

SUICIDE PREVENTION RESEARCH PRIORITIES

Problem Description

Suicide is a critical public health problem in the United States. It is a leading cause of death in the United States, especially for persons 10 to 34 years of age. In 2019, more than 47,500 people died by suicide. Yet, suicide deaths represent just the tip of the iceberg. In 2019, 12 million adults reported serious thoughts of suicide during the past year, 3.5 million planned a suicide, and 1.4 million attempted suicide. Suicides and suicide attempts in 2019 led to a lifetime combined medical and lost work costs of approximately \$70 billion.

In 2012, the National Action Alliance for Suicide Prevention (Action Alliance) developed a National Strategy for Suicide Prevention. In 2021, the Surgeon General released a Call to Action to implement this National Strategy. In 2017, the Action Alliance and the American Foundation for Suicide Prevention put forth a national goal to reduce suicide rates by 20% by 2025. In 2020, the CDC Injury Center released its first [suicide prevention strategic plan](#), which includes a focus on expanding research on suicide to inform comprehensive prevention efforts. CDC's suicide prevention Research Priorities outlined below align with the strategic plan as well as with the Surgeon General's Call to Action, and address key gaps in our current understanding of suicide prevention. Addressing these research gaps will expand the evidence base for prevention strategies in disproportionately affected populations and identify strategies that can result in population-level reductions in suicide. CDC's research will also strengthen methods for measuring suicide and associated risk and protective factors. These efforts will support communities in their efforts to achieve substantial reductions in suicide.

Research Gaps and Priorities



Identify **risk and protective factors** associated with suicide among groups at higher risk.

From 2018 to 2019, the overall suicide rate declined for the first time in over a decade. However, despite this overall drop, many groups did not experience declines and continue to experience suicide rates that are higher than the general population. While a substantial amount of suicide prevention research has been conducted in recent years, a greater depth of understanding is needed to address disproportionately affected groups (e.g., rural populations, veterans, tribal populations, youth). Research has shown that suicide is preventable and that risks for suicide extend beyond mental health conditions. Factors increasing or decreasing suicide risk occur at the individual, relationship, community, and societal levels. For example, mental illness, substance use, job and financial problems, high-conflict or violent relationships, social isolation, lack of community connectedness, barriers to suicide-related care, and access to lethal means can increase risk. Conversely, coping and problem-solving skills; connections to friends, family, and community support; availability of physical and mental health care; and limited access to lethal means can decrease risk. While much is known about risk factors for suicide in general, less is known about protective factors. There is also little known about potential synergies between combinations of various risk and/or protective factors that could amplify risk or protective effects. Identifying and understanding protective factors for suicide is critically important for prevention. In addition, more research is needed to identify the constellation of risk and protective factors among disproportionately affected populations to address health equity.

<https://www.cdc.gov/injury/researchpriorities>



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

For example,

- a. What are the key protective factors (or combination of factors) that lower the likelihood of suicide among disproportionately affected populations?
- b. What are the key risk factors (or combination of factors) that increase the likelihood of suicide among disproportionately affected populations?
- c. What factors (or combination of factors) protect individuals who are experiencing suicidal ideation from attempting or dying by suicide?

Given the myriad factors associated with suicide, multiple opportunities for prevention and intervention exist. Delving deeper into risk and protective factors and exploring their interactions will enable public health practitioners to take action to design more effective and culturally relevant suicide prevention programs, particularly for those in greatest need.



Develop and evaluate **community- and population-based approaches** to suicide prevention.

Suicide prevention strategies have historically focused on individual-level mental health treatment and crisis intervention. Although these strategies are a critical part of the solution, a comprehensive approach that achieves highest impact will arise from adapting and evaluating population- and evidence-based prevention approaches for groups at higher risk, ideally before people become suicidal. Preventing suicide requires finding effective ways to identify populations at greatest risk and then developing, implementing, and evaluating tailored programs and policies. For example,

- a. Which community-based programs, policies, and practices (or combination) are most effective and economically efficient at preventing suicide?
- b. Which strategies that reduce access to lethal means among people at risk for suicide are most effective, and how does effectiveness vary across demographic or geographic groups?
- c. Which injury and violence (e.g., adverse childhood experiences, intimate partner violence, community violence, overdose/substance use) prevention strategies with the best available evidence also show evidence of addressing common risk and protective factors for suicide?
- d. What is the impact of public education, communication, and prevention messaging interventions on reducing suicide and suicide risk?
- e. What factors contribute to or inhibit successful implementation and replication of suicide prevention strategies?

Developing, enhancing, and rigorously evaluating innovative and culturally relevant prevention strategies at the population level will advance the science to help communities prevent more suicides.



Improve methods to **measure and analyze** suicide-related risk factor data to inform monitoring of trends, etiological research, and evaluation of prevention strategies.

Progress has been made in improving the timeliness and comprehensiveness of mortality data in recent years; however, measurement gaps related to data quality and utility remain. Suicides can be misclassified, especially when they are related to drug overdoses. Key variables (e.g., race) are sometimes missing or misclassified. Research to identify and examine novel approaches to enhancing the utility of existing data (e.g., emergency department data) and emerging data sources (e.g., social media) can improve our ability to track and monitor the problem, inform prevention strategies, and enable early warning of potential increases in suicide rates or risk factors. These methods can also inform strategies for enhancing completeness of data on risk factors for suicide attempts. Examples of research questions include the following:

- a. How can data quality (e.g., misclassification, completeness) of existing sources be improved?
- b. What is the validity and utility of non-traditional data sources (e.g., social media, syndromic surveillance) for monitoring suicide or factors associated with suicide?
- c. What innovative analytic tools, methods, and techniques (e.g., artificial intelligence, machine learning, natural language processing, data visualizations) can be used to track and monitor suicide-related outcomes?
- d. How can short-to-medium term proxy measures for suicide (e.g., coping mechanisms, resilience) be measured and used in addressing suicide prevention?

The results from research under this priority will help improve measurement and monitoring of suicides, self-harm, and their risk factors and will ultimately help improve epidemiologic and prevention research.