and incentivize safe storage practices and to enhance awareness of relevant laws and programs to encourage and sustain consistent safe storage. Future research could also address the evidence limitations of CAP laws, mandatory waiting periods, and other policies that are implemented to prevent firearm suicide but could benefit from additional research on their effects.¹⁴⁸





Primary and secondary school-based initiatives have shown some promising methods for improving schools' suicide safety.

There is ongoing research related to the impact of discrimination on suicide and the effects of creating healthy organizational cultures and policies. Some evidence suggests the implementation of same-sex marriage policies is associated with reduced numbers of suicide attempts among adolescents who identify as sexual minorities.¹⁸⁰ Similarly, state-level nondiscrimination policies towards LGBTQ+ communities has been associated with decreased suicide-related hospitalizations.¹⁸¹ A third study including more than 200,000 middle and secondary school-aged youth found that the presence of a gay-straight alliance club on a school's campus lessened connections between gay-bias victimization and suicide attempts through reductions in hopelessness.¹⁸²

Future research may further solidify the relationship between discriminatory policies and practices and suicide to inform prevention efforts moving forward, particularly amongst those with historical trauma and

adverse social conditions.¹⁸³ Adaptations for specific populations could be explored and tested, such as the recommendations for AI/AN people in the community prevention manual "[To Live To See the Great Day That Dawns](#)."¹⁸⁴ Adaptations for college and university settings are being explored through programs such as the 2021 Garrett Lee Smith Campus Suicide Prevention grant program, which could provide important lessons for future prevention efforts.

Primary and secondary school-based initiatives have shown some promising methods for improving schools' suicide safety and further work could strengthen such programs. For example, a [Creating Suicide Safety in Schools](#) workshop demonstrated increased knowledge about suicide prevention practices, enhanced beliefs in the importance of school-based prevention and perceived administrative support, and greater confidence in the roles staff play in suicide safety. At the three-month follow-up, however, school staff experienced barriers to implementing change, primarily insufficient time for suicide-focused programming. The authors then recommended that suicide prevention trainings be accompanied by broader organizational changes.¹⁸⁵



Improve Access and Delivery of Suicide Care



Rationale

Most people with mental health conditions never attempt or die by suicide,^{186,187} but these disorders are important risk factors for suicide.^{3,188} Findings from the 2020 [National Survey on Drug Use and Health](#) (NSDUH) indicate that less than half (46%) of adults in the U.S. with mental health disorders received treatment for those conditions.²¹ Lack of access to mental healthcare is one of the contributing factors related to the underuse of mental health services. This may be particularly pertinent for people with serious mental illness, people from racial and ethnic minority groups, underserved communities, those living in rural communities, and people who are uninsured.¹⁸⁹⁻¹⁹¹ The intersection of ethnicity with underuse of mental health services is associated with poverty. It may also be explained by a combination of factors including social stigma, mistrust of the behavioral health system, and lack of cultural adaptation of interventions. Identifying ways to improve access to timely, affordable, culturally appropriate, and quality care for people at risk for suicide is a critical component to prevention.^{3,192,193} Research suggests that services are maximized when health and behavioral healthcare systems are set up to effectively and efficiently deliver care.¹⁹⁴

Over 121 million Americans live in areas without enough mental health providers to meet their needs. This shortage is particularly severe among low-income urban and rural communities.

Approaches

Several approaches can be used to improve access and delivery of suicide care.

Cover mental health conditions in health insurance policies

Federal and state laws include provisions for coverage of mental health services in health insurance plans that is on par with coverage for other health concerns, called **mental health parity**.⁷³ Benefits and services covered include the number of visits, co-pays, deductibles, inpatient/outpatient services, prescription drugs, and hospitalizations. If a state has a stronger mental health parity law than the federal parity law, then insurance plans regulated by the state must follow the state parity law. If a state has a weaker parity law than the federal parity law, that is, includes coverage for some mental health conditions but not others, then the federal parity law will replace the state law. Equal coverage does not necessarily imply coverage of quality care, as health insurance plans vary in the extent to which benefits and services are offered to address various health conditions.

Increase provider availability in underserved areas

Access to effective and state-of-the-art mental healthcare is largely dependent upon the training and the size of the mental healthcare workforce. Over 121 million Americans live in areas without enough mental health providers to meet their needs. This shortage is particularly severe among low-income urban and rural communities.^{195,196} Particular populations that remain underserved include

veterans and people from racial and ethnic minority groups.^{191,197} Increasing the number and distribution of mental health providers in underserved areas may include offering financial incentives through existing state and federal programs, such as loan repayment programs, and expanding the reach of health services through telephone, video, and web-based technologies such as telehealth. Additionally, community mental health clinics bring providers directly into underserved communities. These small, government-funded clinics focus on mental health and substance use services. Such approaches can increase the likelihood that those in need will be able to access affordable quality care for mental health disorders, which can reduce risk for suicide. Some models of care use the existing workforce, such as collaborative care described in the Identify and Support People at Risk chapter.

Provide rapid and remote access to help

Telemental health (TMH) services refer to the use of telephone, video, and web-based technologies for providing psychiatric or psychological care at a distance. TMH may offer improved access to mental healthcare, and it may also ensure continuity of care. Technological advances in the delivery of TMH have also resulted in innovations such as use of transcripts and recordings of mental health services in identifying suicide risk. TMH can be used to treat a wide range of mental health conditions in a variety of settings, including outpatient clinics, hospitals, and military treatment facilities. It can also improve access to care for patients in isolated areas, as well as reduce travel time and expenses, reduce delays in receiving care, and improve satisfaction about interacting with the mental healthcare system. TMH services increased during the COVID-19 pandemic because health insurance providers loosened restrictions around delivery of services via video conference, telephone, and other telecommunications such as text-based services.

Create safer suicide care through systems change

Access to health and behavioral healthcare services is critical for people at risk of suicide. Care that is delivered efficiently and effectively can help reduce risk of suicide. For example, systems will see benefits when suicide prevention and patient safety are supported through strong leadership, workforce training, systematic identification and assessment of suicide risk, implementation of evidence-based treatments (see Identify and Support People at Risk), continuity of care, and continuous quality improvement.¹⁹⁸⁻¹⁹³ Care that is patient-centered and promotes equity for all patients is also critically important.¹⁹⁸

Potential Outcomes

Potential outcomes include increases in:

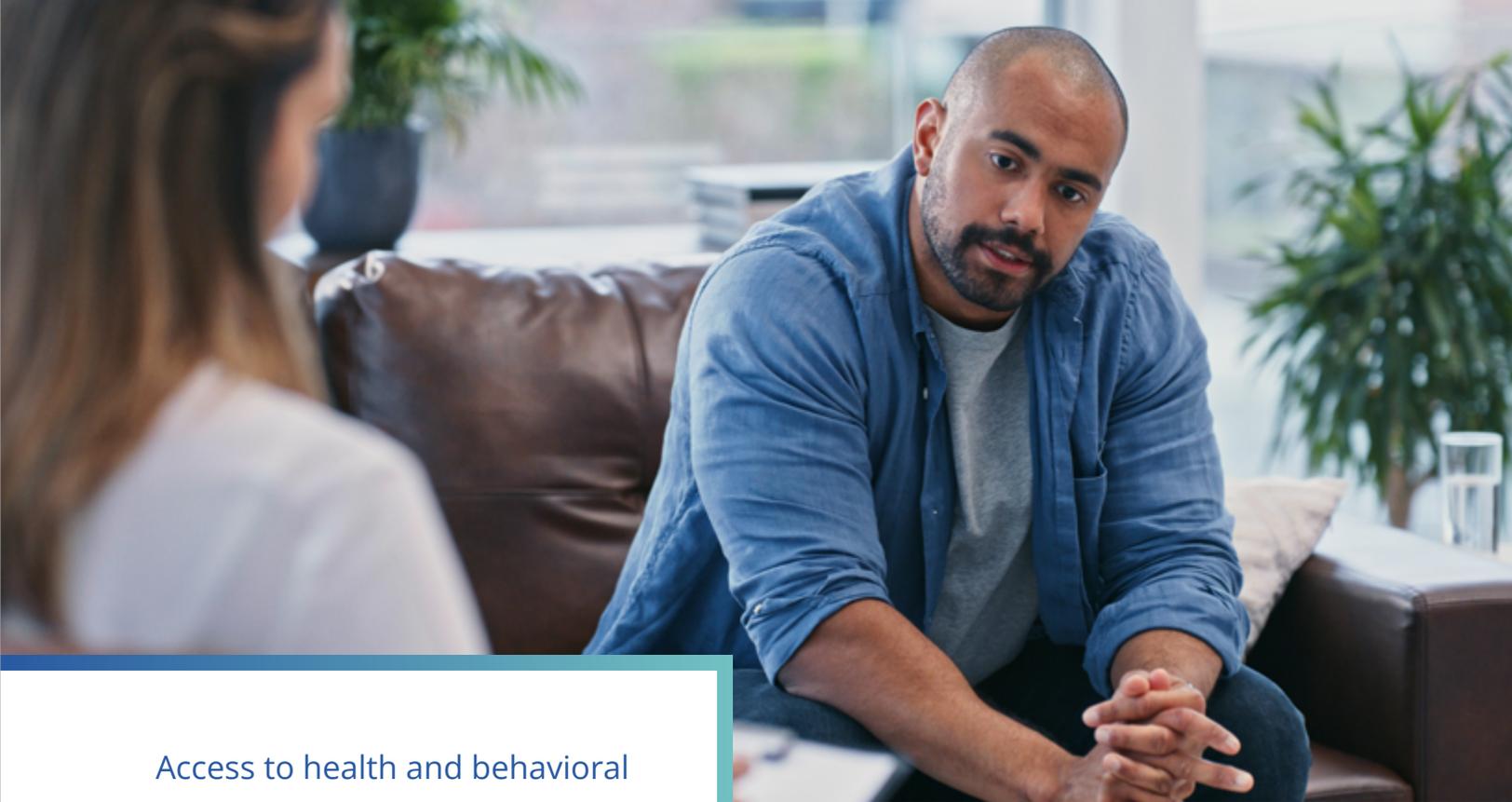
- ▶ use of a variety of clinical services,
- ▶ consistent and improved risk detection across a variety of healthcare settings, and
- ▶ support for help-seeking.

Outcomes may also include reductions in:

- ▶ rates of treatment attrition,
- ▶ symptoms of mental health disorders,
- ▶ suicide attempt rates among individuals engaged in clinical care, and
- ▶ suicide rates among individuals engaged in clinical care.

Evidence

The following evidence suggests that coverage of mental health conditions in health insurance policies and improved access to and delivery of quality suicide care can reduce risk factors associated with suicide and may directly impact suicide rates.



Access to health and behavioral healthcare services is critical for people at risk of suicide. Care that is delivered efficiently and effectively can help reduce risk of suicide.

Cover mental health conditions in health insurance policies

NSDUH is a nationally representative survey of the U.S. population that provides data on substance use, mental health conditions, and service utilization.¹⁹⁹ Harris, Carpenter, and Bao used data from this survey and found that 12 months after states enacted **mental health parity laws**, the self-reported use of mental healthcare services significantly increased, which is a protective factor against suicide.²⁰⁰⁻²⁰² Similarly, a recent review of the literature suggested that overall mental healthcare utilization was associated with the presence of mental health parity laws, including among children and adolescents living in households with incomes below the federal poverty level.²⁰² An early study found no effects on state suicide outcomes.²⁰³ However, a later study by Lang examined state mental health laws and suicide rates

between 1990 and 2004 and found that mental health parity laws, specifically, were associated with about a 5% reduction in suicide rates. This reduction equated to the prevention of 592 suicides per year in the 29 states with parity laws.²⁰⁴

Increase provider availability in underserved areas

Incentive programs such as the **National Health Service Corps** (NHSC) encourage individuals to work in the mental health profession in locations designated as Health Professional Shortage Areas (HPSAs) in exchange for student loan debt repayment.²⁰⁵ One study suggested that NHSC providers accounted for the majority of significant increases in behavioral healthcare providers in rural areas of the country between 2013 and 2017 and that 61% of mental and behavioral healthcare providers continued to practice in designated HPSAs after their four-year NHSC commitment.²⁰⁶ This program has not been evaluated for impact on suicide, but it addresses access to care, which is a critical component and protective factor for suicide prevention.



Internet-delivered cognitive behavior therapy between a patient and therapist has been shown to significantly decrease suicidal ideation among patients with severe depression.

Increasing provider availability in underserved areas using **community mental health clinics** has also shown some relationship to preventing suicides in communities in the U.S. and in international studies. In a retrospective study examining the availability of mental health clinics and suicide rates in the U.S., the number of community mental health clinics decreased by 14% from 2014 to 2017, while suicides increased by almost 10%. Statistical models controlling for other variables suggested that most of the increase could be attributed to the reduction in community mental health clinics.²⁰⁷ Rates of hospitalizations for suicide attempts decreased, but suicide rates did not decrease in a study of community mental health

clinics established to increase service availability across municipalities in Brazil.²¹³

Provide rapid and remote access to help

A systematic review of TMH services (country locations not stated) found that services rated as high or good quality were effective in reducing symptoms in patients with disorders such as depression, schizophrenia, and substance use.²⁰⁸ Mohr and colleagues conducted a meta-analysis examining the effect of psychotherapy delivered specifically via telephone and found that it significantly reduced depressive symptoms and resulted in lower attrition rates (country locations not stated).²⁰⁹

As part of **telemental health**, synchronous clinical video telehealth (CVT) may be increasing. Patients can receive therapy or medication management via a variety of video conferencing tools using CVT.²¹⁰ CVT was employed during the COVID-19 pandemic due to

temporary loosening of federal and state regulations. A meta-analysis of 21 CVT studies specifically for populations of rural areas showed initial evidence that it can be used to manage suicide risk by providing screening, treatment, and safety planning remotely.⁹⁴

Another growing method of providing rapid and remote access to services is through **mobile applications** (apps) where brief interventions occur on mobile phones. Evidence in a comparative effectiveness trial of three mobile apps for depression showed improvement in symptoms in individuals with moderate depression.²¹¹ Similarly, **internet-delivered cognitive behavior therapy** between a patient and therapist has been shown to significantly decrease suicidal ideation among patients with severe depression (U.S. and Ireland).^{211,212}

Create safer suicide care through systems change

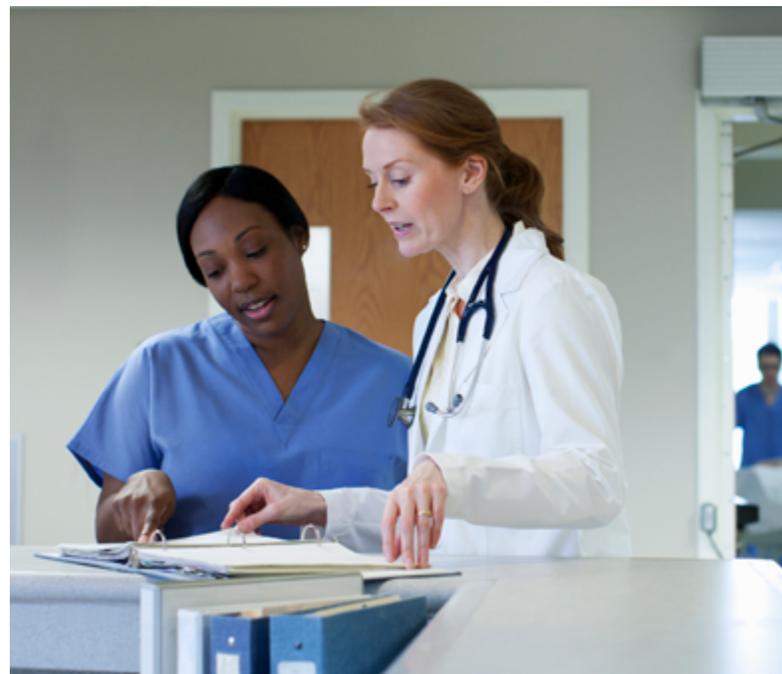
Zero Suicide seeks to eliminate suicide among patients engaged with health systems. The Henry Ford Health System (HFHS) implemented a program that screened and assessed each behavioral health patient for suicide risk and implemented coordinated, continuous follow-up care systemwide.²¹³ The Zero Suicide model was derived from the HFHS program and other models of health systems change to improve suicide care, as detailed in the [Suicide Care in Systems Framework](#) from the Action Alliance. An examination of the impact of the program found a dramatic and statistically significant decrease in the rate of suicide between the baseline years, 1999 and 2000, and the intervention years, 2002–2009. The suicide rate fell by 82% during this time period.^{213,214} Specifically, while the rate of suicide in the general Michigan population increased over the period, the suicide rate significantly decreased over time among HFHS members who received mental health specialty services.²¹⁵ Further, the suicide rate increased for HFHS members who accessed only general medical services as opposed to specialty mental health services.²¹⁵

Based on these results, the Zero Suicide model was developed, incorporating seven components (lead, train, identify, engage, treat, transition, improve) of

a quality improvement model, to transform the way health systems care for people with suicidal thoughts and behaviors. Studies in Australia and the U.S. have shown the effectiveness of the Zero Suicide model in reducing suicide attempts and ideation.^{216,217}

Future Directions

Access to mental health and substance use disorder treatment services is critical for suicide prevention. Unfortunately, many people at risk for suicide do not meet criteria for these treatments, delay treatment, or do not seek treatment.²¹ Suicide prevention efforts that focus on the above approaches can support people at risk and help prevent risk in the first place. Access to care also relies on the cultural relevance of the care, and additional information is needed on how cultural adaptations improve access and utilization of suicide care. Reaching out to people through other methods, including primary care and community outreach as described in the *Identify and Support People at Risk* chapter, can also be beneficial. More methods that utilize existing medical providers in the service of suicide prevention are also supported in the literature and growing in practice.





Promote Healthy Connections

Rationale

Connectedness and social capital together may protect against suicidal behaviors by decreasing isolation and encouraging adaptive coping behaviors.

Sociologist Emile Durkheim theorized in 1897 that weak social bonds, or lack of connections, were among the chief causes of suicidality.²¹⁸ Connectedness is the degree to which an individual or group of individuals are socially close or interrelated or share resources with others. Social connections can be formed within and between multiple levels of the social ecology, for instance, between individuals such as peers, neighbors, and co-workers; families; schools; neighborhoods; workplaces; faith communities; cultural groups; and society as a whole.¹²⁵ Literature consistently depicts social connection and school connectedness as protective factors against physical and psychological disorders, all causes of mortality, and suicidal ideation and attempts.^{219,220} Those who are more socially connected also report greater well-being and life satisfaction.²²¹ The quality of connections and the social norms of the group are important components to consider. For example, unhealthy social norms within a group could constrain individual group members' behaviors, beliefs, and identities.²²²

Social capital is related to connectedness and refers to a sense of trust in one's community and neighborhood, social integration, and also the availability of and participation in social organizations.^{223,224} Ecological cross-sectional and longitudinal studies have examined the impact of aspects of social capital on depression symptoms, depressive disorder, mental health more generally, and suicide. Existing studies, though limited, suggest a positive association between social capital (as measured by social trust and community/neighborhood engagement) and improved mental health.^{225,226}

Connectedness and social capital together may protect against suicidal behaviors by decreasing isolation; encouraging adaptive coping behaviors; and increasing belongingness, personal value, and worth to help build resilience in the face of adversity. Connectedness and social capital can also provide individuals with better access to formal supports and resources, mobilize communities to meet the needs of their members, and provide collective primary prevention activities to the community as a whole.²²⁷ Connection to a group in which members reinforce healthy behaviors may be protective.²²⁸ Evidence that some social ties may increase an individual's risk for suicidal behavior,²²⁹ however, is also consistent with Durkheim's formulation that connections and norms within relationships influence suicide risk in positive and negative ways.

Finally, schools can be especially well-suited to provide connectedness interventions that reach youth. Rich literature supports the association between school connectedness and reduced self-report of suicidal ideation or suicide attempt.²²⁰ Increased school connectedness is associated with reduced reports of suicidal thoughts and behaviors across adolescents, including adolescents who identify as sexual minorities, as well as other individuals including those residing in communities with increased risk of suicide and those experiencing physical

abuse, sexual abuse, and/or bullying.²²⁰ The research suggests that school psychologists and other student support personnel have an important role to play in facilitating school connectedness.²²⁰

Approaches

Promoting healthy connections among individuals and within communities through modeling healthy peer norms and enhancing community engagement may protect against suicide.

Promote healthy peer norms

This approach seeks to normalize protective factors for suicide, such as help-seeking, reaching out, and adaptive coping. Healthy peer norms can be achieved through leveraging the influence that members of natural social networks have on each other day to day and can be used to shift group-level beliefs and promote positive social and behavioral change. These approaches typically focus on youth and are delivered in school settings, but they have also been implemented in community and military settings.^{228,230}

Peer support programs that connect individuals with mental health and substance use disorders with peers that have lived experience can facilitate a sense of connectedness and belonging. Peer support is provided by individuals who have demonstrated success in their recovery process and help others experiencing similar situations. Peer support workers help individuals become and stay engaged in the recovery process through shared understanding, respect, and mutual empowerment.²³¹

Engage community members in shared activities

Community engagement is an aspect of social capital.²³² Community engagement approaches may involve residents participating in a range of activities, including religious activities, community clean-up and greening activities, and group physical exercise. These activities provide opportunities for residents to become more involved in the community and to

connect with other community members, organizations, and resources. Participation results in enhanced overall physical health, reduced stress, and decreased depressive symptoms, thereby reducing risk of suicide.

Potential Outcomes

Potential outcomes include increases in:

- ▶ healthy coping attitudes and behaviors,
- ▶ referrals for youth in distress,
- ▶ help-seeking behaviors among youth and adults, and
- ▶ positive perceptions of adult and peer support.

Potential outcomes may also include reductions in feelings of social isolation.

Evidence

Current evidence suggests several positive benefits of healthy peer norms and community engagement activities.

Promote healthy peer norms

Evaluations show that programs such as [Sources of Strength](#) can improve school norms and beliefs about suicide that are created and disseminated by student peers. A randomized controlled trial of Sources of Strength conducted with 18 high schools (6 metropolitan, 12 rural) found that the program improved adaptive norms regarding suicide, connectedness to adults, and school engagement.⁵⁰ Peer leaders were also more likely than controls to refer a friend at risk for suicide to an adult. For students, the program resulted in increased perceptions of adult support for youth at risk for suicide, particularly among those with a history of suicidal ideation, and the acceptability of help-seeking behaviors. Trained peer leaders also reported a greater decrease in maladaptive coping attitudes compared with untrained leaders.⁵⁰



Peer support programs that connect individuals with mental health and substance use disorders with peers that have lived experience can facilitate a sense of connectedness and belonging.

The **Wingman-Connect** program is an adaptation of Sources of Strength as an upstream suicide and depression prevention program for a general, non-clinical Air Force population. *Wingman-Connect* trains all unit members together to incorporate skills into unit culture and build cohesion and shared purpose. Group skill building within the natural organizational units emphasizes social bonds, meaning in work, and managing career and personal stressors. In a cluster randomized clinical trial, personnel in technical training classes assigned to

Wingman-Connect reported lower suicidal ideation severity and depression symptoms at one month post-intervention and lower depression symptoms at one and six months post-intervention when compared to a control group that participated in a stress management program.²²⁸ Participants' perception of belonging to a more cohesive class with healthier norms accounted for a significant portion of the program's impact on reducing suicidal ideation and depression symptoms.²²⁸

Engage community members in shared activities

Community building programs may also have mental health effects. A **vacant lot greening initiative** was undertaken in Philadelphia between 1999 and 2008 where local residents and community members worked together to clean up and plant flowers and



trees in 4,436 lots (or 7.8 million square feet) in four areas of the city.²³³ Researchers found significant reductions in community residents' self-reported level of stress, a risk factor for suicide, and engagement in more physical exercise, a protective factor for suicide, than residents in control vacant lot areas. There is some evidence for other cross-cutting benefits including fewer firearm assaults and less vandalism.²³³⁻²³⁵

Future Directions

Promising practices emphasizing connection with peers in adult populations may become more common ways of preventing suicide in the future. For example, the **Peers for Valued Living** (PREVAIL) program incorporates peers with lived experience to provide support to adults who are at high risk of suicide immediately after an inpatient psychiatric hospitalization. Initial research has supported the acceptability, feasibility, and fidelity of the intervention.²³⁶

Men's Shed presents another promising practice to promote social connectedness among adult peers.²³⁷ *Men's Shed* started in Australia and spread to the United Kingdom and the U.S. It provides a communal space for older men to socialize, learn new skills, and engage in practical activities with other men, such as woodworking. One preliminary study suggests increased social connectedness, health, and well-being among men participating in *Men's Shed*.²³⁸ Both *PREVAIL* and *Men's Shed* focus on specific populations. Other population groups may also benefit from healthy peer norm programs that pay particular attention to cultural norms and conditions.

The COVID-19 pandemic has presented serious challenges to healthy connections among all people. The pandemic has forced people into using novel formats for engagement and connection, such as video conferencing, online chat, and mobile apps. Stack Up is a nonprofit veteran organization whose goal is to use video games to bring veterans together, using a virtual space to increase connectedness in an online peer support program.²³⁹ Stack Up created the **Stack Up Overwatch Program (StOP)** because

they recognized a need in the gaming-focused online community. This suicide prevention and crisis intervention program is delivered entirely through the internet by trained peers using a gaming platform text and voice chat feature. The program combines elements of virtual gaming communities, veteran mental health, and community-based peer support and provides an innovative format for implementing a suicide prevention program. Another program by [Objective Zero Foundation](#) utilizes mobile application technology for peer-to-peer support to enable global connection of service members, veterans, family members, and caregivers.²⁴⁰

The app provides free 24/7 access to online health and wellness resources, peer-to-peer support, and volunteer opportunities to users.

Finally, the pandemic has raised concerns about the mental well-being of children, particularly those with pre-existing behavioral health conditions.²⁴¹ Additional research is warranted regarding strategies to engage children, help them connect with community members and community resources, and prevent suicide.^{242,243} There is still a lot to learn about changes in connectedness during COVID-19 and at other times of infrastructure disruptions.





Teach Coping and Problem- Solving Skills

Life skills are important in protecting individuals from suicidal behaviors and in reaching key developmental milestones that impact psychological health.

Rationale

Building life skills prepares individuals to successfully tackle everyday challenges and adapt to stress and adversity. These skills encompass many concepts but most often include coping and problem-solving skills, emotional regulation, conflict resolution, and critical thinking. Life skills are important in protecting individuals from suicidal behaviors and in reaching key developmental milestones that impact psychological health, such as success at school and work.^{230,244}

Suicide prevention programs focusing on life skills training are drawn from social cognitive theories.²⁴⁵ They suggest that suicidal behavior is influenced by a combination of direct learning and environmental and individual characteristics. Teaching and providing youth with both education and skills to manage everyday challenges and stressors is an important developmental component to suicide prevention. It can help prevent suicide risk factors such as adverse childhood experiences (abuse and neglect), substance use, and more.^{246,247} Acquiring coping and problem-solving skills also occurs and is beneficial in adulthood. Adults often face new and challenging life events requiring the need for education, coping and problem-solving skills essential for maintaining well-being and protecting against suicide. For example, healthy parent-child relationships can promote safe, stable, nurturing family environments and relationships.²⁴⁸

Approaches

Programs that teach coping and problem-solving could include lessons on social-emotional skills, parenting skills and family relationship building, and resilience.

Support social-emotional learning (SEL) programs

This approach focuses on developing and strengthening communication and problem-solving skills, emotional regulation, conflict resolution, and coping skills in youth. Such programs are designed to foster the development of five interrelated sets of cognitive, affective, and behavioral competencies: self-awareness, self-management, social awareness, relationship skills, and responsible decision-making.²⁴⁹ These approaches are typically delivered to all students in a particular grade or school. However, some programs also focus on groups of students considered to be at increased risk for suicide, including those who have experienced ACEs. Opportunities to practice and reinforce skills are an important part of programs that work.²⁵⁰

Teach parenting skills to improve family relationships

This approach provides caregivers with support and is designed to strengthen parenting skills, enhance positive parent-child interactions, and improve children's behavioral and emotional skills and abilities.²⁵⁰ Programs are typically designed for parents or caregivers with children in a specific age range and can

be self-directed or delivered to individual families or groups of families. Some programs have sessions primarily with parents or caregivers, while others include sessions for parents or caregivers, youth, and the family. Specific program content typically varies by the age of the child but often has consistent themes of child development, parent-child communication and relationships, positive parenting and problem-solving skills, and youth interpersonal and problem-solving skills.²⁵¹

Support resilience through education programs

This approach provides adults with skills to effectively manage new and challenging life events, such as going to college, entering the job market, or becoming a parent. Programs are typically time-limited with an emphasis on education, resiliency, emotion regulation, coping skills, and problem-solving skills. Specific program content varies by life circumstances, but all programs emphasize the didactic nature of skill building and interactive practice exercises. Education programs in adulthood are usually provided by universities for students, employers for their employees, or healthcare providers.

Potential Outcomes

Potential outcomes include improvements in:

- ▶ social competence and emotion regulation skills,
- ▶ problem-solving and conflict management skills, and
- ▶ help-seeking behavior.

They may also include reductions in:

- ▶ stigma surrounding mental health concerns,
- ▶ depression, anxiety, conduct problems, and substance use,
- ▶ suicidal ideation, and
- ▶ suicide attempts.

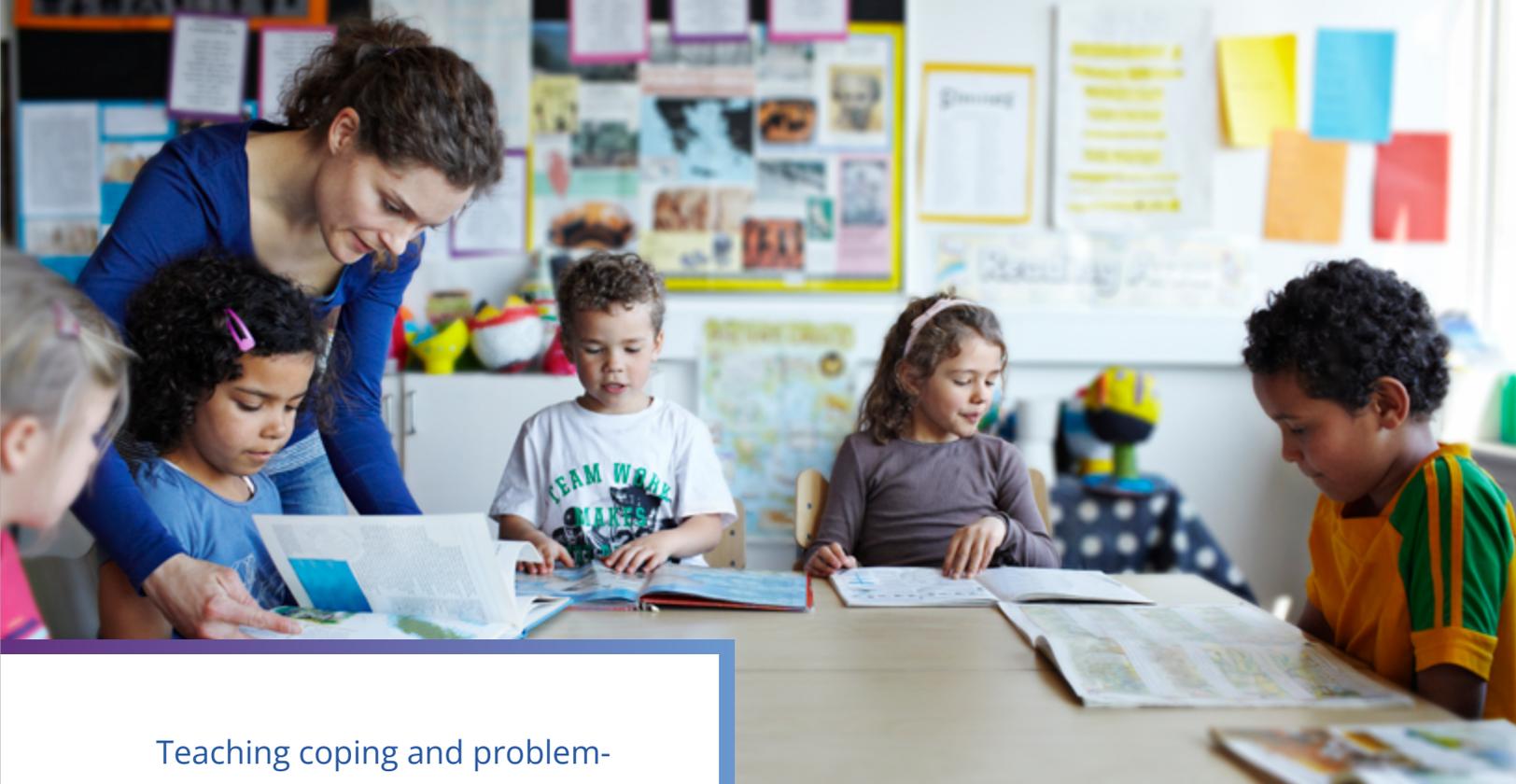
Evidence

Several SEL programs, parenting and family relationship programs, and resilience and education programs in adulthood have improved resilience and reduced risk factors for suicide, such as depression, internalizing behaviors, and substance use.²⁵²

Support social-emotional learning programs

SEL programs are associated with positive outcomes including reduced emotional distress, improved well-being, and better social and academic adjustment, based on studies from the U.S. and other countries.²⁵³⁻²⁵⁶ SEL components related to suicide prevention and help-seeking reduce stigma and increase help-seeking behavior. SEL programs provide children and youth with skills to resolve problems in relationships, in school, and with peers and help youth address other negative influences such as substance use associated with suicide.²³⁰

The [Youth Aware of Mental Health Program](#) (YAM) is a universal school-based program for teenagers ages 13–17. It uses interactive dialogue, small group discussions, and role-playing to teach adolescents about themes related to mental health; self-help advice; stress and crisis, depression, and suicidal thoughts; helping a friend in need; and asking for advice/help. YAM also includes a student booklet that provides information about the risk and protective factors associated with suicide and education about depression and anxiety. YAM is designed to enhance adolescents' problem-solving skills for dealing with adverse life events, stress, school concerns, and other problems. A cluster randomized controlled trial conducted in 168 schools in 10 European Union countries showed that students in schools randomized to YAM were significantly less likely to attempt suicide or have severe suicidal ideation at the 12-month follow-up when compared with students in control schools, which received educational materials and care as usual. The relative risk of youth suicide attempts among the YAM group was reduced by over 50% and relative risk related to severe suicidal



Teaching coping and problem-solving skills can help children deal with issues in relationships, in school, and with peers in a healthy way.

ideation also fell by about 50%.²⁵⁷ These reductions are partially attributed to reported changes in coping strategies. The results also suggest that socialization occurring during the YAM program may play a major role in its efficacy.²⁵⁸

Another example is the [Good Behavior Game](#) (GBG), a classroom-based program for elementary school children ages 6–10. The program uses a team-based behavior management strategy that promotes good behavior by setting clear expectations for good behavior and consequences for maladaptive behavior. The goal of GBG is to create an integrated classroom social system that is supportive of all children being able to learn with little aggressive or disruptive behavior.²⁵⁹ An evaluation of GBG indicated that first-graders in the first cohort in GBG reported half the adjusted odds of suicidal ideation and suicide attempts when assessed approximately 15 years later, compared with peers who had been in a standard classroom setting. In the second cohort of

GBG, neither suicidal ideation nor suicide attempts were significantly different between GBG and the control interventions.²⁵⁹ This result may have been due to a lack of implementation fidelity including less mentoring and monitoring of teachers. GBG was also associated with reduced risk of later substance use and other suicide risk factors among the first cohort. Results for the second cohort were generally smaller but in the desired direction.²⁶⁰ Students' positive integration into peer groups partially explains the relationship between GBG and reduction of risk for later suicide attempts, particularly for more disruptive students.²⁶¹

International research provides additional support for SEL programs. The [Aussie Optimism Program](#) is a universal prevention strategy designed to reduce mental health concerns among children in sixth and seventh grade by teaching social, emotional, and cognitive skills including identifying feelings, decision-making, and coping skills. A randomized controlled trial examining the efficacy of the program found significantly greater increases in pro-social behavior and lower rates of suicidal ideation compared with control groups.²⁶²



Signs of Suicide (SOS) is a universal school-based suicide prevention program that uses psychoeducation to modify behavior in middle and high school students. It also includes screening for elevated depression and substance use disorders. SOS is not an SEL program, but it uses psychoeducation as the primary tool for training and skill building. The program is designed to:

- ▶ increase understanding that major depression is an illness,
- ▶ improve awareness of the link between suicide and depression,
- ▶ improve attitudes toward intervening with peers showing signs of depression and suicidal ideation, and
- ▶ increase help-seeking behavior for students personally experiencing depression and suicidal thoughts.²⁶³

A randomized controlled trial found that individuals completing the program were 64% less likely to report a suicide attempt within the past three months when compared with the control group, but the program was not associated with changes in suicidal ideation.²⁶³

Teach parenting skills to improve family relationships

Parenting and family skills training approaches have well-established impacts in reducing common risk factors for suicide²⁶⁴ and strengthening family bonds, a protective factor against suicide.²⁶⁵ Several programs have shown promising impacts on reducing suicidal thoughts and behaviors. **The Incredible Years (IY)** is a comprehensive group training program for parents, teachers, and children. It is designed to reduce conduct problems and substance use (two important suicide risk factors in youth) by improving protective factors such as responsive and positive parent-teacher-child interactions and relationships, emotional self-regulation, and social competence.²⁵⁰ The program includes 9–20 sessions offered in community-based settings, such as religious centers, recreation centers, mental health treatment centers, and hospitals. Several studies have demonstrated the effect of the IY program on reducing internalizing symptoms, such as anxiety, depression, and child conduct problems.²⁶⁶⁻²⁶⁸ The program is also

associated with improved problem-solving and conflict management, which were skills the participants were able to maintain at the one-year follow-up.²⁶⁶⁻²⁶⁸ The program demonstrated greater benefits in mother-rated child internalizing symptoms, when compared with the waitlisted control group.²⁵⁰

The [Strengthening Families Program](#) involves sessions for parents, youth, and families to teach parenting skills, children’s social skills, and family life skills. The goals include:

- ▶ improving parents’ skills for disciplining, managing emotions and conflict, and communicating with their children,
- ▶ promoting youths’ interpersonal and problem-solving skills, and
- ▶ creating family activities to build cohesion and positive parent-child interactions.

The premise of the program is that developing these skills for both parents and children will reduce internalizing behavior and adolescent substance use, two important risk factors for suicide.²⁶⁹ *Strengthening*

Families has significantly decreased externalizing behaviors, such as aggression, alcohol use, and drug use among youth participants, as well as reduced depression, alcohol use, and drug use among participating families.²⁶⁹

Other parenting skills and family programs initially developed to prevent substance use or other behavioral problems have shown impacts on reducing likelihood of suicidal thoughts and behaviors based on long-term follow-up of participants.²⁷⁰ The [Family Check-Up](#), for example, is a multi-level intervention that integrates assessment with motivation-enhancement strategies and tailored intervention goals to meet the needs of each family. Long-term follow-up of participants in a school-based version of *Family Check-Up* beginning in sixth grade found reduced risk for suicidal thoughts and behaviors through late adolescence.²⁷¹

Parenting and family skills training programs have also been developed and tailored for family-specific situations. The [Family Bereavement Program](#)



combines parenting and youth skill building in 12 sessions for children who have experienced the death of a parent. A randomized trial that contrasts the program with a self-study curriculum found short-term positive impacts on children's coping skills and behavioral and emotional well-being. Participants were up to 5 times less likely to report suicidal thoughts and/or behaviors at the 6-year and 15-year follow-up.²⁷²

Familias Unidas is a prevention program focused on parenting that is culturally specific to Latino families going through acculturation. The program utilizes eight multi-family group visits and four family visits with a focus on parent-child communication and effective discipline. Preliminary evidence found lower rates of suicide attempts for youth reporting poor parent-child communication who were randomized to *Familias Unidas*.²⁷³

After Deployment Adaptive Parenting Tools (ADAPT) is a parenting program for active duty military members, veterans, first responders, and immigrant and refugee families with school-aged children.²⁷⁴ ADAPT provides training in emotional regulation and parenting skills to parents who have experienced stress and/or trauma in their lives and/or work. Given the suicide risk associated with poor parental mental health and/or suicidality on children, ADAPT seeks to improve the parents' mental health, with the hope to subsequently reduce suicidal ideation in children. ADAPT has been found to significantly improve parenting locus of control, strengthen emotion regulation skills, and reduce suicidal ideation in parents when compared with those assigned to the control condition.²⁷⁴

Support resilience through education programs

Major life events commonly occur in adulthood, requiring new or refreshed coping and problem-solving skills to manage stress and maintain resilience. Primary prevention programs to boost resilience have been examined in first-year college students. A four-week resilience training program was tested in a pragmatic clinical trial. The program taught skills

related to value-driven behavior, mindfulness, and thinking about things using a growth mindset. First-year students completing the **resilience training program** reported significantly lower self-reported depression and perceived stress compared with first-year students in the control condition.²⁷⁵

Future Directions

The continued stigma that surrounds talking about mental health and suicide is a major barrier to implementing coping and problem-solving skills groups despite the benefit to individuals across the lifespan.¹⁸⁵ There is also a need for additional program development and research to ensure that coping and problem-solving skills are useful for a wide range of individuals taking into account gender, race and ethnicity, socioeconomic status, sexual orientation, gender identity, and disability status.²⁷⁶

Although promising, additional trials and replication of findings are needed to confirm benefits of other college and adult programs. One study developed a two-semester-long college course titled **Risk and Resilience in Urban Teens** for college students to complete and receive course credit. The first semester provides didactic training in evidence-based skills to manage stress and boost resilience. The second semester is devoted to service learning in which college students teach stress reduction and coping skills to high school students in the community. Compared with a control group of students from a different course, students completing the course reported significantly lower perceived stress, engaged in more coping skills, and experienced fewer dysfunctional attitudes such as "If a person asks for help, it is a sign of weakness" or "If I fail at my work, then I am a failure as a person." The study group maintained the positive intervention effects over the second semester.²⁷⁷

Occupational stress in adulthood is associated with risk factors for suicide, including anxiety, depression, and post-traumatic stress disorder.²⁷⁸ Programs that



The continued stigma that surrounds talking about mental health and suicide is a major barrier to implementing coping and problem-solving skills groups.

teach skills like problem-solving, self-regulation, and emotional awareness have been implemented across a diverse range of occupations including nurses, first responders, sales managers, and administrative staff.²⁷⁹ A systematic review found that these programs can reduce negative mental health outcomes including depression and anxiety.²⁷⁹ Some occupational programs are specifically developed to reduce suicide risk and improve prevention (see *Creating Protective Environments* chapter).

Finally, parenthood is another life period with many new challenges and stressors. Perinatal mood and anxiety disorders are the number one complication

of pregnancy and childbirth and are associated with maternal depression, anxiety, and increased risk of depression and anxiety in children.²⁸⁰ **Perinatal education and training programs** have been developed to increase coping skills and problem-solving abilities. One such program in Hong Kong was tested by adding three additional one-hour sessions to a standard childbirth education program. These sessions included an overview of stress, expected emotional changes during the perinatal period, coping skills training related to parenting, and problem-solving and decision-making strategies specific to childcare and parenting. Women who received this training reported significantly lower levels of depressive symptoms from baseline to six months postpartum and significantly higher learned resourcefulness from baseline to six weeks postpartum when compared with the control group.²⁸¹



Identify and
Support People
at Risk

Rationale

Identifying and supporting people at risk for suicide is critical to suicide prevention. Groups disproportionately impacted by suicidal thoughts, attempts, and/or suicide include:

- ▶ males (suicide),
- ▶ females (suicide attempts),
- ▶ middle-aged and older adults (suicide),
- ▶ people living with a mental health disorder,
- ▶ people who have previously attempted suicide,
- ▶ people with a history of non-suicidal self-injury,
- ▶ veterans and active-duty military personnel,
- ▶ individuals who are institutionalized,
- ▶ people with exposure to adverse childhood experiences, violence, or traumatic stress,
- ▶ people experiencing unstable housing,
- ▶ individuals with substance use disorders,
- ▶ individuals of sexual and gender minority status,
- ▶ some displaced persons or refugees,
- ▶ people with lower incomes, and
- ▶ some racial and ethnic groups, including non-Hispanic American Indian or Alaska Native, non-Hispanic Black, and non-Hispanic White adolescents and young adults.^{27,183,282-294}

Different methods are needed for interventions and treatments that are culturally sensitive and tailored to meet the needs of populations.

Supporting people at risk requires proactive case finding and effective response, crisis intervention, and evidence-based treatments. However, improving and expanding services does not guarantee those who need the services the most will utilize them. For example, some people living in communities experiencing disadvantage may face social and economic issues that can adversely affect their ability to access supportive services.^{195,295} Different methods are needed for interventions and treatments that are culturally sensitive and tailored to meet the needs of populations disproportionately impacted by suicide and suicide risk. Key priorities are developing optimal ways of identifying individuals at risk, customizing services to make them more accessible (such as internet-based or mobile technology telehealth services when appropriate), and engaging people in evidence-based care,^{213,296,297} especially during times of infrastructure disruption like the COVID-19 pandemic.^{296,298,299}

Approaches

Gatekeeper training and suicide risk screening and assessment are two approaches that can identify and help people at increased suicide risk. Crisis response interventions, proactive planning and outreach interventions, and therapeutic approaches are intervention and treatment approaches to support disproportionately affected populations.

Train gatekeepers

Gatekeepers can come from all sectors of the community. They can help prevent suicide by being trained to identify people who may be at risk for suicide or suicidal behavior and to respond effectively by facilitating referrals to treatment and other support services. Gatekeepers could include peers, teachers, coaches, clergy, emergency responders, primary and urgent care providers, and others. This training may be implemented in a variety of settings to identify and support people at risk.³⁰⁰

Respond to crises

These approaches take place in real time when a crisis occurs and provide support, risk assessment, and referral to emergency services or treatment. Typically, a person in crisis (or a friend or family member of the person at risk) is connected to trained volunteers or professional staff via telephone hotline, online chat, text messaging, or in person.³⁰¹ Crisis response interventions are intended to reduce key risk factors for suicide, including feelings of depression, isolation, and hopelessness, and promote subsequent mental healthcare utilization.³⁰² Crisis response interventions can put space or time between an individual who may be considering suicide and harmful behavior.

Plan for safety and follow-up after an attempt

Preventing reattempts includes safety and crisis response plans, follow-up contact, and brief contact interventions that use diverse modalities such as home visits, mail, telephone, or text messages. These strategies are designed to help individuals get treatment when they have recently attempted suicide. They can also increase adherence to treatment and promote continuity of care.^{303,304}

Provide therapeutic approaches

These approaches can increase retention in treatment and decrease suicide risk by:

- ▶ developing integrated care teams (such as linkage between primary care and behavioral healthcare),
- ▶ promoting collaboration between patient and therapist or care manager, and
- ▶ engaging and motivating patients.³⁰⁵⁻³⁰⁷

Therapeutic approaches include various forms of suicide-focused psychotherapy delivered by clinically trained providers. They address underlying mental health disorders and suicide risk factors such as poor problem-solving and emotional regulation skills. Treatment usually takes place in a one-on-one or group format between patients, family members, and clinicians. It can vary in duration from several weeks to ongoing therapy, as needed. It appears to be particularly important for children and adolescents to enhance protection and support through work with families or other safe adults within the youth's environment. More detailed information about identifying and supporting young people at risk for suicide can be found in [comprehensive guide from SAMHSA](#).

Potential Outcomes

Potential outcomes include:

- ▶ enhancements in care transitions,
- ▶ increases in treatment engagement and adherence, and
- ▶ improvements in coping skills.

Potential outcomes can also include reductions in:

- ▶ depression and feelings of hopelessness,
- ▶ suicidal ideation,
- ▶ suicide attempts and reattempts, and
- ▶ suicide rates.



Evidence

The current evidence suggests that identifying people at risk for suicide, engaging individuals in suicide-focused treatment, and engaging in crisis care as needed can reduce risk factors for suicide and ultimately suicide deaths.

Train gatekeepers

There are many gatekeeper trainings available with varying degrees of evidence as well as duration of program effects. [Applied Suicide Intervention Skills Training](#) (ASIST) is a widely implemented training program that helps hotline counselors, emergency workers, and other gatekeepers identify and connect with individuals with suicidal thoughts and/or behaviors, understand their reasoning for living and dying, and assist with safely connecting those in need to available resources.^{308,309} Researchers evaluated the ASIST training in a randomized controlled trial using data from 1,410 individuals experiencing suicidal

thoughts who called 17 National Suicide Prevention Lifeline centers. The researchers found that callers who spoke with ASIST-trained counselors reported feeling significantly less depressed, less suicidal, less overwhelmed, and more hopeful by the end of their call when compared with callers who spoke to counselors not trained with ASIST.^{302,309} ASIST training did not result in more comprehensive suicide risk assessments than usual care training.^{302,309}

Gatekeeper training has been a primary component of the [Garrett Lee Smith \(GLS\) Suicide Prevention Program](#), which has been implemented in 50 states and 50 tribes. A multi-site evaluation assessed the impact of community gatekeeper training as a part of GLS implementation on suicide attempts and deaths among young people ages 10–24. Counties that implemented GLS trainings had significantly lower youth suicide rates up to two years following the training when compared with similar counties that did not offer GLS trainings.^{310,311}



There is emerging literature on crisis response services that utilize mobile technology to provide real-time crisis support.

Other examples of widely implemented gatekeeper training programs include [Question, Persuade, and Refer](#) (QPR), [Mental Health First Aid](#) (MHFA), and [teen Mental Health First Aid](#) (tMHFA). QPR is an hour-long training that aims to reduce stigma and increase knowledge about suicide risk factors, warning signs, and available resources. QPR training also focuses on skill building to improve gatekeepers' abilities to ask individuals about their suicidal thoughts or plans and persuade them to seek help. QPR training results improve gatekeeping skills like inquiring about suicidal ideation and referring individuals for treatment (studies in U.S. and Australia).^{312,313} MFHA is a skills-based program that teaches participants about mental health (studies in multiple countries).³¹⁴ MHFA was developed for community members, and tMHFA was adapted specifically for adolescents. Both programs focus on reducing stigmatizing attitudes and increasing mental health literacy.³¹⁴ In addition, tMHFA promotes

supportive behaviors toward peers and help-seeking from trusted adults.³¹⁵ Both programs were effective at improving self-efficacy related to helping individuals at risk and increasing the likelihood of engaging in gatekeeping behaviors (studies in multiple countries).³¹²⁻³¹⁷

Most studies of gatekeeper training demonstrate that these programs increase knowledge, skills, and self-efficacy or confidence in the gatekeeper's ability to identify an individual who is at risk and provide support in the short term. The long-term effects of these programs are unclear and little is known regarding how to improve the sustainability of these outcomes in those who are trained.³¹⁸

Respond to crises

The [National Suicide Prevention Lifeline \(the Lifeline\)](#), now called [988 Suicide & Crisis Lifeline](#), and Crisis Text Line provide crisis response intervention. An evaluation of the Lifeline effectiveness to prevent suicide included 1,085 suicidal individuals who called the hotline and completed a standard risk assessment for suicide

and 380 of those people who completed a follow-up assessment between 1 and 52 days after their call (mean = 13.5 days). Researchers found that over half of the initial sample were seriously considering suicide and had a suicide plan when they called. Significant decreases in psychological pain, hopelessness, and intent to die occurred during the phone call, with sustained decreases in psychological pain and hopelessness up to three weeks later.³¹⁹ These results are promising and underscore the importance of continued care following the call.^{319,320} It is unclear whether these services lead to increased use of treatment services or reduced future suicidal thoughts and behaviors.³⁰²

There is emerging literature on crisis response services that utilize mobile technology to provide real-time crisis support. Two examples include the [Virtual Hope Box](#) (VHB) and [Jaspr Health](#). VHB is a smartphone application that:

- ▶ reminds individuals of positive experiences,
- ▶ reminds individuals about reasons for living (such as messages from loved ones),
- ▶ provides contact information for people who care about them and are available in a time of crisis, and
- ▶ supports coping resources (such as relaxation exercises).

A randomized controlled trial with veterans who experienced suicidal ideation and who used VHB for 12 weeks reported significantly greater improvements in their ability to cope with unpleasant emotions when compared with their peers who received printed materials about coping with suicidal thoughts.³²¹

Jaspr Health is a tablet-based application that delivers four evidence-based practices through an artificial intelligence-powered virtual guide to acutely suicidal individuals in an emergency department. The virtual guide conducts a comprehensive suicide assessment, discusses the importance of lethal means safety, and generates a crisis stabilization plan with the patient. Psychoeducation videos delivered by people with lived experience on what to expect in the emergency department and when returning home, coping with shame, strategies for staying well, and

messages inspiring hope are also included. Patients who used the Jaspr Health app reported significant decreases in distress and agitation and significant increases in learning to cope effectively with current and future suicidal thoughts compared with patients who received care as usual.³²² Emerging literature suggests that opportunities to offer personalized and just-in-time interventions when it is most needed to prevent the escalation of potentially dangerous and lethal suicidal behaviors may become more common as wearables and mobile devices work together to monitor key risk variables in real time.³²³

Plan for safety and follow-up after an attempt

Interventions that support engagement and safety during care transitions are critical to suicide prevention. The Action Alliance outlines [comprehensive best practices](#) in care transitions for individuals with suicide risk. **Safety planning** is one example of



proactive planning. Safety planning involves outlining what to do during a crisis, including steps for identifying personal warning signs, using coping strategies, activating social support, and accessing professional services. The effectiveness of safety planning was examined through a randomized controlled trial of active-duty soldiers at risk for suicide. Soldiers who received a crisis response plan (a form of safety planning) experienced faster reduction in suicidal ideation and were significantly less likely to make a suicide attempt during a six-month follow-up period than soldiers who received treatment as usual.³²⁴ Safety planning is a key component of the **Safety Planning Intervention with structured follow-up (SPI+)** that is widely used across the Veterans Health Administration. SPI+ combines strategies for reducing suicidal behavior including coping strategies and counseling to reduce access to lethal means with a minimum of two follow-up telephone calls. Patients who presented to Veterans Affairs emergency departments for suicide-related concerns and received SPI+ were half as likely to exhibit suicidal behavior and more than twice as likely to attend treatment during a six-month follow-up period compared with patients who received care as usual.³²⁵

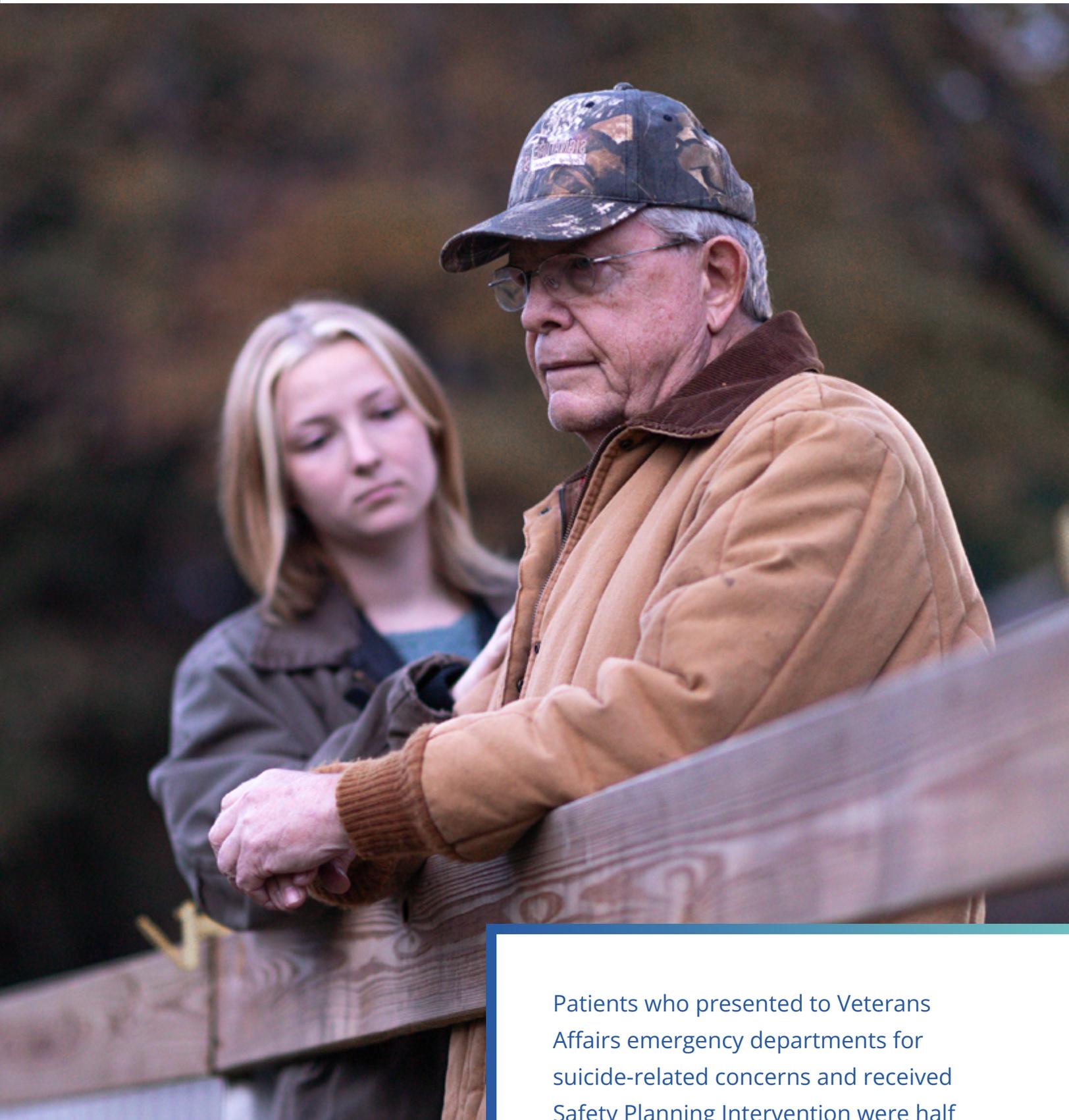
Follow-up contact and **brief contact interventions** are two examples of proactive and ongoing outreach approaches. Follow-up contact strategies use postcards, letters, text messages, and telephone calls to express care and support for patients and typically invite patients to reconnect with their provider. Contacts are made periodically. This could be monthly or every few months in the first 12 months after discharge with some programs continuing contact for two or more years.³⁰³ One meta-analysis examining interventions to prevent repeat suicide attempts in patients admitted after an emergency department visit for a suicide attempt found reductions in reattempts by approximately 17% for up to 12 months after discharge. The effects of these approaches

on reattempts beyond 12 months has not yet been demonstrated.³⁰³ A randomized controlled trial of long-term follow-up contact approaches found that patients who refused ongoing care but who were randomized to be contacted by letter four times per year had a lower rate of suicide over two years of follow-up than patients in the control group who received no further contact.³²⁶ Other studies have also indicated that post-crisis letters, coping cards, telephone calls, and text messages were protective against suicidal ideation, attempts, and suicide (studies from U.S., Iran, Taiwan, and France).^{304,327-331}

An accumulating number of brief contact interventions have shown effectiveness. The **Emergency Department Safety Assessment and Follow-up Evaluation (ED-SAFE)** is a brief intervention initiated by the emergency department staff that takes place during and after a visit related to suicidal ideation or attempt. The intervention consisted of a suicide risk screening by emergency department physicians, suicide prevention resources including a personalized safety plan, and a series of telephone calls to the individual for one year after the visit. In a clinical trial evaluating the effect of the intervention, suicide risk detection almost doubled because of suicide risk screening. Participants who received the intervention had 30% fewer suicide attempts than participants who received treatment as usual.^{332,333} Collectively, these findings highlight the utility of a multi-component screening and intervention for preventing suicide in emergency department settings.

Attempted Suicide Short Intervention Program

is another brief intervention that provides a combination of many strategies including three in-person therapy sessions, safety planning, and regular letters across 24 months. Results of a randomized controlled trial of the program in Switzerland indicated recipients had an 80% reduced risk of suicide reattempts and 72% fewer days of hospitalization when compared with individuals in the control group.^{334,335}



Patients who presented to Veterans Affairs emergency departments for suicide-related concerns and received Safety Planning Intervention were half as likely to exhibit suicidal behavior.



Cognitive Behavioral Therapy is a well-studied form of psychotherapy that focuses on changing patients' thoughts and behaviors, which reciprocally influence the other.

Provide therapeutic approaches

Improving Mood—Promoting Access to Collaborative Treatment (IMPACT) and **Prevention of Suicide in Primary Care Elderly: Collaborative Trial** (PROSPECT) are two collaborative care programs designed to prevent suicide among older primary care patients by reducing suicidal ideation and depression. IMPACT and PROSPECT create a therapeutic alliance that includes a combination of evidenced-based medication or psychosocial treatments and proactive follow-up by a depression care manager throughout treatment.^{289,336} Both programs have shown significant quality of life improvements and reduced functional impairment, depression, and suicidal ideation over 24 months of follow-up relative to patients who received care as usual.^{289,336,337}

Another example of evidenced-based therapeutic approaches is **Dialectical Behavior Therapy** (DBT),³³⁸ DBT is a multi-component therapy for individuals who may struggle with impulsivity and regulating emotions. The components of DBT include individual therapy, group skills training, between-session telephone coaching, and a therapy consultation team. A randomized controlled trial of women with recent suicidal or self-injurious behavior found those receiving DBT were half as likely to make a suicide attempt at the two-year follow-up than women receiving community treatment (23% vs. 46%, respectively) and had fewer hospitalizations for suicidal ideation.³³⁹ Similar findings were documented among adolescents receiving DBT following a recent suicide attempt. Adolescents who received DBT reported significantly lower levels of suicidal ideation and fewer suicide attempts during the six-month treatment period than did those who received individual and group supportive therapy. At the 12-month follow-up, there were no significant group differences because adolescents in the latter group also reported fewer suicide attempts over time.³⁴⁰

SAFETY is another DBT-informed cognitive behavioral family treatment approach that focuses on strengthening protective supports within the family and other social systems, skill building that leads to safer behavioral reactions to stressors, means reduction, and safety planning. Adolescents with recent suicide attempts who participated in SAFETY were significantly less likely to report experiencing a suicide attempt over the course of treatment compared with enhanced treatment as usual.³⁴¹

Cognitive Behavioral Therapy is a well-studied form of psychotherapy that focuses on changing patients' thoughts and behaviors, which reciprocally influence the other. A systematic review of 10 randomized controlled trials from multiple countries that compared CBT to treatment as usual among individuals who recently engaged in a suicide attempt found that CBT reduced the risk of repeated suicide attempts by half.³⁴² Two programs, **Cognitive Behavior Therapy for Suicide Prevention**

(CBT-SP) and **Brief CBT** (BCBT), are examples of CBT approaches that were tailored to meet the needs of individuals who have recently attempted suicide. CBT-SP uses a risk-reduction, relapse-prevention approach that includes safety plan development, skill building, psychoeducation, and an analysis of proximal risk factors and stressors such as relationship problems and school- or work-related difficulties leading up to and following the suicide attempt. CBT-SP also has family skill modules focused on family support and communication patterns as well as improving the family's problem-solving skills. A randomized controlled trial of CBT-SP found that 10-session outpatient cognitive therapy designed to prevent repeat suicide attempts resulted in a 50% reduction in the likelihood of a suicide reattempt among adults who had been admitted to an emergency department for a suicide attempt relative to treatment as usual.³⁴³ BCBT is a brief version of CBT that is focused on skill development and internal self-management. Soldiers who recently attempted



suicide or experienced suicidal ideation and participated in 12 BCBT sessions were 60% less likely to attempt suicide during the two years following treatment than their peers who received treatment as usual.³⁴⁴ **[Problem Solving Therapy](#)** (PST) is a form of CBT that has been shown to reduce suicidal ideation and hopelessness among individuals experiencing depression and distress related to problem-solving skills.^{345,346}

[Collaborative Assessment and Management of Suicidality \(CAMS\)](#) is another therapeutic framework for guiding suicide-focused assessment and treatment. The intervention's flexible approach can be used across treatment settings and clinicians' theoretical orientations. It involves the clinician and patient working together in an interactive assessment process to develop patient-specific treatment plans. Sessions are collaborative and involve continual patient input about what is and is not working to enhance the therapeutic alliance and increase treatment motivation in the suicidal patient. There are five published randomized controlled trials of CAMS (U.S. and Denmark) in which suicidal individuals were randomly assigned to CAMS or comparison treatments.³⁴⁷⁻³⁵¹ Improvements were observed across both treatment groups. However, replicated CAMS results show significant reductions in suicidal ideation, overall symptom distress, depression, and hopelessness relative to comparison care. There are promising data for decreasing suicide attempts and self-harm (Denmark),³⁴⁹ and a meta-analysis of nine CAMS trials shows that CAMS is a well-supported intervention for suicidal ideation (U.S. and multiple countries).³⁵² CAMS is currently being evaluated as part of a systems-level approach to reducing suicide risk within a National Health Service clinic that serves a population of 158,000 people in the United Kingdom.³⁵³ Efforts are also underway to develop versions of CAMS to support teenagers at high risk for suicide (CAMS-4Teens), children at high risk for suicide (CAMS-4Kids), and their families.³⁵⁴ Additionally, V-CAMS is a virtual version that uses a patient-facing avatar and electronic caring contacts to facilitate best-practice suicide prevention interventions.³⁵⁵

[Future Directions](#)

Several promising approaches are on the horizon in addition to the practices described above. Help-seeking is a key protective factor for suicide that needs additional research. More research is needed on policies and practices that help reduce stigma associated with seeking or receiving help and that protect individuals, like the ability to maintain employment.

Standardized tools such as self-report questionnaires or clinician-administered interviews can help mental health professionals, medical personnel, and others identify and evaluate people at risk. Suicide risk screening and assessment are two different methods that should be administered sequentially. Screening is a method used to rapidly identify someone who needs further evaluation. Assessment is a more comprehensive evaluation to confirm risk, estimate immediate danger to the individual, and guide next steps. Suicide screening may be applied either universally or selectively. Universal screening applies to everyone in large settings such as K-12 schools and colleges or correctional facilities, regardless of risk. Universal screening may also occur as part of routine healthcare in primary care settings or emergency departments. Selective screening may be conducted in mental health settings or in emergency departments when individuals are experiencing a mental health crisis. Toolkits for guiding implementation of screening programs are available from [Zero Suicide](#) and the [National Institute of Mental Health](#).

The *Ask Suicide-Screening Questions*,³⁵⁶ *Patient Safety Screener-3*,³⁵⁷ *Columbia Suicide Severity Rating Scale*,³⁵⁸ and *Concise Health Risk Tracking Self-Report*³⁵⁹ are brief, validated, and commonly used tools to screen for suicide risk. They can be used in a wide range of settings including primary care, emergency departments, and mental health settings. Individual tools are not sufficiently accurate predictors of suicide risk and should only be used as part of a wider comprehensive assessment according to the research.^{360,361} Some tools do screen for a broader



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set of suicide risk factors and may also provide valuable information about risk for suicidal ideation and attempts. The *Convergent Functional Information for Suicidality* (CFI-S) 22-item checklist has shown moderate to high sensitivity and specificity. It outperforms physicians' predictive ratings of repeat visits to the emergency department and completed suicides during a six-month follow-up period.³⁶²

Emerging efforts to improve risk identification involve techniques such as machine learning and artificial intelligence to analyze medical records and other information to identify people at risk for suicide. Advances in predictive computer modeling show promising methods for using readily available data (such as those available in electronic health records) to detect populations at risk who might not otherwise

be recognized.^{52,363,364} Applying machine learning to electronic health records has the potential to improve risk detection, but these methods are currently not being routinely implemented in clinical settings.

Ongoing efforts to provide more effective support and treatment for individuals at risk of suicide include the [988 Suicide & Crisis Lifeline](#), mobile and community crisis response teams, and continued adaptation of therapeutic approaches for specific groups. Mobile and community crisis teams consists of mental health professionals who provide crisis services as well as follow-up stabilization services. These teams will travel to homes and community locations to help an individual experiencing a crisis.



Lessen Harms
and Prevent
Future Risk

Rationale

Millions of people are bereaved by suicide every year.^{3,60} Risk of suicide can increase among people who have lost a friend or peer, family member, coworker, or other close contact to suicide.³⁶⁵ We need better understanding of the potential long-term effects among survivors. Public messaging and media reporting also play an important role in preventing and reducing future suicide risk. Suicide-related media campaigns, for example, intend to prevent suicide by promoting resiliency and encouraging help-seeking behaviors. Research also suggests that media reports following a suicide that include exposure to sensationalized or otherwise uninformed reporting can inadvertently contribute to what is known as suicide contagion.³⁶⁶⁻³⁶⁸ The Suicide Prevention Resource Center provides a [comprehensive set of resources](#) including materials, programs, and trainings to help communities support the needs of survivors of suicide loss. Awareness and compassionate care for the bereaved is critical.

Public messaging about suicide prevention is a key communication strategy for educating individuals about warning signs and resources available to help individuals at risk for suicide.

Approaches

Two approaches that can lessen harms and prevent future risk of suicide include postvention and safe reporting and messaging about suicide.

Intervene after a suicide

Postvention happens after a suicide has taken place. It is an important preventive measure that may reduce future suicide risk by proactively and comprehensively supporting the needs of loss survivors. Postvention efforts may involve key partners in the community such as first responders, mental health and healthcare providers, social service providers, local and indigenous leaders, and persons with lived experience. Postvention may include debriefing sessions, counseling, and/or bereavement support groups for surviving friends, family members, or other close contacts.

Report and message about suicide safely

Public messaging about suicide prevention is a key communication strategy for educating individuals about warning signs and resources available to help individuals at risk for suicide before a crisis occurs. Safe messaging emphasizes that suicide is preventable and promotes actions and resources for prevention. Safe reporting following a suicide is critical. Reporting that sensationalizes suicide or glamorizes the person who died by suicide and the venue in which suicide is communicated (like during school assemblies) can heighten the risk of suicide among at-risk individuals and can inadvertently contribute to suicide contagion.³⁶⁹

Potential Outcomes

Potential outcomes include reductions in:

- ▶ suicidal ideation,
- ▶ suicide attempts,
- ▶ suicide rates,
- ▶ psychological distress, and
- ▶ contagion effects related to suicide.

Other potential outcomes include improvements in public perceptions about suicide and media reporting following a suicide.

Evidence

Current evidence suggests that postvention and safe reporting and messaging can impact risk and protective factors for suicide.

Intervene after a suicide

The [StandBy Support After Suicide](#) (StandBy) is one example of a postvention program that shows initial promise of reducing risk factors for suicide. StandBy provides clients with face-to-face outreach, telephone support, and referrals to additional community services matched to their needs through a professional crisis response team. Site coordinators develop customized case management plans and refer clients to other existing community services as needed.³⁷⁰ A StandBy study in Australia found that clients were significantly less likely to be at high risk for suicidal ideation and attempts than a suicide-bereaved comparison group that had not been involved with the StandBy program (48% and 64%, respectively).³⁷⁰ The effectiveness of StandBy at reducing suicidality was replicated in a later study in Australia but only for clients bereaved by suicide within the last 12 months.³⁷¹ Individuals who received StandBy services within 12 months of experiencing a loss to suicide were also less likely to experience social loneliness when compared with bereaved individuals who did not use StandBy. These findings underscore

the importance of accessing postvention services at the time of, or soon after, experiencing the death of a loved one by suicide.

Two other programs show initial promise for reducing suicidal ideation and/or suicide attempts among bereaved individuals and families: [Complicated Grief Treatment](#) and the [Family Bereavement Program](#) (FBP). Neither program was designed to address the needs of suicide survivors, but initial evidence suggests they can reduce suicidal ideation and suicide attempts among people who have experienced the death of a loved one by suicide. Complicated Grief Treatment is a short-term therapy that focuses on understanding and resolving grief complications and promoting resilience. Thoughts of suicide were reduced from 52% before treatment to 9% after treatment among individuals bereaved by suicide loss.³⁷² FBP promotes the resilience of children who have lost a parent to suicide and includes a component for caregivers that teaches positive parenting and a component for children that focuses on effective coping skills. The long-term effectiveness of FBP was documented in one study. It reports significantly less suicidal ideation and fewer suicide attempts at 6-year and 15-year follow-ups among children who participated in FBP when compared with a group of children who have lost a parent to suicide but did not participate in FBP.²⁷²

Additional research suggests that there are benefits when active postvention approaches occur at the scene of a suicide. They are associated with intake into treatment sooner, greater attendance at support group meetings, and attendance at more meetings when compared with passive postvention such as approaches where survivors self-refer for services.³⁷³

Report and message about suicide safely

One way to ensure safe reporting about suicide is to encourage news media to adhere to [Recommendations for Reporting on Suicide](#). The most compelling evidence supporting these recommendations for reporting comes from Austria. Media guidelines were introduced after a sharp increase in suicides on the



Postvention is an important preventive measure that may reduce future suicide risk by proactively and comprehensively supporting the needs of loss survivors.

Viennese subway, and an interrupted time-series design was used to evaluate the guidelines' national impact on subsequent suicides. Changes in the quality and quantity of media reporting in Austria resulted in a nationwide significant reduction of 81 suicides annually.³⁶⁶ A systematic review and meta-analysis, which included the U.S. and multiple other countries, indicated that following guidelines for responsible

reporting is especially important when covering celebrity suicides because the public may be more likely to identify with individuals of high social standing.³⁷⁴ Research suggests that sensationalist media reports have harmful effects on suicide, but reporting on positive coping skills in the face of adversity can demonstrate protective effects against suicide (U.S. and multiple countries).³⁷⁵ Reports of individual suicidal ideation along with reports describing a “mastery” of a crisis situation where adversities were overcome was associated with significant decreases in suicide rates in the period immediately following such reports.³⁷⁵



Future Directions

There is an ongoing need to adopt and evaluate public health approaches to postvention that are culturally sensitive and tailored to meet the needs of individuals and communities affected by suicide loss. Comprehensive postvention responses that recognize both the immediate and long-term effects of suicide loss are needed to reduce risk and promote healing.

The Action Alliance Survivors of Suicide Loss Task Force developed [guidelines](#) to help communities and organizations provide immediate and effective services and support to everyone who is affected by suicide. The guidelines are based on a social-ecological approach and are intended to promote compassionate and integrated postvention efforts across all levels of society. National guidelines are relevant to broader communities and organizations, but there are resources for smaller groups of people too. [After a Suicide: A Toolkit for Schools](#) is a postvention toolkit that offers comprehensive, practice-informed, and evidence-based guidance tailored to the specific needs of school communities when responding to and managing the detrimental effects of suicide. These resources have not been evaluated for their impact on suicide, attempts, or ideation, but they may reduce the effects of trauma including feelings of guilt, distress, depression, and complicated grief.^{371,376}

Improved and consistent adherence to safe messaging recommendations across all forms of media is another area for future directions and research. Suicide prevention media campaigns, for example, are an evolving and popular approach intended to reduce risk of suicide by reaching individuals before crisis

occurs.³⁷⁷ Media campaigns often focus on the public's perceptions about suicide by providing information regarding warning signs and resources and encouraging help-seeking behaviors. Preliminary evidence from two systematic reviews link media campaigns to modest improvements in knowledge, beliefs, and attitudes toward suicide.^{377,378} However, some research has found negative impacts associated with campaigns.³⁷⁷ These mixed results, and even potential for harm, strongly suggest that media campaigns are most effective when they are delivered as part of a multi-component approach to suicide prevention. They are more effective when they also incorporate active engagement strategies, like lectures or face-to-face distribution of promotional materials, versus relying on incidental exposure to passive media platforms such as billboards and radio or television advertisements (studies from multiple countries).³⁷⁷

The Action Alliance developed a [framework for safe messaging](#) and [recommendations for news and entertainment media](#) on depicting suicide. These resources can help all sectors of the community develop messages that are strategic, safe, positive, and based on best practices. Engaging all sectors of communities in understanding and implementing safe messaging about suicide may prevent future risk. These guidelines can be applied to all forms of communication such as casual conversations, formal meetings, and traditional and social media platforms. More research is needed on how these guidelines are implemented in different settings and for diverse audiences.

We can save lives and offer hope and healing by using the best available evidence and working to build out future directions with robust evaluation.



Collaboration and Partnerships

A comprehensive approach to suicide prevention extends beyond primary and behavioral healthcare settings to all places where people live, work, study, worship, and play. Communities can achieve this by creating partnerships to share the responsibility and investment in suicide prevention. Collaborations can also create meaningful linkages across public health, mental health, primary care, and other sectors.

The Role of Public Health

Public health can play an important and unique role in comprehensive suicide prevention. Public health agencies bring critical leadership to suicide prevention for broad population-level impact. The public health approach uses data to define the problem, science to determine what works for prevention, and widespread adoption of effective programs, practices, and policies with a particular focus on upstream prevention that seeks to prevent suicide risk in the first place. To carry out this approach, public health professionals serve as conveners of multi-sectoral partnerships that together use data and the best available evidence to plan, prioritize, and coordinate suicide prevention efforts in state, territorial, local, and tribal communities, with a focus on populations disproportionately affected by suicide. Public health collects and disseminates data and prevention information, implements and evaluates preventive measures, and tracks and monitors prevention progress for continuous quality improvement.

Integrating and coordinating prevention activities across sectors and settings can expand the reach and impact of suicide prevention efforts.

Partners and People with Vested Interest

The strategies and approaches outlined in this Prevention Resource cannot be accomplished by the public health sector alone, nor can suicide prevention rely solely on the mental health system, which touches some but not all of the strategies described in this resource. Integrating and coordinating prevention activities across sectors and settings (see *National Strategy for Suicide Prevention*¹) can expand the reach and impact of suicide prevention efforts. The following list describes some of the vital partners needed to implement the strategies and approaches in this resource, along with examples of the types of roles they can play in preventing suicide.

- ▶ **Community members, including individuals with lived experience** are essential, and it is important that they are involved at every stage of the planning and implementation process. Those who are directly impacted by suicide have firsthand experience and can contribute ideas for how to prevent it.
- ▶ **Individuals from populations disproportionately affected by suicide** offer vital expertise for preventing suicide. Collaborating with representatives and leaders from diverse backgrounds is particularly important to disrupt patterns



of inequity and help ensure relevance and reach. Also consider engaging non-traditional partners who have rapport in particular communities.

- ▶ **Non-governmental and community-based organizations** often serve as points of connection and engagement across the populations they serve. They can identify people at risk and coordinate across organizations to provide supportive services. Community organizations can deliver programs such as those that promote healthy norms and teach coping skills. They can leverage their connections to increase awareness of, and garner support for, policies that help reduce suicide on a broader scale. They can also create safe spaces for community members to grieve and process their experience following a suicide in the community, which can lessen harms and prevent future risk.
- ▶ **Education systems** can implement and evaluate policies and practices geared toward creating safe, healthy, and supportive classroom environments. Schools can teach coping and problem-solving skills and promote healthy connections through healthy peer norms and community engagement activities.
- ▶ **Local, state, and federal government** are especially important in addressing underlying environmental contexts that increase the risk for

suicide. Government agencies can implement programs and policies that improve housing stability, economic security, and care access and delivery. Public health and other governmental agencies can work together to establish policies and support practices that create protective environments where people live, work, and play.

- ▶ **Social services** can collaborate with the health, education, and justice sectors to support individuals at high risk for suicide and their families, improve access to care, and coordinate service provision with community organizations. This could include public agencies and departments at the county and municipal level.
- ▶ **Health and behavioral healthcare** insurers, providers, and health systems can implement programs and policies that improve access and delivery of suicide care. The health sector is well-positioned to identify and support people at risk through activities delivered in hospital, primary care, behavioral healthcare, and community settings that require the expertise of professionals who are licensed and trained to deliver intensive critical intervention support. Clinicians can help reduce access to lethal means among people at risk of suicide through education and counseling.

- ▶ **Businesses** can implement programs and policies that strengthen household financial security. They can also partner with public health entities to establish policies and practices that create protective workplace environments.
- ▶ **Housing authorities and agencies** can adopt policies that prevent homelessness and minimize eviction and foreclosure. Affordable housing advocates can promote a range of policies to improve housing stability, alleviate financial strain, and decrease risk of suicide. Supportive housing providers can ensure strong linkages to care and promote healthy connections among residents, their families, and community.
- ▶ **News media** can lessen harms and prevent future risk by promoting help-seeking and following responsible reporting guidelines, including when communicating information on a recent suicide to the public.
- ▶ **Policymakers** can advance changes in policies, systems, and environments that will help reduce suicide. This includes strengthening economic supports, improving access to and delivery of suicide care, and creating protective environments.
- ▶ **First responders** can identify those at risk and connect them to support.
- ▶ **Foundations** can support comprehensive action across strategies and fund evaluation efforts to expand the evidence base, with flexibility in funded approaches to encourage cultural responsiveness and adaptation. Funders can structure initiatives to include time for thorough planning and partnership building that foster collaboration.

These groups can work together to prevent suicide by impacting the various contexts and underlying risks that contribute to suicide. Suicide prevention efforts can involve partners in a wide variety of configurations. The list of partners and sample roles provided above is not meant to be exhaustive.

Many states and communities already have strategic plans for suicide prevention, as well as coalitions and task forces in place that engage these partners.³⁷⁹ The Action Alliance is a cross-sector, public-private partnership that brings together federal agencies* with the private sector† and the nonprofit sector to implement the National Strategy for Suicide Prevention and the Surgeon General's Call to Action.

The summary table in the Appendix notes sectors that may be well-positioned to lead implementation efforts within the strategies and approaches described in this document. All sectors can play an important and influential role in preventing the risk of suicide in the first place and lessening the immediate and long-term harms of suicidal behavior by helping those in times of crisis get the services and support they need.

Complementary resources:

[The Surgeon General's Call to Action to Implement the National Strategy for Suicide Prevention.](#)

[The National Strategy for Suicide Prevention](#) outlines sample actions that various sectors, levels of government, organizations, individuals, and families can take to prevent suicide.

* Centers for Disease Control and Prevention, Health Resources and Services Administration, Substance Abuse and Mental Health Services Administration, National Institute of Mental Health, Department of Defense, Indian Health Services, Office of Self Governance – Department of the Interior, Department of Justice, Department of Homeland Security

† Construction, healthcare, news media, sport, entertainment, finance, forestry, etc.



Monitoring and Evaluation

Monitoring and evaluation are necessary components of a public health approach to preventing suicide. Prevention efforts require timely and reliable data to monitor the extent of the problem and evaluate the impact. Data are also necessary for prevention planning and implementation to understand what works and does not work to address risk factors, reinforce protective factors, and decrease suicide rates.

Gathering ongoing, uniform, and consistent data across systems is important. Consistent data allow public health and other entities to better gauge the scope of the problem, identify groups at high risk, and monitor the effects of prevention policies and programs. It is common for different sectors, agencies, and organizations to employ varying definitions of suicidal ideation, behavior, and death that can make it difficult to consistently monitor specific outcomes across sectors and over time. For example, the manner in which deaths are classified can change from one jurisdiction to another or based on local medical and/or medico-legal standards.³⁸⁰

Consistent data allow public health and other entities to better gauge the scope of the problem, identify groups at high risk, and monitor the effects of prevention policies and programs.

Monitoring Resources

Surveillance systems exist at the federal, state, and local levels. A list of available data sources for suicide prevention can be found on CDC's [Suicide Prevention](#) website. It is important to assess the availability of surveillance data and data systems across these levels to identify and address gaps in the systems. CDC's National Vital Statistics System data, with data available at [WISQARS™](#) and CDC [WONDER](#)³⁸¹ and the [National Violent Death Reporting System](#),³⁸² are examples of surveillance systems that provide data on deaths from suicide. The National Vital Statistics System is a nationwide surveillance system that collects demographic, geographic, and cause-of-death data from death certificates.³⁸¹ The National Violent Death Reporting System is a state-based surveillance system (currently in all 50 states, the District of Columbia, and Puerto Rico) that combines data from death certificates, law enforcement reports, and coroner or medical examiner reports to provide detailed information on the circumstances of violent deaths, including suicide, which can assist communities in guiding prevention activities.³⁸² Data from state and local Child Death Review Teams³⁸³ and Suicide Death Review Teams (in a few states) offer another source to identify deaths and obtain insight into the gaps in services, systems, and modifiable risk factors for suicide.

The [National Electronic Injury Surveillance System-All Injury Program](#) provides nationally representative data about all types and causes of nonfatal injuries treated in a subset of U.S. hospital emergency departments and can be used to assess national rates of, and trends in, self-harm injuries by cause, age, race and ethnicity, sex, and disposition.⁹

[CDC's National Syndromic Surveillance Program](#) has additional information regarding suicidal behavior from electronic patient encounter data obtained from

emergency departments, urgent and ambulatory care centers, inpatient healthcare settings, and laboratories.³⁸⁴ Emergency department syndromic surveillance data contains information on suicidal ideation and suspected suicide attempts that can be analyzed by age, sex, and geographic location. It can provide timely information on trends which can be used to support targeted public health investigation and response.^{87,385-387} The program can be particularly helpful as an early warning system for upticks in suicide-related outcomes in general, and during times of community infrastructure disruptions, such as pandemics, economic recessions, and natural disasters.

Some surveillance systems provide national, state, and some local estimates of suicidal behavior and suicide risk and protective factors. The [Youth Risk Behavior Surveillance System](#) collects information from a nationally representative sample of 9th–12th-grade students. It is a key resource in monitoring health risk behaviors among youth. It includes information about youth who have seriously considered attempting suicide, attempted suicide, made a plan, or required treatment by a doctor or nurse for a suicide attempt that resulted in an injury, poisoning, or overdose.³⁸⁸ The data are obtained from a national school-based survey conducted by CDC as well as from state, territorial, tribal, and large urban school district surveys conducted by education and health agencies.³⁸⁸ The National Survey on Drug Use and Health (NSDUH)³⁸⁹ is an annual survey of the civilian, non-institutionalized population ages 12 years and older. NSDUH provides data on:

- ▶ national and state-level estimates of substance use such as alcohol, tobacco, illicit drugs, and nonmedical use of prescription drugs,
- ▶ mental health, such as past year mental illness and co-occurring illnesses,
- ▶ service utilization, and
- ▶ suicidal ideation, suicide plans, and suicide attempts.

NSDUH is a key resource to track trends in suicide-related risk factors in the population and to help identify groups at increased risk.³⁸⁹

International Classification of Diseases, Tenth Revision–Clinical Modification coded administrative data can provide a means to monitor suicide deaths, nonfatal suicide attempts, and instances of intentional self-harm through claims and encounter data.³⁹⁰ International Classification of Diseases, Tenth Revision suicide-related codes are distinct from mental health-related codes and provide information about manner of death or method of injury via external cause codes. Administrative data sets can vary in quality and completeness, particularly external cause codes. There is a federal requirement for healthcare providers to include diagnosis codes when submitting claims for reimbursement, but inclusion of external cause codes is voluntary.³⁹¹ Administrative data can also be used to evaluate prevention efforts.

The [Healthcare Cost and Utilization Project](#) (HCUP) is a collection of healthcare databases that provides longitudinal all-payer encounter-level data for hospital inpatient care, outpatient emergency department care, and ambulatory surgery from hospital-owned facilities. HCUP data can provide national-level trend data on emergency department visits related to suicidal ideation or suicide attempt.^{392,393} It can also be used within states to understand the prevalence of suicide attempts requiring hospitalizations by geographic regions.

Evaluation

It is important to address gaps in responses, track progress of prevention efforts, and evaluate the impact of those efforts to improve the quality of suicide prevention programming and/or to eliminate non-effective strategies or activities. Evaluation data are essential to understand what does and does not work to reduce suicide rates and the associated risk and protective factors at the individual, relationship, community, and societal levels. Theories of change and logic models that identify short-, intermediate-, and long-term outcomes are an important part of program evaluation.



Evaluation data are essential to understand what does and does not work to reduce suicide rates and the associated risk and protective factors at the individual, relationship, community, and societal levels.

The evidence base for suicide prevention has advanced greatly over the last few decades. However, we need more information on the impacts of policies, programs, and practices on suicide and suicide attempts. This work needs to go beyond merely examining their effectiveness on risk factors. Research can inform knowledge gaps about the long-term effectiveness of primary prevention

strategies (upstream before risk occurs) and community-level strategies to prevent suicide at the population level. Testing the effectiveness of the strategies and approaches in this resource could include evaluating how the strategies interact, identifying the barriers and facilitators to successful strategy implementation, and the impact of key contextual factors, policies, and partnerships on strategy implementation and effectiveness. Most existing evaluations focus on approaches implemented in isolation, but there is potential to understand the synergistic effects within a comprehensive prevention approach. CDC's [Comprehensive Suicide Prevention Program](#) seeks to understand these synergies as states and communities implement multiple strategies and approaches from this resource.



Conclusion

Each of us likely interacts every day with suicide survivors; those with lived experience; and those with thoughts of suicide either at home, at work, or in our communities.

Suicide is a serious but preventable^{1,2} public health problem that can have lasting impacts and ripple effects that are far-reaching. Each of us likely interacts every day with suicide survivors; those with lived experience; and those with thoughts of suicide either at home, at work, or in our communities. Suicide rates have declined in the past two years,⁷ but multiple barriers have impeded progress. Barriers include adequate resources and capacity to carry out the work and stigma related to help-seeking, mental illness, and being a survivor. The good news is that suicide as a preventable public health problem is garnering attention, particularly in the wake of the COVID-19 pandemic. We now have the Surgeon General's Call to Action to implement the National Strategy for Suicide Prevention and the U.S. Department of Health and Human Services' Behavioral Health Coordinating Council and its subcommittee on Suicide Prevention and Crisis Care. Many other expanded efforts such as the 988 Suicide & Crisis Lifeline are underway.

This Prevention Resource includes strategies and approaches designed to be used as part of a comprehensive approach to suicide prevention. Such an approach starts with convening, connecting, and communicating with multi-sectoral partners. It relies on quality data for decision-making; leveraging existing suicide prevention programming in communities; implementing and evaluating multiple strategies and approaches with the best available evidence as found in this document; and communicating lessons learned, progress, and success stories. This Prevention Resource addresses multiple risk and protective factors at the individual, relationship, community, and societal levels. It includes strategies and approaches to prevent the risk of suicide in the first place, as well as strategies focused on lessening the immediate and long-term harms of suicidal behavior. It also includes strategies that range from a focus on the whole population regardless of risk to strategies designed to support people at highest risk. Importantly, this Prevention Resource extends the bounds of typical prevention strategies to consider approaches that go beyond individual behavior change to better address risk factors impacting communities and populations more broadly such as economic policies to strengthen housing and financial security.

The collection of policies, programs, and practices described in this resource can be implemented now while the evidence base continues to emerge. Monitoring and evaluation play a key role in that implementation. In closing, we hope that this resource supports states and communities as you work to prevent suicide, and as we work together, knowing that hope, help, and healing are possible.

References

1. U.S. Office of the Surgeon General, National Action Alliance for Suicide Prevention. 2012 National Strategy for Suicide Prevention: Goals and Objectives for Action. Washington, D.C.: HHS; 2012.
2. U.S. Office of the Surgeon General, National Action Alliance for Suicide Prevention. The Surgeon General's Call to Action to implement the Strategy for Suicide Prevention. HHS; 2021.
3. World Health Organization. Suicide Prevention: A Global Imperative. Geneva, Switzerland: WHO Press; 2014.
4. Frieden TR. Six Components Necessary for Effective Public Health Program Implementation. *Am J Public Health*. 2014;104(1):17-22.
5. Centers for Disease Control and Prevention, Division of Injury Prevention. Suicide Prevention Strategic Plan FY2020-2022. 2020; Atlanta, GA. Available at: <https://www.cdc.gov/suicide/strategy/index.html>.
6. Silverman MM, Maris RW. The Prevention of Suicidal Behaviors: An Overview. *Suicide Life Threat Behav*. 1995;25(1):10-21.
7. Ehlman D, Yard E, Stone DM, Jones CM, Mack KA. Changes in Suicide Rates — United States, 2019 and 2020. *MMWR Morb Mortal Wkly Rep*. 2022;71(8):306-312.
8. Curtin SC, Hedegaard H, Ahmad F. Provisional Numbers and Rates of Suicide by Month and Demographic Characteristics: United States, 2020. Centers for Disease Control and Prevention, National Center for Health Statistics, 2021.
9. Centers for Disease Control and Prevention. WISQARS (Web-based Injury Statistics Query and Reporting System). 2020; Atlanta, GA. Available at: <http://www.cdc.gov/injury/wisqars/index.html>.
10. Stone DM, Jones CM, Mack KA. Changes in Suicide Rates - United States, 2018-2019. *MMWR Morb Mortal Wkly Rep*. 2021;70(8):261-268.
11. Leavitt RA, Ertl A, Sheats K, Petrosky E, Ivey-Stephenson A, Fowler KA. Suicides Among American Indian/Alaska Natives - National Violent Death Reporting System, 18 States, 2003-2014. *MMWR Morb Mortal Wkly Rep*. 2018;67(8):237-242.
12. Peterson C, Sussell A, Li J, Schumacher PK, Yeoman K, Stone DM. Suicide Rates by Industry and Occupation - National Violent Death Reporting System, 32 States, 2016. *MMWR Morb Mortal Wkly Rep*. 2020;69(3):57-62.
13. Defense Suicide Prevention Office. DoD CY 2019 Annual Suicide Report. Washington, D.C., 2020.
14. Veterans Health Administration. Veteran Suicide Data and Reporting - Mental Health VA. Washington, D.C. Available at: https://www.mentalhealth.va.gov/suicide_prevention/data.asp.
15. Ravindran C, Morley SW, Stephens BM, Stanley IH, Reger MA. Association of Suicide Risk With Transition to Civilian Life Among US Military Service Members. *JAMA Netw Open*. 2020;3(9):e2016261.
16. Lindahl V, Pearson JL, Colpe L. Prevalence of Suicidality During Pregnancy and the Postpartum. *Arch Womens Ment Health*. 2005;8(2):77-87.
17. Yi S, Chang EC, Chang OD, et al. Coping and Suicide in College Students. *Crisis*. 2021;42(1):5-12.
18. Chung D, Hadzi-Pavlovic D, Wang M, Swaraj S, Olfson M, Large M. Meta-analysis of Suicide Rates in the First Week and the First Month after Psychiatric Hospitalisation. *BMJ Open*. 2019;9(3):e023883.
19. Admon LK, Dalton VK, Kolenic GE, et al. Trends in Suicidality 1 Year Before and After Birth Among Commercially Insured Childbearing Individuals in the United States, 2006-2017. *JAMA Psychiatry*. 2021;78(2):171-176.
20. Crosby AE, Han B, Ortega LA, et al. Suicidal Thoughts and Behaviors Among Adults Aged ≥ 18 Years--United States, 2008-2009. *MMWR Surveill Summ*. 2011;60(13):1-22.
21. Substance Abuse and Mental Health Services Administration. Highlights for the 2020 National Survey on Drug Use and Health. Rockville, MD. 2021.
22. Lindsey MA, Sheftall AH, Xiao Y, Joe S. Trends of Suicidal Behaviors Among High School Students in the United States: 1991-2017. *Pediatrics*. 2019;144(5).
23. Ivey-Stephenson AZ, Demissie Z, Crosby AE, et al. Suicidal Ideation and Behaviors Among High School Students - Youth Risk Behavior Survey, United States, 2019. *MMWR Suppl*. 2020;69(1):47-55.
24. Thoma BC, Salk RH, Choukas-Bradley S, Goldstein TR, Levine MD, Marshal MP. Suicidality Disparities Between Transgender and Cisgender Adolescents. *Pediatrics*. 2019;144(5).

25. Turecki G. Epigenetics and suicidal behavior research pathways. *Am J Prev Med.* 2014;47(3 Suppl 2):S144-151.
26. Centers for Disease Control and Prevention. Preventing Suicide Factsheet. 2021. Atlanta, GA. Available at: https://www.cdc.gov/suicide/pdf/NCIPC-Suicide-FactSheet-508_FINAL.pdf.
27. Centers for Disease Control and Prevention. Risk and Protective Factors. Suicide Prevention 2022; Atlanta, GA. Available at: <https://www.cdc.gov/suicide/factors/index.html>.
28. Suicide Prevention Resource Center. Risk and Protective Factors. 2020. Oklahoma City, OK. Available at: <https://www.sprc.org/about-suicide/risk-protective-factors>.
29. Prevention Institute. *Back to our Roots - Community Determinants and Pillars of Wellbeing Advance Resilience and Healing.* 2017. Oakland, CA.
30. Bossarte RM, Karras E, Lu N, et al. Associations Between the Department of Veterans Affairs' Suicide Prevention Campaign and Calls to Related Crisis Lines. *Public Health Rep.* 2014;129(6):516-525.
31. Assari S, Moghani Lankarani M. Violence Exposure and Mental Health of College Students in the United States. *Behav Sci (Basel).* 2018;8(6):53.
32. Chapman DP, Whitfield CL, Felitti VJ, Dube SR, Edwards VJ, Anda RF. Adverse Childhood Experiences and the Risk of Depressive Disorders in Adulthood. *J Affect Disord.* 2004;82(2):217-225.
33. Dube SR, Anda RF, Felitti VJ, Chapman DP, Williamson DF, Giles WH. Childhood Abuse, Household Dysfunction, and the Risk of Attempted Suicide Throughout the Life Span: Findings from the Adverse Childhood Experiences Study. *JAMA.* 2001;286(24):3089-3096.
34. Felitti VJ, Anda RF, Nordenberg D, et al. Relationship of Childhood Abuse and Household Dysfunction to Many of the Leading Causes of Death in Adults. The Adverse Childhood Experiences (ACE) Study. *Am J Prev Med.* 1998;14(4):245-258.
35. Klomek AB, Sourander A, Gould M. The Association of Suicide and Bullying in Childhood to Young Adulthood: A Review of Cross-sectional and Longitudinal Research Findings. *The Canadian Journal of Psychiatry.* 2010;55(5):282-288.
36. Leeb RT, Lewis T, Zolotor AJ. A Review of Physical and Mental Health Consequences of Child Abuse and Neglect and Implications for Practice. *American Journal of Lifestyle Medicine.* 2011;5(5):454-468.
37. World Health Organization. Global and Regional Estimates of Violence Against Women: Prevalence and Health Effects of Intimate Partner Violence and Non-Partner Sexual Violence. Geneva: World Health Organization; 2013.
38. Bellis MA, Hughes K, Leckenby N, et al. Adverse Childhood Experiences and Associations with Health-Harming Behaviours in Young Adults: Surveys in Eight Eastern European Countries. *Bull World Health Organ.* 2014;92(9):641-655.
39. Hughes K, Bellis MA, Hardcastle KA, et al. The Effect of Multiple Adverse Childhood Experiences on Health: A Systematic Review and Meta-Analysis. *Lancet Public Health.* 2017;2(8):e356-e366.
40. Metzler M, Merrick MT, Klevens J, Ports KA, Ford DC. Adverse Childhood Experiences and Life Opportunities: Shifting the Narrative. *Children and Youth Services Review.* 2017;72:141-149.
41. Font SA, Maguire-Jack K. Pathways From Childhood Abuse and Other Adversities to Adult Health Risks: The Role of Adult Socioeconomic Conditions. *Child Abuse Negl.* 2016;51:390-399.
42. Haegerich TM, Dahlberg LL. Violence as a Public Health Risk. *American Journal of Lifestyle Medicine.* 2011;1559827611409127.
43. Wilkins N, Tsao B, Hertz M, Davis R, Klevens J. Connecting the Dots: An Overview of the Links Among Multiple Forms of Violence. Atlanta, GA: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, 2014. Atlanta, GA. Available at: https://www.cdc.gov/violenceprevention/pdf/connecting_the_dots-a.pdf.
44. Hamby S, Grych J. The Web of Violence: Exploring Connections Among Different Forms of Interpersonal Violence and Abuse. In: *Briefs in Sociology.* New York, NY: Springer; 2013.
45. Kleiman EM, Riskind JH, Schaefer KE, Weingarden H. The Moderating Role of Social Support on the Relationship Between Impulsivity and Suicide Risk. *Crisis.* 2012;33(5):273-279.
46. Carter M, McGee R, Taylor B, Williams S. Health Outcomes in Adolescence: Associations With Family, Friends and School Engagement. *J Adolesc.* 2007;30(1):51-62.
47. Maimon D, Browning CR, Brooks-Gunn J. Collective Efficacy, Family Attachment, and Urban Adolescent Suicide Attempts. *J Health Soc Behav.* 2010;51(3):307-324.
48. Capaldi DM, Knoble NB, Shortt JW, Kim HK. A Systematic Review of Risk Factors for Intimate Partner Violence. *Partner Abuse.* 2012;3(2):231-280.

49. Losel F, Farrington DP. Direct Protective and Buffering Protective Factors in the Development of Youth Violence. *Am J Prev Med.* 2012;43(2 Suppl 1):S8-S23.
50. Wyman PA, Brown CH, LoMurray M, et al. An Outcome Evaluation of the Sources of Strength Suicide Prevention Program Delivered by Adolescent Peer Leaders in High Schools. *Am J Public Health.* 2010;100(9):1653-1661.
51. Lynch FL, Peterson EL, Lu CY, et al. Substance Use Disorders and Risk of Suicide in a General US Population: A Case Control Study. *Addict Sci Clin Pract.* 2020;15(1):14.
52. Simon GE, Johnson E, Lawrence JM, et al. Predicting Suicide Attempts and Suicide Deaths Following Outpatient Visits Using Electronic Health Records. *Am J Psychiatry.* 2018;175(10):951-960.
53. Bohnert KM, Ilgen MA, Louzon S, McCarthy JF, Katz IR. Substance Use Disorders and the Risk of Suicide Mortality Among Men and Women in the US Veterans Health Administration. *Addiction.* 2017;112(7):1193-1201.
54. Esang M, Ahmed S. A Closer Look at Substance Use and Suicide. *American Journal of Psychiatry Residents' Journal.* 2018;13(6):6-8.
55. Centers for Disease Control and Prevention. *Preventing Adverse Childhood Experiences: Leveraging the Best Available Evidence.* Atlanta, GA: National Center for Injury Prevention and Control; 2019. Available at: <https://www.cdc.gov/violenceprevention/pdf/preventingACES.pdf>
56. National Action Alliance for Suicide Prevention, Survivors of Suicide Loss Task Force. *Responding to Grief, Trauma, and Distress After a Suicide: U.S. National Guidelines.* Washington, D.C. 2015.
57. Dunne EJ, McIntosh JL, Dunne-Maxim K, eds. *Suicide and Its Aftermath: Understanding and Counseling the Survivors.* New York: Norton; 1987.
58. Mishara BL, ed *The Impact of Suicide.* New York: Springer; 1995.
59. National Action Alliance for Suicide Prevention, Suicide Attempt Survivors Task Force. *The Way Forward: Pathways to Hope, Recovery, and Wellness With Insights From Lived Experience.* Washington, D.C. 2014.
60. Cerel J, Brown MM, Maple M, et al. How Many People Are Exposed to Suicide? Not Six. *Suicide Life Threat Behav.* 2019;49(2):529-534.
61. Richardson J. *Assessing the Economic and Quality of Life Impacts of Grief and Suicide in the United States* [Dissertation]. Ann Arbor, MI, University of Michigan; 2018.
62. Cerel J, Maple M, De Venne A, Moore M, Flaherty C, Brown M. Exposure to Suicide in the Community: Prevalence and Correlates in One US State. *Public Health Rep.* 2016;131(1).
63. Stroebe M, Schut H, Stroebe W. Health Outcomes of Bereavement. *Lancet.* 2007;370(9603):1960-1973.
64. Erlangsen A, Runeson B, Bolton JM, et al. Association Between Spousal Suicide and Mental, Physical, and Social Health Outcomes: A Longitudinal and Nationwide Register-Based Study. *JAMA Psychiatry.* 2017;74(5):456-464.
65. Spillane A, Larkin C, Corcoran P, Matvienko-Sikar K, Riordan F, Arensman E. Physical and Psychosomatic Health Outcomes in People Bereaved by Suicide Compared to People Bereaved by Other Modes of Death: A Systematic Review. *BMC Public Health.* 2017;17(1):939.
66. Spillane A, Matvienko-Sikar K, Larkin C, Corcoran P, Arensman E. What are the Physical and Psychological Health Effects of Suicide Bereavement on Family Members? An Observational and Interview Mixed-Methods Study in Ireland. *BMJ Open.* 2018;8(1):e019472.
67. Tal Young I, Iglewicz A, Glorioso D, et al. Suicide Bereavement and Complicated Grief. *Dialogues Clin Neurosci.* 2012;14(2):177-186.
68. Mitchell AM, Kim Y, Prigerson HG, Mortimer-Stephens M. Complicated Grief in Survivors of Suicide. *Crisis.* 2004;25(1):12-18.
69. Tal I, Mauro C, Reynolds CF, 3rd, et al. Complicated Grief After Suicide Bereavement and Other Causes of Death. *Death Stud.* 2017;41(5):267-275.
70. Mitchell AM, Terhorst L. PTSD Symptoms in Survivors Bereaved by the Suicide of a Significant Other. *J Am Psychiatr Nurses Assoc.* 2017;23(1):61-65.
71. Hanschmidt F, Lehnig F, Riedel-Heller SG, Kersting A. The Stigma of Suicide Survivorship and Related Consequences-A Systematic Review. *PLoS One.* 2016;11(9):e0162688.
72. Shields C, Kavanagh M, Russo K. A Qualitative Systematic Review of the Bereavement Process Following Suicide. *Omega (Westport).* 2017;74(4):426-454.

73. Peterson C, Miller GF, Barnett SBL, Florence C. Economic Cost of Injury — United States, 2019. *MMWR Morb Mortal Wkly Rep.* 2021;70:1655-1659.
74. Peterson C, Luo F, Florence C. State-Level Economic Costs of Fatal Injuries — United States, 2019. *MMWR Morb Mortal Wkly Rep.* 2021;70:1660-1663.
75. Edwards RW, Jumper-Thurman P, Plested BA, Oetting ER, Swanson L. Community Readiness: Research to Practice. *Journal of community psychology.* 2000;28(3):291-307.
76. Hawkins JD, Catalano RF, Kuklinski MR. Communities That Care. In: *Encyclopedia of Criminology and Criminal Justice.* Springer; 2014:393-408.
77. Luo F, Florence CS, Quispe-Agnoli M, Ouyang L, Crosby AE. Impact of Business Cycles on US Suicide Rates, 1928-2007. *Am J Public Health.* 2011;101(6):1139-1146.
78. National Action Alliance for Suicide Prevention. Transforming Communities Key Elements for the Implementation of Comprehensive Community-Based Suicide Prevention. Washington, D.C., 2017.
79. Suicide Prevention Resource Center. Strategic Planning. Available at: <https://sprc.org/effective-prevention/strategic-planning>
80. Prevention Institute. Suicide Prevention Modules Institute. 2021; Available at: <https://preventioninstitute.org/suicide-prevention/modules>.
81. Reger MA, Stanley IH, Joiner TE. Suicide Mortality and Coronavirus Disease 2019-A Perfect Storm? *JAMA Psychiatry.* 2020;77(11):1093-1094.
82. Brown S, Schuman DL. Suicide in the Time of COVID-19: A Perfect Storm. *J Rural Health.* 2021;37(1):211-214.
83. Bastiampillai T, Allison S, Looi JCL, Licinio J, Wong ML, Perry SW. The COVID-19 Pandemic and Epidemiologic Insights From Recession-Related Suicide Mortality. *Mol Psychiatry.* 2020;25(12):3445-3447.
84. Wasserman IM. The Impact of Epidemic, War, Prohibition and Media on Suicide: United States, 1910-1920. *Suicide & Life-Threatening Behavior.* 1992;22(2):240-254.
85. Cheung YT, Chau PH, Yip PS. A Revisit on Older Adults Suicides and Severe Acute Respiratory Syndrome (SARS) Epidemic in Hong Kong. *Int J Geriatr Psychiatry.* 2008;23(12):1231-1238.
86. Chang YH, Chang SS, Hsu CY, Gunnell D. Impact of Pandemic on Suicide: Excess Suicides in Taiwan During the 1918-1920 Influenza Pandemic. *J Clin Psychiatry.* 2020;81(6).
87. Czeisler ME, Lane RI, Petrosky E, et al. Mental Health, Substance Use, and Suicidal Ideation During the COVID-19 Pandemic - United States, June 24-30, 2020. *MMWR Morb Mortal Wkly Rep.* 2020;69(32):1049-1057.
88. Pollard MS, Tucker JS, Green HD, Jr. Changes in Adult Alcohol Use and Consequences During the COVID-19 Pandemic in the US. *JAMA Netw Open.* 2020;3(9):e2022942.
89. Killgore WDS, Cloonan SA, Taylor EC, Lucas DA, Dailey NS. Alcohol Dependence During COVID-19 Lockdowns. *Psychiatry Res.* 2021;296:113676.
90. Hamm ME, Brown PJ, Karp JF, et al. Experiences of American Older Adults with Pre-existing Depression During the Beginnings of the COVID-19 Pandemic: A Multicity, Mixed-Methods Study. *Am J Geriatr Psychiatry.* 2020;28(9):924-932.
91. Jobes DA, Crumlish JA, Evans AD. The COVID-19 Pandemic and Treating Suicidal Risk: The Telepsychotherapy Use of CAMS. *Journal of Psychotherapy Integration.* 2020;30(2):226-237.
92. Shore JH, Manson SM. A Developmental Model for Rural Telepsychiatry. *Psychiatr Serv.* 2005;56(8):976-980.
93. Hilty DM, Ferrer DC, Parish MB, Johnston B, Callahan EJ, Yellowlees PM. The Effectiveness of Telemental Health: A 2013 Review. *Telemed J E Health.* 2013;19(6):444-454.
94. Rojas SM, Carter SP, McGinn MM, Reger MA. A Review of Telemental Health as a Modality to Deliver Suicide-Specific Interventions for Rural Populations. *Telemed J E Health.* 2020;26(6):700-709.
95. Ault A. Kennedy, NIMH Demand Urgent Action on COVID-19 Mental Health Toll. *Medscape Medical News* 2020.
96. Torguson K. Major Federal Agencies and Private Sector Groups Unite on a Mental Health & Suicide Prevention National Response to COVID-19. 2020.
97. Fowler KA, Gladden RM, Vagi KJ, Barnes J, Frazier L. Increase in Suicides Associated With Home Eviction and Foreclosure During the US Housing Crisis: Findings From 16 National Violent Death Reporting System States, 2005-2010. *Am J Public Health.* 2015;105(2):311-316.
98. Blakely TA, Collings SC, Atkinson J. Unemployment and Suicide. Evidence for a Causal Association? *J Epidemiol Community Health.* 2003;57(8):594-600.

99. Nordt C, Warnke I, Seifritz E, Kawohl W. Modelling Suicide and Unemployment: A Longitudinal Analysis Covering 63 Countries, 2000-11. *Lancet Psychiatry*. 2015;2(3):239-245.
100. Carriere DE, Marshall MI, Binkley JK. Response to Economic Shock: The Impact of Recession on Rural-Urban Suicides in the United States. *J Rural Health*. 2019;35(2):253-261.
101. Stack S, Wasserman I. Economic Strain and Suicide Risk: A Qualitative Analysis. *Suicide Life Threat Behav*. 2007;37(1):103-112.
102. Kerr WC, Kaplan MS, Huguet N, Caetano R, Giesbrecht N, McFarland BH. Economic Recession, Alcohol, and Suicide Rates: Comparative Effects of Poverty, Foreclosure, and Job Loss. *Am J Prev Med*. 2017;52(4):469-475.
103. Bommersbach TJ, Stefanovics EA, Rhee TG, Tsai J, Rosenheck RA. Suicide Attempts and Homelessness: Timing of Attempts Among Recently Homeless, Past Homeless, and Never Homeless Adults. *Psychiatr Serv*. 2020;71(12):1225-1231.
104. Cylus J, Glymour MM, Avendano M. Do Generous Unemployment Benefit Programs Reduce Suicide Rates? A State Fixed-Effect Analysis Covering 1968-2008. *Am J Epidemiol*. 2014;180(1):45-52.
105. Kaufman JA, Livingston MD, Komro KA. Unemployment Insurance Program Accessibility and Suicide Rates in the United States. *Prev Med*. 2020;141:106318.
106. Okada M, Hasegawa T, Kato R, Shiroyama T. Analysing Regional Unemployment Rates, GDP Per Capita and Financial Support for Regional Suicide Prevention Programme on Suicide Mortality in Japan Using Governmental Statistical Data. *BMJ Open*. 2020;10(8):e037537.
107. Moore TH, Kapur N, Hawton K, Richards A, Metcalfe C, Gunnell D. Interventions to Reduce the Impact of Unemployment and Economic Hardship on Mental Health in the General Population: A Systematic Review. *Psychol Med*. 2017;47(6):1062-1084.
108. Flavin P, Radcliff B. Public Policies and Suicide Rates in the American States. *Social Indicators Research*. 2009;90(2):195-209.
109. Christian C, Hensel L, Roth C. Income Shocks and Suicides: Causal Evidence From Indonesia. *The Review of Economics and Statistics*. 2019;101(5):905-920.
110. DeSimone J. Suicide and the Social Security Early Retirement Age. *Contemporary Economic Policy*. 2018;36(3):435-450.
111. Lenhart O. The Effects of State-Level Earned Income Tax Credits on Suicides. *Health Econ*. 2019;28(12):1476-1482.
112. Dow WH, Godoy A, Lowenstein C, Reich M. Can Labor Market Policies Reduce Deaths of Despair? *J Health Econ*. 2020;74:102372.
113. Rambotti S. Is There a Relationship Between Welfare-State Policies and Suicide Rates? Evidence From the U.S. States, 2000-2015. *Soc Sci Med*. 2020;246:112778.
114. Gertner AK, Rotter JS, Shafer PR. Association Between State Minimum Wages and Suicide Rates in the U.S. *Am J Prev Med*. 2019;56(5):648-654.
115. Kaufman JA, Salas-Hernandez LK, Komro KA, Livingston MD. Effects of Increased Minimum Wages by Unemployment Rate on Suicide in the USA. *J Epidemiol Community Health*. 2020;74(3):219-224.
116. Denney JT, Rogers RG, Krueger PM, Wadsworth T. Adult Suicide Mortality in the United States: Marital Status, Family Size, Socioeconomic Status, and Differences by Sex. *Soc Sci Q*. 2009;90(5):1167.
117. Houle JN, Light MT. The Home Foreclosure Crisis and Rising Suicide Rates, 2005 to 2010. *Am J Public Health*. 2014;104(6):1073-1079.
118. Reeves A, Clair A, McKee M, Stuckler D. Reductions in the United Kingdom's Government Housing Benefit and Symptoms of Depression in Low-Income Households. *Am J Epidemiol*. 2016;184(6):421-429.
119. Denary W, Fenelon A, Schlesinger P, Purtle J, Blankenship KM, Keene DE. Does Rental Assistance Improve Mental Health? Insights From a Longitudinal Cohort Study. *Soc Sci Med*. 2021;282:114100.
120. U.S. Department of Housing and Urban Development. Housing First in Permanent Supportive Housing Brief - HUD Exchange. 2014; Available at: <https://www.hudexchange.info/resource/3892/housing-first-in-permanent-supportive-housing-brief/>.
121. Collins SE, Taylor EM, King VL, et al. Suicidality Among Chronically Homeless People with Alcohol Problems Attenuates Following Exposure to Housing First. *Suicide Life Threat Behav*. 2016;46(6):655-663.
122. Aquin JP, Roos LE, Distasio J, et al. Effect of Housing First on Suicidal Behaviour: A Randomised Controlled Trial of Homeless Adults with Mental Disorders. *Can J Psychiatry*. 2017;62(7):473-481.
123. Montgomery AE, Dichter M, Byrne T, Blosnich J. Intervention to Address Homelessness and All-Cause and Suicide Mortality Among Unstably Housed US Veterans, 2012-2016. *J Epidemiol Community Health*. 2020.
124. Haddon W. Advances in the Epidemiology of Injuries as a Basis for Public Policy. *Public Health Reports*. 1980;95(5):411-421.

125. Dahlberg LL, Krug EG. Violence-A Global Public Health Problem. In: Krug E, Dahlberg LL, Mercy JA, Zwi AB, Lozano R, eds. *World Report on Violence and Health*. Geneva, Switzerland: World Health Organization; 2002:1-56.
126. Toosi M. Labor Force Projections to 2024: The Labor Force is Growing, But Slowly. In: Statistics BoL, ed. Washington, D.C.: Bureau of Labor Statistics; 2015:1-33.
127. Han B, Crosby AE, Ortega LA, Parks SE, Compton WM, Gfroerer J. Suicidal Ideation, Suicide Attempt, and Occupations Among Employed Adults Aged 18–64 Years in the United States. *Comprehensive psychiatry*. 2016;66:176-186.
128. Noonan ME. Mortality in State Prisons, 2001-2014 *Bureau of Justice Statistical Tables*. 2016;250150(December).
129. Knox KL, Pflanz S, Talcott GW, et al. The US Air Force Suicide Prevention Program: Implications for Public Health Policy. *Am J Public Health*. 2010;100(12):2457-2463.
130. National Action Alliance for Suicide Prevention Workplace Task Force. *Comprehensive Blueprint for Workplace Suicide Prevention*. Washington, D.C.: 2015.
131. Runyan CW, Becker A, Brandspiegel S, Barber C, Trudeau A, Novins D. Lethal Means Counseling for Parents of Youth Seeking Emergency Care for Suicidality. *West J Emerg Med*. 2016;17(1):8-14.
132. Miller M, Warren M, Hemenway D, Azrael D. Firearms and Suicide in US Cities. *Inj Prev*. 2015;21(e1):e116-119.
133. Crosby AE, Espitia-Hardeman V, Ortega L, Lozano B. Alcohol and Suicide. *Alcohol: Science, Policy and Public Health*. 2013:190.
134. Kaplan MS, McFarland BH, Huguet N, et al. Acute Alcohol Intoxication and Suicide: A Gender-Stratified Analysis of the National Violent Death Reporting System. *Inj Prev*. 2013;19(1):38-43.
135. Beautrais AL, Gibb SJ, Fergusson DM, Horwood LJ, Larkin GL. Removing Bridge Barriers Stimulates Suicides: An Unfortunate Natural Experiment. *Aust N Z J Psychiatry*. 2009;43(6):495-497.
136. Stokes ML, McCoy KP, Abram KM, Byck GR, Teplin LA. Suicidal Ideation and Behavior in Youth in the Juvenile Justice System: A Review of the Literature. *J Correct Health Care*. 2015;21(3):222-242.
137. Conner A, Azrael D, Miller M. Suicide Case-Fatality Rates in the United States, 2007 to 2014: A Nationwide Population-Based Study. *Annals of internal medicine*. 2019;171(12):885-895.
138. Simon OR, Swann AC, Powell KE, Potter LB, Kresnow MJ, O'Carroll PW. Characteristics of Impulsive Suicide Attempts and Attempters. *Suicide Life Threat Behav*. 2001;32(1 Suppl):49-59.
139. Deisenhammer EA, Ing CM, Strauss R, Kemmler G, Hinterhuber H, Weiss EM. The Duration of the Suicidal Process: How Much Time is Left for Intervention Between Consideration and Accomplishment of a Suicide Attempt? *J Clin Psychiatry*. 2009;70(1):19-24.
140. Hawton K. Restricting Access to Methods of Suicide. *Crisis*. 2007;28(S1):4-9.
141. Yip PS, Caine E, Yousuf S, Chang SS, Wu KC, Chen YY. Means Restriction for Suicide Prevention. *Lancet*. 2012;379(9834):2393-2399.
142. Sale E, Hendricks M, Weil V, Miller C, Perkins S, McCudden S. Counseling on Access to Lethal Means (CALM): An Evaluation of a Suicide Prevention Means Restriction Training Program for Mental Health Providers. *Community Ment Health J*. 2018;54(3):293-301.
143. Rowhani-Rahbar A, Simonetti JA, Rivara FP. Effectiveness of Interventions to Promote Safe Firearm Storage. *Epidemiol Rev*. 2016;38(1):111-124.
144. Knipe DW, Chang SS, Dawson A, et al. Suicide Prevention Through Means Restriction: Impact of the 2008-2011 Pesticide Restrictions on Suicide in Sri Lanka. *PLoS One*. 2017;12(3):e0172893.
145. Okolie C, Wood S, Hawton K, et al. Means Restriction for the Prevention of Suicide by Jumping. *Cochrane Database Syst Rev*. 2020;2(2):CD013543.
146. Gregor S, Beavan G, Culbert A, et al. Patterns of Pre-Crash Behaviour in Railway Suicides and the Effect of Corridor Fencing: A Natural Experiment in New South Wales. *Int J Inj Contr Saf Promot*. 2019;26(4):423-430.
147. Sinyor M, Schaffer A, Redelmeier DA, et al. Did the Suicide Barrier Work After All? Revisiting the Bloor Viaduct Natural Experiment and Its Impact on Suicide Rates in Toronto. *BMJ Open*. 2017;7(5):e015299.
148. Smart R, Morral AR, Smucker S, et al. *The Science of Gun Policy: A Critical Synthesis of Research Evidence on the Effects of Gun Policies in the United States, Second Edition*. Santa Monica, CA: RAND Corporation; 2020.
149. Hayes LM. Suicide Prevention in Correctional Facilities: Reflections and Next Steps. *Int J Law Psychiatry*. 2013;36(3-4):188-194.
150. Giesbrecht N, Huguet N, Ogden L, et al. Acute Alcohol Use Among Suicide Decedents in 14 US States: Impacts of Off-Premise and On-Premise Alcohol Outlet Density. *Addiction*. 2015;110(2):300-307.

151. Escobedo LG, Ortiz M. The Relationship Between Liquor Outlet Density and Injury and Violence in New Mexico. *Accid Anal Prev*. 2002;34(5):689-694.
152. Xuan Z, Naimi TS, Kaplan MS, et al. Alcohol Policies and Suicide: A Review of the Literature. *Alcohol Clin Exp Res*. 2016;40(10):2043-2055.
153. Cherpitel CJ, Borges GLG, Wilcox HC. Acute Alcohol Use and Suicidal Behavior: A Review of the Literature. *Alcoholism: Clinical and Experimental Research*. 2004;28(5 SUPPL.):18S-28S.
154. Ilgen MA, Bohnert ASB, Ganoczy D, Bair MJ, McCarthy JF, Blow FC. Opioid Dose and Risk of Suicide. *Pain*. 2016;157(5):1079-1084.
155. Perron S, Burrows S, Fournier M, Perron PA, Ouellet F. Installation of a Bridge Barrier as a Suicide Prevention strategy in Montreal, Quebec, Canada. *Am J Public Health*. 2013;103(7):1235-1239.
156. Grossman DC, Mueller BA, Riedy C, et al. Gun Storage Practices and Risk of Youth Suicide and Unintentional Firearm Injuries. *JAMA*. 2005;293(6):707-714.
157. Shelef L, Laur L, Raviv G, Fruchter E. In the Israeli Defense Force: A Review of an Important Military Medical Procedure. *Disaster Mil Med* 2015;1:16.
158. Lubin G, Werbeloff N, Halperin D, Shmushkevitch M, Weiser M, Knobler HY. Decrease in Suicide Rates After a Change of Policy Reducing Access to Firearms in Adolescents: A Naturalistic Epidemiological Study. *Suicide Life Threat Behav* 2010;40(5):421-424.
159. Slovak K, Pope N, Giger J, Kheibari A. An Evaluation of the Counseling on Access to Lethal Means (CALM) Training With an Area Agency on Aging. *J Gerontol Soc Work* 2019;62(1):48-66.
160. Azad HA, Monuteaux MC, Rees CA, et al. Child Access Prevention Firearm Laws and Firearm Fatalities Among Children Aged 0 to 14 Years, 1991-2016. *JAMA Pediatr* 2020;174(5):463-469.
161. Miller M, Zhang W, Rowhani-Rahbar A, Azrael D. Child Access Prevention Laws and Firearm Storage: Results from a National Survey. *Am J Prev Med* 2022;62(3):333-340.
162. U.S. Air Force Resilience. Suicide Prevention. See the Signs, Reduce Risk Factors. n.d.; Available at: <https://www.resilience.af.mil/Suicide-Prevention-Program/>.
163. Knox KL, Litts DA, Talcott GW, Feig JC, Caine ED. Risk of Suicide and Related Adverse Outcomes After Exposure to a Suicide Prevention Programme in the US Air Force: Cohort Study. *BMJ* 2003;327(7428):1376.
164. Mishara BL, Martin N. Effects of a Comprehensive Police Suicide Prevention Program. *Crisis* 2012;33(3):162-168.
165. Mishara BL, Fortin LF. Long-Term Effects of a Comprehensive Police Suicide Prevention Program: 22-Year Follow-Up. *Crisis* 2021.
166. Groschwitz R, Munz L, Straub J, Bohnacker I, Plener PL. Strong Schools Against Suicidality and Self-Injury: Evaluation of a Workshop for School Staff. *Sch Psychol Q* 2017;32(2):188-198.
167. Suicide Prevention Resource Center. Creating Suicide Safety in Schools. 2013; Available at: <https://www.sprc.org/resources-programs/creating-suicide-safety-schools>.
168. Hayes LM. Prison Suicide: An Overview and a Guide to Prevention. *Prison J* 2016;75(4):431-456.
169. Barker E, Kolves K, De Leo D. Management of Suicidal and Self-Harming Behaviors in Prisons: Systematic Literature Review of Evidence-Based Activities. *Arch Suicide Res* 2014;18(3):227-240.
170. Poorolajal J, Haghtalab T, Farhadi M, Darvishi N. Substance Use Disorder and Risk of Suicidal Ideation, Suicide Attempt and Suicide Death: A Meta-Analysis. *J Public Health (Oxf)* 2016;38(3):e282-e291.
171. Rush BR, Gliksman L, Brook R. Alcohol Availability, Alcohol Consumption and Alcohol-Related Damage. I. The Distribution of Consumption Model. *J Stud Alcohol* 1986;47(1):1-10.
172. Gruenewald PJ, Remer L. Changes in Outlet Densities Affect Violence Rates. *Alcohol Clin Exp Res* 2006;30(7):1184-1193.
173. Lipton R, Gruenewald P. The Spatial Dynamics of Violence and Alcohol Outlets. *J Stud Alcohol* 2002;63(2):187-195.
174. Lippy C, DeGue S. Exploring Alcohol Policy Approaches to Prevent Sexual Violence Perpetration. *Trauma Violence Abuse* 2016;17(1):26-42.
175. Kolves K, Chitty KM, Wardhani R, Varnik A, de Leo D, Witt K. Impact of Alcohol Policies on Suicidal Behavior: A Systematic Literature Review. *Int J Environ Res Public Health* 2020;17(19).
176. Johnson FW, Gruenewald PJ, Remer LG. Suicide and Alcohol: Do Outlets Play a Role? *Alcohol Clin Exp Res* 2009;33(12):2124-2133.

177. Borgschulte M, Corredor-Waldron A, Marshall G. A Path Out: Prescription Drug Abuse, Treatment, and Suicide. *J Econ Behav Org* 2018;149:169-184.
178. National Alliance on Mental Health New Hampshire. NH Firearm Safety Coalition – The Connect Program. 2021; Available at: <https://theconnectprogram.org/resources/nh-firearm-safety-coalition/>.
179. Vriniotis M, Barber C, Frank E, Demicco R, New Hampshire Firearm Safety C. A Suicide Prevention Campaign for Firearm Dealers in New Hampshire. *Suicide Life Threat Behav* 2015;45(2):157-163.
180. Raifman J, Moscoe E, Austin SB, McConnell M. Difference-in-Differences Analysis of the Association Between State Same-Sex Marriage Policies and Adolescent Suicide Attempts. *JAMA Pediatr* 2017;171(4):350-356.
181. McDowell A, Raifman J, Progovac AM, Rose S. Association of Nondiscrimination Policies With Mental Health Among Gender Minority Individuals. *JAMA Psychiatry* 2020;77(9):952-958.
182. Davis B, Roynce Stafford MB, Pullig C. How Gay-Straight Alliance Groups Mitigate the Relationship Between Gay-Bias Victimization and Adolescent Suicide Attempts. *J Am Acad Child Adolesc Psychiatry* 2014;53(12):1271-1278.e1271.
183. Centers for Disease Control and Prevention. About the CDC-Kaiser ACE Study. Atlanta, GA; 2021; Available at: <https://www.cdc.gov/violenceprevention/aces/about.html>.
184. U.S. Department of Health and Human Services. *To Live to See the Great Day that Dawns: Preventing Suicide by American Indian and Alaska Native Youth and Young Adults*. Rockville, MD. 2010;DHHS Publication SMA (10)-4480, CMHS-NSPL-0196.
185. Breux P, Boccio DE. Improving Schools' Readiness for Involvement in Suicide Prevention: An Evaluation of the Creating Suicide Safety in Schools (CSSS) Workshop. *Int J Environ Res Public Health* 2019;16(12).
186. Owens D, Horrocks J, House A. Fatal and Non-Fatal Repetition of Self-Harm. Systematic Review. *Br J Psychiatry* 2002;181(3):193-199.
187. Olfson M, Gerhard T, Huang C, Crystal S, Stroup TS. Premature Mortality Among Adults With Schizophrenia in the United States. *JAMA Psychiatry* 2015;72(12):1172-1181.
188. Harris EC, Barraclough B. Excess Mortality of Mental Disorder. *Br J Psychiatry* 1998;173:11-53.
189. Cunningham PJ. Beyond Parity: Primary Care Physicians' Perspectives on Access to Mental Health Care. *Health Aff (Millwood)* 2009;28(3):w490-501.
190. Maura J, Weisman de Mamani A. Mental Health Disparities, Treatment Engagement, and Attrition Among Racial/Ethnic Minorities with Severe Mental Illness: A Review. *J Clin Psychol Med Settings* 2017;24(3-4):187-210.
191. Cook BL, Trinh NH, Li Z, Hou SS, Progovac AM. Trends in Racial-Ethnic Disparities in Access to Mental Health Care, 2004-2012. *Psychiatr Serv* 2017;68(1):9-16.
192. Gilmour L, Maxwell M, Duncan E. Policy Addressing Suicidality in Children and Young People: An International Scoping Review. *BMJ Open* 2019;9(10):e030699.
193. Littlewood DL, Quinlivan L, Graney J, et al. Learning from Clinicians' Views of Good Quality Practice in Mental Healthcare Services in the Context of Suicide Prevention: A Qualitative Study. *BMC Psychiatry* 2019;19(1):346.
194. Coffey CE. Building a System of Perfect Depression Care in Behavioral Health. *Jt Comm J Qual Patient Saf* 2007;33(4):193-199.
195. Steelesmith DL, Fontanella CA, Campo JV, Bridge JA, Warren KL, Root ED. Contextual Factors Associated with County-Level Suicide Rates in the United States, 1999 to 2016. *JAMA Netw Open* 2019;2(9):e1910936.
196. The Paul Wellstone and Pete Dominici Mental Health Parity and Addiction Equity Act of 2008 (MPHEA). In. Vol HR 14242008.
197. Hester RD. Lack of Access to Mental Health Services Contributing to the High Suicide Rates Among Veterans. *Int J Ment Health Syst* 2017;11(1):47.
198. National Action Alliance for Suicide Prevention Clinical Workforce Task Force. *Suicide Prevention and the Clinical Workforce: Guidelines for Training*. Washington, D.C.; 2014; Available at: <https://theactionalliance.org/resource/suicide-prevention-and-clinical-workforce-guidelines-training>.
199. Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality. National Survey on Drug Use and Health. 2016; Available at: <https://www.samhsa.gov/data/release/2016-national-survey-drug-use-and-health-nsduh-releases>.
200. Harris KM, Carpenter C, Bao Y. The Effects of State Parity Laws on the Use of Mental Health Care. *Med Care* 2006;44(6):499-505.
201. Sipe TA, Finnie RK, Knopf JA, et al. Effects of Mental Health Benefits Legislation: A Community Guide Systematic Review. *Am J Prev Med* 2015;48(6):755-766.

202. Li X, Ma J. Does Mental Health Parity Encourage Mental Health Utilization among Children and Adolescents? Evidence from the 2008 Mental Health Parity and Addiction Equity Act (MHPAEA). *J Behav Health Serv Res* 2020;47(1):38-53.
203. Klick J, Markowitz S. Are Mental Health Insurance Mandates Effective? Evidence from Suicides. *Health Econ* 2006;15(1):83-97.
204. Lang M. The Impact of Mental Health Insurance Laws on State Suicide Rates. *Health Econ* 2013;22(1):73-88.
205. Health Resources & Services Administration. National Health Service Corps.
206. Han X, Ku L. Enhancing Staffing in Rural Community Health Centers can Help Improve Behavioral Health Care. *Health Aff (Millwood)* 2019;38(12):2061-2068.
207. Hung P, Busch SH, Shih YW, McGregor AJ, Wang S. Changes in Community Mental Health Services Availability and Suicide Mortality in the US: A Retrospective Study. *BMC Psychiatry* 2020;20(1):188.
208. Hailey D, Roine R, Ohinmaa A. The Effectiveness of Telemental Health Applications: A Review. *Can J Psychiatry* 2008;53(11):769-778.
209. Mohr DC, Vella L, Hart S, Heckman T, Simon G. The Effect of Telephone-Administered Psychotherapy on Symptoms of Depression and Attrition: A Meta-Analysis. *Clin Psychol (New York)* 2008;15(3):243-253.
210. McGinn MM, Roussev MS, Shearer EM, McCann RA, Rojas SM, Felker BL. Recommendations for Clinical Video Telehealth with Patients at High Risk for Suicide. *Psychiatr Clin North Am* 2019;42(4):587-595.
211. Arean PA, Hallgren KA, Jordan JT, et al. The Use and Effectiveness of Mobile Apps for Depression: Results from a Fully Remote Clinical Trial. *J Med Internet Res* 2016;18(12):e330.
212. Richards D, Duffy D, Burke J, Anderson M, Connell S, Timulak L. Supported Internet-Delivered Cognitive Behavior Treatment for Adults with Severe Depressive Symptoms: A Secondary Analysis. *JMIR Ment Health* 2018;5(4):e10204.
213. Coffey CE. Pursuing Perfect Depression Care. *Psychiatr Serv* 2006;57(10):1524-1526.
214. Coffey CE, Coffey MJ, Ahmedani BK. An Update on Perfect Depression Care. *Psychiatr Serv* 2013;64(4):396.
215. Coffey MJ, Coffey CE, Ahmedani BK. Suicide in a Health Maintenance Organization Population. *JAMA Psychiatry* 2015;72(3):294-296.
216. Layman DM, Kammer J, Leckman-Westin E, et al. The Relationship Between Suicidal Behaviors and Zero Suicide Organizational Best Practices in Outpatient Mental Health Clinics. *Psychiatric Services* 2021;72(10):1118-1125.
217. Stapelberg NJC, Sveticic J, Hughes I, et al. Efficacy of the Zero Suicide Framework in Reducing Recurrent Suicide Attempts: Cross-Sectional and Time-to-Recurrent-Event Analyses. *Br J Psychiatry* 2020;219(2):427-436.
218. Durkheim E. *Suicide: A Study in Sociology*. Glencoe, IL: Free Press.(Original work published 1897); 1897/1951.
219. Cornwell EY, Waite LJ. Social Disconnectedness, Perceived Isolation, and Health Among Older Adults. *J Health Soc Behav* 2009;50(1):31-48.
220. Marraccini ME, Brier ZMF. School Connectedness and Suicidal Thoughts and Behaviors: A Systematic Meta-Analysis. *Sch Psychol Q* 2017;32(1):5-21.
221. Siedlecki KL, Salthouse TA, Oishi S, Jeswani S. The Relationship Between Social Support and Subjective Well-Being Across Age. *Soc Indic Res* 2014;117(2):561-576.
222. Portes A, Vickstrom E. Diversity, Social Capital and Cohesion. In: Rae A, Bribosia E, Rorive I, Sredanovic D, eds. *Governing Diversity: Migrant Integration and Multiculturalism in North America and Europe*. Institut D'Estudes Europeennes; 2011.
223. Muennig P, Cohen AK, Palmer A, Zhu W. The Relationship Between Five Different Measures of Structural Social Capital, Medical Examination Outcomes, and Mortality. *Soc Sci Med* 2013;85:18-26.
224. Beyer KM, Layde PM, Hamberger LK, Laud PW. Does Neighborhood Environment Differentiate Intimate Partner Femicides from other Femicides? *Violence Against Women* 2015;21(1):49-64.
225. Whitley R, McKenzie K. Social Capital and Psychiatry: A Review of the Literature. *Harv Rev Psychiatry* 2005;13(2):71-84.
226. De Silva MJ, McKenzie K, Harpham T, Huttly SR. Social Capital and Mental Illness: A Systematic Review. *J Epidemiol Community Health* 2005;59(8):619-627.
227. Centers for Disease Control and Prevention. Strategic Direction for the Prevention of Suicidal Behavior: Promoting Individual, Family, and Community Connectedness to Prevent Suicidal Behavior. Atlanta, GA; 2009; Available at: https://stacks.cdc.gov/view/cdc/11796/cdc_11796_DS1.pdf.
228. Wyman PA, Pisani AR, Brown CH, et al. Effect of the Wingman-Connect Upstream Suicide Prevention Program for Air Force Personnel in Training: A Cluster Randomized Clinical Trial. *JAMA Netw Open* 2020;3(10):e2022532.

229. Mueller AS, Abrutyn S, Stockton C. Can Social Ties Be Harmful? Examining the Spread of Suicide in Early Adulthood. *Sociol Perspect* 2014;58(2):204-222.
230. Wyman PA. Developmental Approach to Prevent Adolescent Suicides: Research Pathways to Effective Upstream Preventive Interventions. *Am J Prev Med* 2014;47(3 Suppl 2):S251-256.
231. Schlichthorst M, Ozols I, Reifels L, Morgan A. Lived Experience Peer Support Programs for Suicide Prevention: A Systematic Scoping Review. *Int J Ment Health Syst* 2020;14(1):65.
232. Centers for Disease Control and Prevention. Principles of Community Engagement. *CDC/ATSDR Committee on Community Engagement*. Atlanta, GA; 2011; Available at: https://www.atsdr.cdc.gov/communityengagement/pdf/PCE_Report_508_FINAL.pdf.
233. Branas CC, Cheney RA, MacDonald JM, Tam VW, Jackson TD, Ten Have TR. A Difference-in-Differences Analysis of Health, Safety, and Greening Vacant Urban Space. *Am J Epidemiol* 2011;174(11):1296-1306.
234. Branas CC, Kondo MC, Murphy SM, South EC, Polsky D, MacDonald JM. Urban Blight Remediation as a Cost-Beneficial Solution to Firearm Violence. *Am J Public Health* 2016;106(12):2158-2164.
235. South EC, Hohl BC, Kondo MC, MacDonald JM, Branas CC. Effect of Greening Vacant Land on Mental Health of Community-Dwelling Adults: A Cluster Randomized Trial. *JAMA Netw Open* 2018;1(3):e180298.
236. Pfeiffer PN, King C, Ilgen M, et al. Development and Pilot Study of a Suicide Prevention Intervention Delivered by Peer Support Specialists. *Psychol Serv* 2019;16(3):360-371.
237. Milligan C, Neary D, Payne S, Hanratty B, Irwin P, Dowrick C. Older Men and Social Activity: A Scoping Review of Men's Sheds and Other Gendered Interventions. *Aging & Society* 2016;36(5):895-923.
238. Ang SH, Cavanagh J, Southcombe A, Bartram T, Marjoribanks T, McNeil N. Human Resource Management, Social Connectedness and Health and Well-Being of Older and Retired Men: The Role of Men's Sheds. *Int J Hum Resour Manag* 2017;28(14):1986-2016.
239. Colder Carras M, Bergendahl M, Labrique AB. Community Case Study: Stack Up's Overwatch Program, an Online Suicide Prevention and Peer Support Program for Video Gamers. *Front Psychol* 2021;12:575224.
240. Objective Zero Foundation. Our Mission. n.d.; Available at: <https://www.objectivezero.org/mission>.
241. Wong CA, Ming D, Maslow G, Gifford EJ. Mitigating the Impacts of the COVID-19 Pandemic Response on At-Risk Children. *Pediatrics* 2020;146(1).
242. King CA, Gipson PY, Arango A, et al. LET's CONNECT Community Mentorship Program for Youths with Peer Social Problems: Preliminary Findings from a Randomized Effectiveness Trial. *J Community Psychol* 2018;46(7):885-902.
243. King CA, Gipson PY, Arango A, et al. LET's CONNECT Community Mentorship Program for Adolescents with Peer Social Problems: A Randomized Intervention Trial. *Am J Community Psychol* 2021;68(3-4):310-322.
244. Kellam SG, Mackenzie ACL, Brown CH, et al. The Good Behavior Game and the Future of Prevention and Treatment. *Addict Sci Clin Pract* 2011;July:73-84.
245. Bandura A. *Social Foundations of Thought and Action: A Social Cognitive Theory*. Englewood Cliffs, NJ: Prentice-Hall, Inc; 1986.
246. Pollock LR, Williams JM. Problem-Solving in Suicide Attempters. *Psychol Med* 2004;34(1):163-167.
247. Bjorkenstam C, Kosidou K, Bjorkenstam E. Childhood Adversity and Risk of Suicide: Cohort Study of 548 721 Adolescents and Young Adults in Sweden. *BMJ* 2017;357:j1334.
248. Centers for Disease Control and Prevention. Essentials for Childhood Creating Safe, Stable, Nurturing Relationships and Environments for All Children. Atlanta, GA; n.d.; Available at: <https://www.cdc.gov/violenceprevention/pdf/essentials-for-childhood-framework508.pdf>
249. Payton J, Weissber RP, Durlak JA, et al. *The Positive Impact of Social and Emotional Learning for Kindergarten to Eighth-Grade Students: Findings from Three Scientific Reviews*. Chicago, IL: Collaborative for Academic, Social, and Emotional Learning; 2008.
250. Herman KC, Borden LA, Reinke WM, Webster-Stratton C. The Impact of the Incredible Years Parent, Child, and Teacher Training Programs on Children's Co-Occurring Internalizing Symptoms. *Sch Psychol Q* 2011;26(3):189-201.
251. Institute of Medicine (US) Committee on Prevention of Mental Disorders. *Reducing Risks for Mental Disorders: Frontiers for Preventive Intervention Research*. Washington, DC: Institute of Medicine; 1994.
252. Knox MS, Burkhart K, Hunter KE. ACT Against Violence Parents Raising Safe Kids Program: Effects on Maltreatment-Related Parenting Behaviors and Beliefs. *J Fam Issues* 2010.

253. Taylor RD, Oberle E, Durlak JA, Weissberg RP. Promoting Positive Youth Development Through School-Based Social and Emotional Learning Interventions: A Meta-Analysis of Follow-Up Effects. *Child Dev* 2017;88(4):1156-1171.
254. Weissberg RP. Promoting the Social and Emotional Learning of Millions of School Children. *Perspect Psychol Sci* 2019;14(1):65-69.
255. Jones DE, Greenberg M, Crowley M. Early Social-Emotional Functioning and Public Health: The Relationship Between Kindergarten Social Competence and Future Wellness. *Am J Public Health* 2015;105(11):2283-2290.
256. Durlak JA. *Handbook of Social and Emotional Learning: Research and Practice*. Guilford Publications; 2015.
257. Wasserman D, Hoven CW, Wasserman C, et al. School-Based Suicide Prevention Programmes: The SEYLE Cluster-Randomised, Controlled Trial. *Lancet* 2015;385(9977):1536-1544.
258. Kahn JP, Cohen RF, Tubiana A, et al. Influence of Coping Strategies on the Efficacy of YAM (Youth Aware of Mental Health): A Universal School-Based Suicide Preventive Program. *Eur Child Adolesc Psychiatry* 2020;29(12):1671-1681.
259. Wilcox HC, Kellam SG, Brown CH, et al. The Impact of Two Universal Randomized First- and Second-Grade Classroom Interventions on Young Adult Suicide Ideation and Attempts. *Drug Alcohol Depend* 2008;95 Suppl 1:S60-73.
260. Kellam SG, Brown CH, Poduska JM, et al. Effects of a Universal Classroom Behavior Management Program in First and Second Grades on Young Adult Behavioral, Psychiatric, and Social Outcomes. *Drug Alcohol Depend* 2008;95 Suppl 1:S5-S28.
261. Newcomer AR, Roth KB, Kellam SG, et al. Higher Childhood Peer Reports of Social Preference Mediates the Impact of the Good Behavior Game on Suicide Attempt. *Prev Sci* 2016;17(2):145-156.
262. Roberts CM, Kane RT, Rooney RM, et al. Efficacy of the Aussie Optimism Program: Promoting Pro-Social Behavior and Preventing Suicidality in Primary School Students. A Randomised-Controlled Trial. *Front Psychol* 2017;8:1392.
263. Schilling EA, Aseltine RH, Jr., James A. The SOS Suicide Prevention Program: Further Evidence of Efficacy and Effectiveness. *Prev Sci* 2016;17(2):157-166.
264. Turecki G, Brent DA. Suicide and Suicidal Behaviour. *Lancet* 2016;387(10024):1227-1239.
265. Conner KR, Wyman P, Goldston DB, et al. Two Studies of Connectedness to Parents and Suicidal Thoughts and Behavior in Children and Adolescents. *J Clin Child Adolesc Psychol* 2016;45(2):129-140.
266. Reid MJ, Webster-Stratton C, Hammond M. Follow-Up of Children who Received the Incredible Years Intervention for Oppositional-Defiant Disorder: Maintenance and Prediction of 2-year Outcome. *Behavior Therapy* 2003;34(4):471-491.
267. Webster-Stratton C, Hammond M. Treating Children with Early-Onset Conduct Problems: A Comparison of Child and Parent Training Interventions. *J Consult Clin Psychol* 1997;65(1):93-109.
268. Webster-Stratton C, Reid MJ, Hammond M. Preventing Conduct Problems, Promoting Social Competence: A Parent and Teacher Training Partnership in Head Start. *J Clin Child Psychol* 2001;30(3):283-302.
269. Spoth RL, Guyll M, Day SX. Universal Family-Focused Interventions in Alcohol-Use Disorder Prevention: Cost-Effectiveness and Cost-Benefit Analyses of Two Interventions. *J Stud Alcohol* 2002;63(2):219-228.
270. Brent D. Prevention Programs to Augment Family and Child Resilience can have Lasting Effects on Suicidal Risk. *Suicide Life Threat Behav* 2016;46 Suppl 1:S39-47.
271. Connell AM, McKillop HN, Dishion TJ. Long-Term Effects of the Family Check-Up in Early Adolescence on Risk of Suicide in Early Adulthood. *Suicide Life Threat Behav* 2016;46 Suppl 1(Suppl 1):S15-22.
272. Sandler I, Tein JY, Wolchik S, Ayers TS. The Effects of the Family Bereavement Program to Reduce Suicide Ideation and/or Attempts of Parentally Bereaved Children Six and Fifteen Years Later. *Suicide Life Threat Behav* 2016;46 Suppl 1(Suppl 1):S32-38.
273. Vidot DC, Huang S, Poma S, Estrada Y, Lee TK, Prado G. Familias Unidas' Crossover Effects on Suicidal Behaviors Among Hispanic Adolescents: Results from an Effectiveness Trial. *Suicide Life Threat Behav* 2016;46 Suppl 1:S8-14.
274. Gewirtz AH, DeGarmo DS, Zamir O. Effects of a Military Parenting Program on Parental Distress and Suicidal Ideation: After Deployment Adaptive Parenting Tools. *Suicide Life Threat Behav* 2016;46 Suppl 1(Suppl 1):S23-31.
275. Akeman E, Kirlic N, Clausen AN, et al. A Pragmatic Clinical Trial Examining the Impact of a Resilience Program on College Student Mental Health. *Depress Anxiety* 2020;37(3):202-213.
276. Rowe HL, Trickett EJ. Student Diversity Representation and Reporting in Universal School-Based Social and Emotional Learning Programs: Implications for Generalizability. *Educ Psychol Rev* 2017;30(2):559-583.
277. Shatkin JP, Diamond U, Zhao Y, DiMeglio J, Chodaczek M, Bruzzese JM. Effects of a Risk and Resilience Course on Stress, Coping Skills, and Cognitive Strategies in College Students. *Teach Psychol* 2016;43(3):204-210.

278. Antony J, Brar R, Khan PA, et al. Interventions for the Prevention and Management of Occupational Stress Injury in First Responders: A Rapid Overview of Reviews. *Syst Rev* 2020;9(1):121.
279. Robertson IT, Cooper CL, Sarkar M, Curran T. Resilience Training in the Workplace from 2003 to 2014: A Systematic Review. *J Occup Organ Psychol* 2015;88(3):533-562.
280. Luca DL, Garlow N, Staatz C, Margiotta C, Zivin K. Societal Costs of Untreated Perinatal Mood and Anxiety Disorders in the United States. Princeton, NJ: Mathematica Policy Research, 2019.
281. Ngai FW, Chan SW, Ip WY. The Effects of a Childbirth Psychoeducation Program on Learned Resourcefulness, Maternal Role Competence and Perinatal Depression: A Quasi-Experiment. *Int J Nurs Stud*. 2009;46(10):1298-1306.
282. Robertson IT, Cooper CL, Sarkar M, et al. Resilience Training in the Workplace from 2003 to 2014: A Systematic Review. *J Occup Organ Psychol*. 2015;88(3):533-62.
283. Padmanathan P, Hall K, Moran P, et al. Prevention of suicide and reduction of self-harm among people with substance use disorder: A systematic review and meta-analysis of randomised controlled trials. *Compr Psychiatry*. 2020;96:152135.
284. Lineberry TW, O'Connor SS. Suicide in the US Army. *Mayo Clin Proc* 2012;87(9):871-878.
285. Kann L, McManus T, Harris WA, et al. Youth Risk Behavior Surveillance - United States, 2015. *MMWR Surveill Summ*. 2016;65(6):1-174.
286. Curtin SC, Warner M, Hedegaard H. Increase in Suicide in the United States, 1999-2014. *NCHS Data Brief*. 2016;241:1-8.
287. Haroz EE, Decker E, Lee C, Bolton P, Spiegel P, Ventevogel P. Evidence for Suicide Prevention Strategies with Populations in Displacement: A Systematic Review. *Intervention (Amstelveen)*. 2020;18(1):37-44.
288. Congressional Black Caucus Emergency Task Force on Black Youth Suicide and Mental Health. Ring the: The of Black in America. Washington, D.C. Available at: <https://theactionalliance.org/resource/ring-alarm-crisis-black-youth-suicide-america>.
289. Bruce ML, Sirey JA. Integrated care for depression in older primary care patients. *Can J Psychiatry*. 2018;63(7):439-446.
290. Miller AB, Esposito-Smythers C, Weismore JT, Renshaw KD. The relation between child maltreatment and adolescent suicidal behavior: A systematic review and critical examination of the literature. *Clin Child Fam Psychol Rev*. 2013;16(2):146-172.
291. Stein DJ, Chiu WT, Hwang I, et al. Cross-national analysis of the associations between traumatic events and suicidal behavior: findings from the WHO World Mental Health Surveys. *PLoS One*. 2010;5(5):e10574.
292. National Institute of Mental Health. Suicide Prevention. Available at: <https://www.nimh.nih.gov/health/topics/suicide-prevention>.
293. Fuller Thomson E, Baird SL, Dhrodia R, Brennenstuhl S. The Association Between Adverse Childhood Experiences (ACEs) and Suicide Attempts in a Population Based Study. *Child Care Health Dev*. 2016;42(5):725-734.
294. Russell ST, Joyner K. Adolescent Sexual Orientation and Suicide Risk: Evidence from a National Study. *Am J Public Health*. 2001;91(8):1276-1281.
295. Wang PS, Demler O, Kessler RC. Adequacy of Treatment for Serious Mental Illness in the United States. *Am J Public Health*. 2002;92(1):92-98.
296. Wilcox HC, Wyman PA. Suicide prevention strategies for improving population health. *Child Adolesc Psychiatr Clin N Am*. 2016;25(2):219-233.
297. Mann JJ, Michel CA, Auerbach RP. Improving Suicide Prevention Through Evidence-Based Strategies: A Systematic Review. *Am J Psychiatry*. 2021;178(7):611-624.
298. Jobes DA. The Collaborative Assessment and Management of Suicidality (CAMS): An evolving evidence-based clinical approach to suicidal risk. *Suicide Life Threat Behav*. 2012;42(6):640-653.
299. Wasserman D, Iosue M, Wuestefeld A, Carli V. Adaptation of evidence-based suicide prevention strategies during and after the COVID-19 pandemic. *World Psychiatry*. 2020;19(3):294-306.
300. Isaac M, Elias B, Katz LY, et al. Gatekeeper training as a preventative intervention for suicide: A systematic review. *Can J Psychiatry*. 2009;54(4):260-268.
301. Hoffberg AS, Stearns-Yoder KA, Brenner LA. The effectiveness of crisis line services: A systematic review. *Front Public Health*. 2020;7:399.
302. Gould MS, Munfakh JLH, Kleinman M, Lake AM. National suicide prevention lifeline: Enhancing mental health care for suicidal individuals and other people in crisis. *Suicide Life Threat Behav*. 2012;42(1):22-35.

303. Inagaki M, Kawashima Y, Kawanishi C, et al. Interventions to prevent repeat suicidal behavior in patients admitted to an emergency department for a suicide attempt: A meta-analysis. *J Affect Disord.* 2015;175:66-78.
304. Luxton DD, June JD, Comtois KA. Can postdischarge follow-up contacts prevent suicide and suicidal behavior? A review of the evidence. *Crisis.* 2013;34(1):32-41.
305. Gilbody S, Bower P, Fletcher J, Richards D, Sutton AJ. Collaborative care for depression: A cumulative meta-analysis and review of longer-term outcomes. *Arch Intern Med.* 2006;166(21):2314-2321.
306. Archer J, Bower P, Gilbody S, et al. Collaborative care for depression and anxiety problems. *Cochrane Database Syst Rev.* 2012;10:CD006525.
307. Bruce ML, Ten Have TR, Reynolds CF, III, et al. Reducing suicidal ideation and depressive symptoms in depressed older primary care patients: A randomized controlled trial. *JAMA.* 2004;291(9):1081-1091.
308. Ewell Foster CJ, Burnside AN, Smith PK, Kramer AC, Wills A, King CA. Identification, response, and referral of suicidal youth following applied suicide intervention skills training. *Suicide Life Threat Behav.* 2017;47(3):297-308.
309. Gould MS, Cross W, Pisani AR, Munfakh JL, Kleinman M. Impact of applied suicide intervention skills training on the National Suicide Prevention Lifeline. *Suicide Life Threat Behav.* 2013;43(6):676-691.
310. Walrath C, Garraza LG, Reid H, Goldston DB, McKeon R. Impact of the Garrett Lee Smith youth suicide prevention program on suicide mortality. *Am J Public Health.* 2015;105(5):986-993.
311. Godoy Garraza L, Kuiper N, Goldston D, McKeon R, Walrath C. Long-term impact of the Garrett Lee Smith Youth Suicide Prevention Program on youth suicide mortality, 2006-2015. *J Child Psychol Psychiatry.* 2019;60(10):1142-1147.
312. Litteken C, Sale E. Long-term effectiveness of the question, persuade, refer (QPR) suicide prevention gatekeeper training program: Lessons from Missouri. *Community Ment Health J.* 2018;54(3):282-292.
313. Hart LM, Cropper P, Morgan AJ, Kelly CM, Jorm AF. Teen Mental Health First Aid as a school-based intervention for improving peer support of adolescents at risk of suicide: Outcomes from a cluster randomised crossover trial. *Aust N Z J Psychiatry.* 2020;54(4):382-392.
314. Morgan AJ, Ross A, Reavley NJ. Systematic review and meta-analysis of Mental Health First Aid training: Effects on knowledge, stigma, and helping behaviour. *PLoS One.* 2018;13(5):e0197102.
315. Teo AR, Andrea SB, Sakakibara R, Motohara S, Matthieu MM, Fetters MD. Brief gatekeeper training for suicide prevention in an ethnic minority population: A controlled intervention. *BMC Psychiatry.* 2016;16(1):211.
316. Kuhlman STW, Walch SE, Bauer KN, Glenn AD. Intention to enact and enactment of gatekeeper behaviors for suicide prevention: An application of the theory of planned behavior. *Prev Sci.* 2017;18(6):704-715.
317. Wyman PA, Brown CH, Inman J, et al. Randomized trial of a gatekeeper program for suicide prevention: 1-year impact on secondary school staff. *J Consult Clin Psychol.* 2008;76(1):104-115.
318. Holmes G, Clacy A, Hermens DF, Lagopoulos J. The long-term efficacy of suicide prevention gatekeeper training: A systematic review. *Arch Suicide Res.* 2019;25(2):177-207.
319. Gould MS, Kalafat J, Harrismunfakh JL, Kleinman M. An evaluation of crisis hotline outcomes. Part 2: Suicidal callers. *Suicide Life Threat Behav.* 2007;37(3):338-352.
320. Hannemann CM, Katz IR, McCarthy ME, Hughes GJ, McKeon R, McCarthy JF. Suicide mortality and related behavior following calls to the Veterans Crisis Line by Veterans Health Administration patients. *Suicide Life Threat Behav.* 2021;51(3):596-605.
321. Bush NE, Smolenski DJ, Denneson LM, Williams HB, Thomas EK, Dobscha SK. A virtual hope box: Randomized controlled trial of a smartphone app for emotional regulation and coping with distress. *Psychiatr Serv.* 2017;68(4):330-336.
322. Dimeff LA, Jobes DA, Koerner K, et al. Using a Tablet-Based App to Deliver Evidence-Based Practices for Suicidal Patients in the Emergency Department: Pilot Randomized Controlled Trial. *JMIR Ment Health.* 2021;8(3):e23022.
323. Torous J, Larsen ME, Depp C, et al. Smartphones, sensors, and machine learning to advance real-time prediction and interventions for suicide prevention: A review of current progress and next steps. *Curr Psychiatry Rep.* 2018;20(7):1-6.
324. Bryan CJ, Mintz J, Clemans TA, et al. Effect of crisis response planning vs. contracts for safety on suicide risk in U.S. Army Soldiers: A randomized clinical trial. *J Affect Disord.* 2017;212:64-72.
325. Stanley B, Brown GK, Brenner LA, et al. Comparison of the safety planning intervention with follow-up vs usual care of suicidal patients treated in the emergency department. *JAMA Psychiatry.* 2018;75(9):894-900.
326. Motto JA, Bostrom AG. A randomized controlled trial of postcrisis suicide prevention. *Psychiatr Serv.* 2001;52(6):828-833.

327. Hassanian-Moghaddam H, Sarjami S, Kolahi AA, Carter GL. Postcards in Persia: Randomised controlled trial to reduce suicidal behaviours 12 months after hospital-treated self-poisoning. *Br J Psychiatry*. 2011;198(4):309-316.
328. Wang YC, Hsieh LY, Wang MY, Chou CH, Huang MW, Ko HC. Coping card usage can further reduce suicide reattempt in suicide attempter case management within 3-month intervention. *Suicide Life Threat Behav*. 2016;46(1):106-120.
329. Messiah A, Notredame CE, Demarty AL, Duhem S, Vaiva G. Combining green cards, telephone calls and postcards into an intervention algorithm to reduce suicide reattempt (AlgoS): P-hoc analyses of an inconclusive randomized controlled trial. *PLoS One*. 2019;14(2):e0210778.
330. Comtois KA, Kerbrat AH, DeCou CR, et al. Effect of augmenting standard care for military personnel with brief caring text messages for suicide prevention: A randomized clinical trial. *JAMA Psychiatry*. 2019;76(5):474-483.
331. Exbrayat S, Coudrot C, Gourdon X, et al. Effect of telephone follow-up on repeated suicide attempt in patients discharged from an emergency psychiatry department: A controlled study. *BMC Psychiatry*. 2017;17(1):96.
332. Miller IW, Camargo CA, Arias SA, et al. Suicide prevention in an emergency department population: The ED-SAFE study. *JAMA Psychiatry*. 2017;74(6):563-570.
333. Boudreaux ED, Camargo CA, Arias SA, et al. Improving suicide risk screening and detection in the emergency department. *Am J Prev Med*. 2016;50(4):445-453.
334. Gysin-Maillart A, Schwab S, Soravia L, Megert M, Michel K. A novel brief therapy for patients who attempt suicide: A 24-months follow-up randomized controlled study of the Attempted Suicide Short Intervention Program (ASSIP). *PLoS Med*. 2016;13(30):e1001968.
335. Michel K, Valach L, Gysin-Maillart A. A novel therapy for people who attempt suicide and why we need new models of suicide. *Int J Environ Res Public Health*. 2017;14(3):243-258.
336. Hunkeler EM, Katon W, Tang L, et al. Long term outcomes from the IMPACT randomised trial for depressed elderly patients in primary care. *BMJ*. 2006;332(7536):259-263.
337. Unutzer J, Tang L, Oishi S, et al. Reducing suicidal ideation in depressed older primary care patients. *J Am Geriatr Soc*. 2006;54(10):1550-1556.
338. Iyengar U, Snowden N, Asarnow JR, Moran P, Tranah T, Ougrin D. A further look at therapeutic interventions for suicide attempts and self-harm in adolescents: An updated systematic review of randomized controlled trials. *Front Psychiatry*. 2018;9:583.
339. Linehan MM, Comtois KA, Murray AM, et al. Two-year randomized controlled trial and follow-up of dialectical behavior therapy vs therapy by experts for suicidal behaviors and borderline personality disorder. *Arch Gen Psychiatry*. 2006;63(7):757-766.
340. McCauley E, Berk MS, Asarnow JR, et al. Efficacy of dialectical behavior therapy for adolescents at high risk for suicide: A randomized controlled trial. *JAMA Psychiatry*. 2018;75(8):777-785.
341. Asarnow JR, Hughes JL, Babeva KN, Sugar CA. Cognitive-behavioral family treatment for suicide attempt prevention: A randomized controlled trial. *J Am Acad Child Adolesc Psychiatry*. 2017;56(6):506-514.
342. Gotzsche PC, Gotzsche PK. Cognitive behavioural therapy halves the risk of repeated suicide attempts: Systematic review. *J R Soc Med*. 2017;110(10):404-410.
343. Brown GK, Ten Have T, Henriques GR, Xie SX, Hollander JE, Beck AT. Cognitive therapy for the prevention of suicide attempts: A randomized controlled trial. *JAMA*. 2005;294(5):563-570.
344. Rudd MD, Bryan CJ, Wertenberger EG, et al. Brief cognitive-behavioral therapy effects on post-treatment suicide attempts in a military sample: Results of a randomized clinical trial with 2-year follow-up. *Am J Psychiatry*. 2015;172(5):441-449.
345. Hopko DR, Funderburk JS, Shorey RC, et al. Behavioral activation and problem-solving therapy for depressed breast cancer patients: Preliminary support for decreased suicidal ideation. *Behav Modif*. 2013;37(6):747-767.
346. Choi NG, Marti CN, Conwell Y. Effect of problem-solving therapy on depressed low-income homebound older adults' death/suicidal ideation and hopelessness. *Suicide Life Threat Behav*. 2016;46(3):323-336.
347. Comtois KA, Jobes DA, O'Connor SS, et al. Collaborative assessment and management of suicidality (CAMS): Feasibility trial for next-day appointment services. *Depress Anxiety*. 2011;28(11):963-972.
348. Pistorello J, Jobes DA, Gallop R, et al. A randomized controlled trial of the collaborative assessment and management of suicidality (CAMS) versus treatment as usual (TAU) for suicidal college students. *Arch Suicide Res*. 2021;25(4):765-789.
349. Andreasson K, Krogh J, Wenneberg C, et al. Effectiveness of dialectical behavior therapy versus collaborative assessment and management of suicidality treatment for reduction of self-harm in adults with borderline personality traits and disorders - A randomized observer-blinded clinical trial. *Depress Anxiety*. 2016;33(6):520-530.

350. Ryberg W, Zahl P, Diep LM, Landro NI, Fosse R. Managing suicidality within specialized care: A randomized controlled trial. *J Affect Disord.* 2019;249:112-120.
351. Jobes DA, Comtois KA, Gutierrez PM, et al. A randomized controlled trial of the collaborative assessment and management of suicidality versus enhanced care as usual with suicidal soldiers. *Psychiatry.* 2017;80(4):339-356.
352. Swift JK, Trusty WT, Penix EA. The effectiveness of the Collaborative Assessment and Management of Suicidality (CAMS) compared to alternative treatment conditions: A meta-analysis. *Suicide Life Threat Behav.* 2021;51(5):882-896.
353. Kim MH, Lee J, Noh H, et al. Effectiveness of a flexible and continuous case management program for suicide attempters. *Int J Environ Res Public Health.* 2020;17(7):2599.
354. Jobes DA, Vergara GA, Lanzillo EC, Ridge-Anderson A. The potential use of CAMS for suicidal youth: Building on epidemiology and clinical interventions. *Child Health Care.* 2019;48(4):444-468.
355. Dimeff LA, Jobes DA, Chalker SA, et al. A novel engagement of suicidality in the emergency department: Virtual Collaborative Assessment and Management of Suicidality. *Gen Hosp Psychiatry.* 2020;63:119-126.
356. Horowitz LM, Snyder DJ, Boudreaux ED, et al. Validation of the Ask Suicide-Screening Questions for adult medical inpatients: A brief tool for all ages. *Psychosomatics.* 2020;61(6):713-722.
357. Boudreaux ED, Jaques ML, Brady KM, Matson A, Allen MH. The patient safety screener: Validation of a brief suicide risk screener for emergency department settings. *Arch Suicide Res.*
358. Posner K, Brown GK, Stanley B, et al. The Columbia-Suicide Severity Rating Scale: Initial validity and internal consistency findings from three multisite studies with adolescents and adults. *Am J Psychiatry.* 2011;168(12):1266-1277.
359. Trivedi MH, Wisniewski SR, Morris DW, et al. Concise Health Risk Tracking scale: brief self-report and clinician rating of suicidal risk. *J Clin Psychiatry.* 2011;72(6):757-764.
360. Runeson B, Odeberg J, Pettersson A, Edbom T, Jildevik Adamsson I, Waern M. Instruments for the assessment of suicide risk: A systematic review evaluating the certainty of the evidence. *PLoS One.* 2017;12(7):e0180292.
361. Harris IM, Beese S, Moore D. Predicting future self-harm or suicide in adolescents: A systematic review of risk assessment scales/tools. *BMJ Open.* 2019;9(9):e029311.
362. Brucker K, Duggan C, Niezer J, et al. Assessing risk of future suicidality in emergency department patients. *Acad Emerg Med.* 2019;26(4):376-383.
363. Bernert RA, Hilberg AM, Melia R, Kim JP, Shah NH, Abnoui F. Artificial intelligence and suicide prevention: A systematic review of machine learning investigations. *Int J Environ Res Public Health.* 2020;17(16):5929.
364. Barak-Corren Y, Castro VM, Nock MK, et al. Validation of an electronic health record-based suicide risk prediction modeling approach across multiple health care systems. *JAMA Netw Open.* 2020;3(3):e201262.
365. Pitman A, Osborn D, King M, Erlangsen A. Effects of suicide bereavement on mental health and suicide risk. *Lancet Psychiatry.* 2014;1(1):86-94.
366. Niederkrotenthaler T, Sonneck G. Assessing the impact of media guidelines for reporting on suicides in Austria: Interrupted time series analysis. *Aust N Z J Psychiatry.* 2007;41(5):419-428.
367. Etzersdorfer E, Sonneck G. Preventing suicide by influencing mass-media reporting. The Viennese experience 1980-1996. *Arch Suicide Res.* 1998;4(1):67-74.
368. Gould MS, Kleinman MH, Lake AM, Forman J, Midle JB. Newspaper coverage of suicide and initiation of suicide clusters in teenagers in the USA, 1988-96: A retrospective, population-based, case-control study. *Lancet Psychiatry.* 2014;1(1):34-43.
369. Acosta J, Ramchand R, Becker A. Best practices for suicide prevention messaging and evaluating California's "Know the Signs" media campaign. *Crisis.* 2017;38(5):287-299.
370. Visser VS, Comans TA, Scuffham PA. Evaluation of the effectiveness of a community-based crisis intervention program for people bereaved by suicide. *J Community Psychol.* 2014;42(1):19-28.
371. Gehrman M, Dixon SD, Visser VS, Griffin M. Evaluating the outcomes for bereaved people supported by a community-based suicide bereavement service. *Crisis.* 2020;41(6):437-444.
372. Zisook S, Shear MK, Reynolds CF, et al. Treatment of complicated grief in survivors of suicide loss: A HEAL report. *J Clin Psychiatry.* 2018;79(2):17m11592.
373. Cerel J, Campbell FR. Suicide survivors seeking mental health services: A preliminary examination of the role of an active postvention model. *Suicide Life Threat Behav.* 2008;38(1):30-34.

374. Niederkrotenthaler T, Braun M, Pirkis J, et al. Association between suicide reporting in the media and suicide: Systematic review and meta-analysis. *BMJ*. 2020;368:m575.
375. Niederkrotenthaler T, Voracek M, Herberth A, et al. Media and suicide. Papageno v Werther effect. *BMJ*. 2010;341:c5841.
376. Szumilas M, Kutcher S. Post-suicide intervention programs: A systematic review. *Can J Public Health*. 2011;102(1):18-29.
377. Torok M, Calear A, Shand F, Christensen H. A systematic review of mass media campaigns for suicide prevention: Understanding their efficacy and the mechanisms needed for successful behavioral and literacy change. *Suicide Life Threat Behav*. 2017;47(6):672-687.
378. Pirkis J, Rossetto A, Nicholas A, Ftanou M, Robinson J, Reavley N. Suicide prevention media campaigns: A systematic literature review. *Health Commun*. 2019;34(4):402-414.
379. Kennedy KS, Carmichael A, Brown MM, Trudeau A, Martinez P, Stone DM. *The State of State, Territorial, and Tribal Suicide Prevention: Findings from a Web-Based Survey*; Centers for Disease Control and Prevention; 2021. Available at: <https://www.cdc.gov/suicide/pdf/State-of-the-States-Report-Final-508.pdf>.
380. Crosby AE, Ortega L, Melanson C. *Self-Directed Violence Surveillance: Uniform Definitions and Recommended Data Elements*. Atlanta, GA: Centers for Disease Control and Prevention; 2019.
381. Centers for Disease Control and Prevention. National Vital Statistics System. 2021; Atlanta, GA. Available at: <https://www.cdc.gov/nchs/nvss/deaths.htm>.
382. Centers for Disease Control and Prevention. National Violent Death Reporting System. 2021; Atlanta, GA. Available at: <https://www.cdc.gov/injury/wisqars/nvdrs.html>.
383. The National Center for the Review & Prevention of Child Deaths. U.S. Child Death Review Programs. <https://ncfrp.org/cdr/>.
384. Centers for Disease Control and Prevention. National Syndromic Surveillance Program. 2021; Atlanta, GA. Available at: <https://www.cdc.gov/nssp/index.html>.
385. Zwald ML, Holland KM, Annor FB, et al. Syndromic surveillance of suicidal ideation and self-directed violence - United States, January 2017-December 2018. *MMWR Morb Mortal Wkly Rep*. 2020;69(4):103-108.
386. Yard E, Radhakrishnan L, Ballesteros MF, et al. Emergency department visits for suspected suicide attempts among persons aged 12-25 years before and during the COVID-19 pandemic--United States, January 2019-May 2021. *MMWR Morb Mortal Wkly Rep*. 2021;70888-894.
387. Smalley CM, Malone DA, Meldon SW, et al. The impact of COVID-19 on suicidal ideation and alcohol presentations to emergency departments in a large healthcare system. *Am J Emerg Med*. 2020;41:237-238.
388. Czeisler ME, Lane RI, Petrosky E, et al. Mental health, substance use, and suicidal ideation during the COVID-19 pandemic--United States, June 24-30, 2020. *MMWR Morb Mortal Wkly Rep*. 2020;69(32):1049-1057.
389. Brener ND, Kann L, Shanklin S, et al. Methodology of the Youth Risk Behavior Surveillance System--2013. *MMWR Recomm Rep*. 2013;62(1):1-20.
390. Substance Abuse and Mental Health Services Administration. Behavioral health trends in the United States: Results from the 2014 National Survey on Drug Use and Health. 2015; Rockville, MD. Available at: <https://www.samhsa.gov/data/report/behavioral-health-trends-united-states-results-2014-national-survey-drug-use-and-health>.
391. Walkup JT, Townsend L, Crystal S, Olfson M. A systematic review of validated methods for identifying suicide or suicidal ideation using administrative or claims data. 2012;21(S1):174-182.
392. Centers for Disease Control and Prevention. ICD-10-CM Official Guidelines for Coding and Reporting. 2021; Atlanta, GA. Available at: <https://www.cdc.gov/nchs/data/icd/10cmguidelines-FY2021.pdf>.
393. Owens PL, McDermott KW, Lipari RN, Hambrick MM. *Emergency Department Visits Related to Suicidal Ideation or Suicide Attempt, 2008-2017*. Rockville, MD: Agency for Healthcare Research and Quality; 2020. Available at: <https://pubmed.ncbi.nlm.nih.gov/33074641/>.
394. Owens PL, Fingar KR, Heslin KC, Mutter R, Booth CL. *Emergency Department Visits Related to Suicidal Ideation, 2006-2013*. Rockville, MD: Agency for Healthcare Research and Quality; 2017. Available at: <https://pubmed.ncbi.nlm.nih.gov/28722846/>.
395. Acosta JD, Ramchand R, Becker A, Felton A, Kofner A. *RAND Suicide Prevention Program Evaluation Toolkit*. RAND Corporation; 2013. Available at: <https://www.rand.org/pubs/tools/TL111.html>.

APPENDIX

SUMMARY OF STRATEGIES AND APPROACHES TO PREVENT SUICIDE

 STRATEGY: STRENGTHEN ECONOMIC SUPPORTS				
Approach/Program, Practice or Policy	Suicide	Suicide Ideation or Attempts	Other Risk/Protective Factors for Suicide	Lead Sectors
IMPROVE HOUSEHOLD FINANCIAL SECURITY				
<u>Unemployment insurance benefits</u>	▲		▲	+ Government (local, state, federal) + Business/Labor
Other unemployment support practices (e.g., job skills training)	▲		▲	
Other household financial security measures (e.g., <u>transfer payments, medical benefits, and family assistance</u>)	▲		▲	
State supplements to federal <u>Earned Income Tax Credits</u>	▲		▲	
<u>Supplemental Nutrition Assistance Program</u>	▲		▲	
<u>Early access to Social Security benefits</u>	▲		▲	
<u>Increased minimum wages</u>	▲		▲	
STABILIZE HOUSING				
Rent assistance to renters with lower incomes			▲	
Low-barrier housing for individuals experiencing chronic homelessness		▲		
Veterans Health Administration homeless programs	▲			



STRATEGY: CREATE PROTECTIVE ENVIRONMENTS

Approach/Program, Practice or Policy	Suicide	Suicide Ideation or Attempts	Other Risk/Protective Factors for Suicide	Lead Sectors
REDUCE ACCESS TO LETHAL MEANS AMONG PERSONS AT RISK OF SUICIDE				
Interventions to reduce readily accessible environmental means (e.g., bridges, pesticides)	▲			
Safe storage (e.g., Counseling on Access to Lethal Means (CALM))	▲			+ Government (local, state)
Child Access Prevention (CAP) laws to reduce firearm self-injuries and suicides among young people	▲			+ Public Health + Healthcare + Business/Labor
Mandatory waiting periods to reduce firearm suicides	▲			
CREATE HEALTHY ORGANIZATIONAL POLICIES AND CULTURE				
United States Air Force Suicide Prevention Program	▲		▲	+ Government (local, state, federal)
Together for Life	▲			+ Military
Strong Schools Against Suicidality and Self-Injury			▲	+ Justice + Education
Correctional suicide prevention	▲		▲	
REDUCE SUBSTANCE USE THROUGH COMMUNITY-BASED POLICIES AND PRACTICES				
Reduce alcohol outlet density	▲	▲		+ Government (local, state)
Prescription drug supply restrictions (e.g., PDMPs)	▲			+ Business/Labor



STRATEGY: IMPROVE ACCESS AND DELIVERY OF SUICIDE CARE

Approach/Program, Practice or Policy	Suicide	Suicide Ideation or Attempts	Other Risk/ Protective Factors for Suicide	Lead Sectors
COVER MENTAL HEALTH CONDITIONS IN HEALTH INSURANCE POLICIES				
Mental health parity laws	▲		▲	+ Government (state, federal) + Healthcare
INCREASE PROVIDER AVAILABILITY IN UNDERSERVED AREAS				
National Health Service Corps			▲	+ Government (federal)
Community mental health clinics		▲		+ Healthcare
PROVIDE RAPID AND REMOTE ACCESS TO HELP				
Telemental health (e.g., telephone, clinical video appointments)			▲	+ Healthcare + Public health
Mobile applications			▲	+ Business/ Labor
Internet-delivered cognitive behavior therapy		▲	▲	
CREATE SAFER SUICIDE CARE THROUGH SYSTEMS CHANGE				
Zero Suicide	▲		▲	+ Healthcare



STRATEGY: PROMOTE HEALTHY CONNECTIONS

Approach/Program, Practice or Policy	Suicide	Suicide Ideation or Attempts	Other Risk/ Protective Factors for Suicide	Lead Sectors
PROMOTE HEALTHY PEER NORMS				
Sources of Strength			▲	+ Public Health + Education
Wingman-Connect		▲	▲	
ENGAGE COMMUNITY MEMBERS IN SHARED ACTIVITIES				
Greening vacant urban spaces			▲	+ Public Health + Government (local) + Community Nonprofit



STRATEGY: TEACH COPING AND PROBLEM-SOLVING SKILLS

Approach/Program, Practice or Policy	Suicide	Suicide Ideation or Attempts	Other Risk/ Protective Factors for Suicide	Lead Sectors
SUPPORT SOCIAL-EMOTIONAL LEARNING PROGRAMS				
Youth Aware of Mental Health Program		▲	▲	
Good Behavior Game		▲	▲	
Aussie Optimism Program			▲	
Signs of Suicide		▲	▲	
TEACH PARENTING SKILLS TO IMPROVE FAMILY RELATIONSHIPS				+ Public Health + Education + Social Services + Nonprofit
The Incredible Years			▲	
Strengthening Families Program			▲	
Family Check-Up		▲		
Family Bereavement Program		▲		
Familias Unidas		▲		
After Deployment Adaptive Parenting Tools (ADAPT)		▲	▲	
SUPPORT RESILIENCE THROUGH EDUCATION PROGRAMS				
Resilience training programs (e.g., colleges, workplaces)			▲	+ Education + Business/ Labor



STRATEGY: IDENTIFY AND SUPPORT PEOPLE AT RISK

Approach/Program, Practice or Policy	Suicide	Suicide Ideation or Attempts	Other Risk/ Protective Factors for Suicide	Lead Sectors
TRAIN GATEKEEPERS				
Applied Suicide Intervention Skills Training			▲	
Garrett Lee Smith Youth Suicide Prevention Program			▲	+ Government (federal)
Question Persuade Refer (QPR)			▲	+ Public Health + Healthcare
Mental Health First Aid and Teen Mental Health First Aid			▲	
RESPOND TO CRISES				
National Suicide Prevention Lifeline (now called 988 Suicide & Crisis Lifeline)		▲	▲	+ Government (local, state, federal)
Virtual Hope Box (VHB)			▲	+ Social Services + Healthcare
Jaspr Health			▲	+ Business/Labor
PLAN FOR SAFETY AND FOLLOW-UP AFTER AN ATTEMPT				
Safety planning		▲		
Safety Planning Intervention with Structured Follow-up (SPI+)		▲		
Follow-up contacts	▲	▲		+ Healthcare + Social services
Emergency Department Safety Assessment and Follow-up Evaluation (ED SAFE)	▲	▲		
Attempted Suicide Short Intervention Program		▲	▲	
PROVIDE THERAPEUTIC APPROACHES				
Improving Mood – Promoting Access to Collaborative Treatment (IMPACT)		▲	▲	
Prevention of Suicide in Primary Care Elderly Clinical Trial (PROSPECT)		▲	▲	+ Healthcare
Dialectical Behavior Therapy (DBT)		▲	▲	

STRATEGY: IDENTIFY AND SUPPORT PEOPLE AT RISK
(CONTINUED)

Approach/Program, Practice or Policy	Suicide	Suicide Ideation or Attempts	Other Risk/ Protective Factors for Suicide	Lead Sectors
PROVIDE THERAPEUTIC APPROACHES (CONTINUED)				
SAFETY		▲		
CBT for Suicide Prevention (CBT-SP)		▲		+ Healthcare
Brief CBT (BCBT)		▲		
Problem Solving Therapy (PST)		▲	▲	
Collaborative Assessment and Management of Suicidality (CAMS)		▲	▲	



STRATEGY: LESSEN HARMS AND PREVENT FUTURE RISK

Approach/Program, Practice or Policy	Suicide	Suicide Ideation or Attempts	Other Risk/ Protective Factors for Suicide	Lead Sectors
INTERVENE AFTER A SUICIDE				
StandBy Support After Suicide		▲	▲	+ Healthcare
Complicated Grief Treatment		▲		+ Public Health + Social Services
Family Bereavement Program		▲	▲	
REPORT AND MESSAGE ABOUT SUICIDE SAFELY				
Safe Reporting Guidelines	▲			+ Public Health + Media



**Centers for Disease
Control and Prevention**
National Center for Injury
Prevention and Control

www.cdc.gov/suicide