

# CDC Guidance for Communities Assessing, Investigating and Responding to Suicide Clusters, United States, 2024



**U.S. Department of Health and Human Services**  
Centers for Disease Control and Prevention

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# Background and Rationale — CDC Guidance for Communities Assessing, Investigating, and Responding to Suicide Clusters, United States, 2024

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## Summary

To assist community leaders in public health, mental health, education, and other fields with developing a community response plan for suicide clusters or for situations that might develop into suicide clusters, in 1988, CDC published Recommendations for a Community Plan for the Prevention and Containment of Suicide Clusters (MMWR Suppl 1988;37[No. Suppl 6]:1–12). Since that time, the reporting and investigation of suicide cluster events has increased, and more is known about cluster risk factors, assessment, and identification. This supplement updates and expands CDC guidance for assessing, investigating, and responding to suicide clusters based on current science and public health practice. This report is the first of three in the MMWR supplement that describes an overview of suicide clusters, information about the other reports in this supplement, methods used to develop the supplement guidance, and the intended use of the supplement reports. The second report, CDC Guidance for Community Assessment and Investigation of Suspected Suicide Clusters — United States 2024, describes the potential methods, data sources and analysis that communities can use to identify and confirm suspected suicide clusters, and better understand the relevant issues. The final report, CDC Guidance for Community Response to Suicide Clusters — United States, 2024, describes how local public health and community leaders can develop a response plan for suicide clusters. The guidance in this supplement is intended as a conceptual framework that can be used by public health practitioners and state and local health departments to develop response plans for assessing and investigating suspected clusters that are tailored to the needs, resources, and cultural characteristics of their communities.

## Introduction

In 2021, approximately 48,000 lives were lost to suicide in the United States (1). During this time, suicide was among the 10 leading causes of death among persons aged 10–64 years and the second leading cause of death among children and adolescents aged 10–14 and adults aged 25–34 years. Suicide rates peaked in 2018, followed by two consecutive years of declines (5%) during COVID-19; during 2020–2021, rates nearly rebounded to the 2018 peak (1,2). Age-adjusted rates increased approximately 36% from 10.4 suicides per 100,000 population in 2000 to 14.1 in 2021 (1,3). Many more persons think about or attempt suicide. In 2021, a total of 12.3 million U.S. adults reported serious thoughts of suicide, 1.7 million attempted suicide (4), 22% of high school students seriously considered suicide, and 10% attempted suicide (5).

When a group of suicides or suicide attempts occur closer together in time, space, or both than would normally be expected in a community, they are defined as a suicide cluster (6,7). Suicide clusters are rare and are believed to comprise only

a small proportion of overall deaths by suicide; for example, in the United States, an estimated 1%–2% of teenage suicides are part of clusters (8). However, suicide clusters can have unique characteristics and challenges and, when they occur, are often highly publicized and can have considerable negative effects on the community, including prolonged grief and elevated fear and anxiety about further deaths (9,10).

## Overview and Types of Suicide Clusters

Suicide clusters have been reported in diverse populations and settings including psychiatric inpatients (11,12), teenagers and young adults (8,13–15), schools (16–18), prison inmates (19,20), and American Indian and Native American communities (21–25). The two most commonly reported types of suicide clusters are point clusters and mass clusters. Point clusters (or spatial-temporal clusters) represent a greater-than-expected number of suicides or suicide attempts that occur within a time period in a specific location (<https://www.cdc.gov/suicide/resources/suicide-clusters.html>). Point clusters might occur in a community/county or an institution such as a school, university, or psychiatric inpatient setting.

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Mass clusters (or temporal clusters) represent a greater-than-expected number of suicides or suicide attempts spread out geographically within a time period (<https://www.cdc.gov/suicide/resources/suicide-clusters.html>).

The causes of suicide clusters are not well understood. Available reports of point clusters tend to only describe the characteristics of decedents involved in the cluster and are not designed to rigorously assess risk. Persons involved in point clusters tend to be male and adolescents or young adults and have a history of substance use, self-harm, and mental illness (7,26–28). Risk factors for point clusters are postulated to be the same as general risk factors for suicide (28) and therefore do not aid in identifying those most at risk for becoming part of a suicide cluster.

Certain methodological barriers have been identified that preclude better understanding of cluster risks. These barriers include selection bias in the available reported clusters, limited opportunities for comparison groups, relatively small numbers of suicides in diverse populations, and the absence of a standard definition for time and space parameters (28,29), which make combining or comparing individual case studies challenging. In addition, no standard analytic approach exists to test whether the observed number of suicides is greater than expected. Several different methods have been used, including the application of spatial statistics using geographic information systems, and statistical methods such as Knox, Poisson, and Scan tests (30–32). These methods can individually serve the organizations and communities experiencing potential clusters but also complicate fully understanding the overall risk for clusters.

Although understanding and evidence of what triggers suicide clusters is lacking, suicide clusters, especially mass clusters, might occur through a process of contagion (i.e., when the exposure to the suicide or suicidal behavior of one or more persons influences others to attempt suicide) (26). An exposure can be direct by having a personal connection to the person who has died by suicide, or indirect through media reporting or social media posts about a person who was not a personal connection (28). Media influence can be both a risk and protective factor depending on its duration, prominence of source, messaging, and extent of coverage (33,34).

Media reporting of suicides might be a risk factor when it unintentionally influences increases in suicides, particularly in reporting that mentions the suicide method in the headline and in the text, and includes a statement that suicide is inevitable (35). When similar suicides occur after this type of media reporting, the increase might be attributed to the “Werther effect” (also called copycat behavior) (34,36,37). Media

influence can relate to point clusters as well as mass clusters. For example, extensive and prominent news coverage of suicides has been reported to play a role in the emergence of point clusters among youth (33). Several reports have documented increases in suicide rates following media reports of high-profile celebrities, who might be considered models for imitation (38–41). In addition, there might be unintended negative consequences of entertainment media portrayals of suicide that do not adhere to best practices for safe reporting (42,43).

Conversely, responsible media reporting of suicide can be a protective factor and make a positive contribution to prevention efforts by educating the public about coping strategies and treatment (“Papageno effect”) (34,44,45). Accepted best practices (<https://reportingonsuicide.org>) for reporting on suicide include reporting suicide as a public health problem, including resources (e.g., hotline information and treatment options), providing warning signs, using appropriate language (e.g., “died by suicide” instead of “committed suicide”), emphasizing help and hope, and including information from suicide prevention or mental health experts, and providing resources, such as the recently updated 988 number for the national Suicide & Crisis Lifeline (<https://988lifeline.org>).

## About this Supplement

CDC has developed new expanded guidance for investigating and responding to potential suicide clusters by using updated information from the literature on suicide clusters, input from subject matter experts, and experiences of public health practitioners and others involved in a cluster identification. The second report in this supplement, *CDC Guidance for Community Assessment and Investigation of Suspected Suicide Clusters—United States, 2024* (46), describes for communities the potential methods and data sources that can be monitored for suicide clusters or be further analyzed to confirm suspected suicide clusters and builds on the 1990 CDC Guidelines for Investigating Clusters of Health Events (47), which considered clusters of noninfectious diseases, injuries, birth defects, and previously unrecognized syndromes or illnesses, but frames its content and guidance to suicide clusters, which have unique characteristics and challenges. The third report, *CDC Guidance for Community Response to a Suicide Cluster—United States, 2024* (48), describes guidance to assist local public health and community leaders on how to develop a community response plan for suicide clusters. This supplement updates and expands the guidance from the 1988 CDC document (6).

## Methods

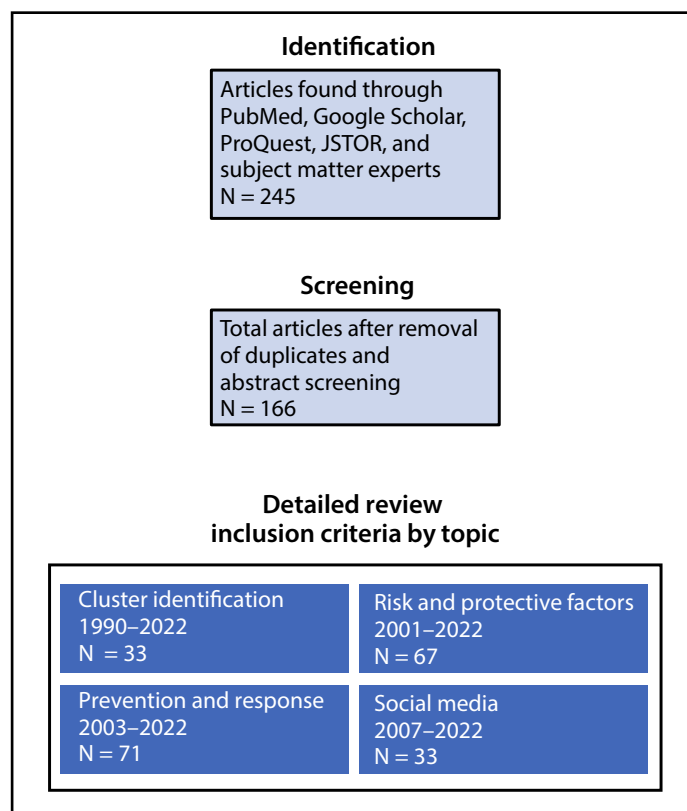
To gather information for the second and third reports in this supplement, in September 2021, staff members from the Division of Injury Prevention in CDC's National Center for Injury Prevention and Control including behavioral scientists, epidemiologists, and developmental psychologists, with support from a contracted consultant team, Ross Strategic, initiated activities that included a literature review, environmental scan, media review, and input from subject matter experts in the field.

### Literature Review, Environmental Scan, and Media Review

The CDC team conducted a literature review of suicide cluster research to determine the latest science on suicide cluster identification, risk and protective factors, opportunities for using social media as a tool for prevention and response, and best practices and challenges for identifying and responding to suspected clusters. The team searched the English-language published literature via PubMed, Google Scholar, ProQuest, and JSTOR. The following keywords were used to search English language journals: “suicide clusters” OR “suicide cluster” OR “suicide contagion” and “risk factors” or “identifying” or “protective factors” or “prevention” or “containment” or “demographics” or “social media” or “media.” For cluster identification and social media publications, searches went back in time as far as possible with the earliest paper included published in 1990; however, for risk and protective factors, and prevention and response, the search as restricted to publications after 2000 to focus on the most recent reports. No geographic restrictions were placed on articles included. In addition, the team included articles from the CDC's Suicide, Suicide Attempt, or Self-Harm Clusters website (<https://www.cdc.gov/suicide/resources/suicide-clusters.html>) and articles provided by suicide cluster subject matter experts.

This process resulted in 245 articles. Duplicates were removed and abstracts were reviewed to exclude articles on suicide risk and protective factors that were not specific to clusters. All suicide-related social media articles were included even if they were not specifically about clusters because of the limited number of publications in this area. This process resulted in 166 articles that discussed cluster identification (included papers published during 1990–2022), risk and protective factors (2001–2022), prevention and response (2003–2022), and social media (2007–2022) (Figure). The quality of the literature was not formally assessed because of the relatively small number of publications found. Although

FIGURE. Number of articles identified, screened, and included during literature review of suicide clusters\*, CDC guidance, 2024



\* Article counts by topic area are not mutually exclusive. There were no geographic restrictions.

findings from international settings would largely apply to the United States, some issues described might be unique to specific cultural environments.

In addition, the team conducted an environmental scan that included eight internal Epidemiologic Assistance (Epi-Aid) reports from 2004–2018 documenting CDC support to local health jurisdictions to investigate and respond to a suspected suicide cluster. Other local investigations might have occurred without CDC involvement, and the team was not able to identify related reports to include in the review. The team also reviewed U.S. media reports during 2017–2022 to gather additional contextual information from communities that identified and responded to a suicide cluster but did not request Epi-Aid support from CDC. Media reports were identified through a Google News search of terms such as “suicide clusters united states.” A total of 14 news articles about clusters at the city, county, or university-level were identified and reviewed. Findings from reviews and scans might not be representative of all suicide clusters because of publication bias.

## Input from Subject Matter Experts

From December 2021 to May 2022, the team collected qualitative data through outreach to researchers and public health practitioners with suicide cluster subject matter expertise to gather input on lessons learned based on experiences responding to suspected suicide clusters; opportunities and challenges for using social media and the internet for suicide cluster identification, prevention, and response; and strengths and limitations of syndromic surveillance systems for identifying clusters. To do this, CDC participated in various virtual online meetings with grantees of three CDC-funded programs: Emergency Department Surveillance of Nonfatal Suicide-Related Outcomes (<https://www.cdc.gov/suicide/programs/ed-snsro/index.html>); Comprehensive Suicide Prevention (<https://www.cdc.gov/suicide/programs/csp/index.html>); and Injury Control Research Centers (<https://www.cdc.gov/injury/erpo/icrc/index.html>). In addition, CDC's Center for Surveillance, Epidemiology, and Laboratory Services, which runs the National Syndromic Surveillance Program, provided information about how syndromic surveillance systems can be used for cluster detection and responses by communities. The team also attempted to connect with health departments who requested support from CDC for suicide cluster response during 2004–2018 to better understand key lessons from Epi-Aid investigations. Three health departments responded with feedback via email. In addition, the team conducted an online virtual topical focus group and individual virtual interviews with social media subject matter experts to discuss its role in suicide clustering. Social media subject matter experts were identified through suggestions from knowledgeable CDC team members and from author lists from published papers on this topic. Although all participants came from a convenience sample of subject matter experts known by the team, their input was critical to informing the guidance in this supplement. These discussions did not seek consensus from external subject matter experts on guidance or activities but were used to gather more information to inform CDC's development of the reports in this supplement. Discussion questions used are presented (Box).

CDC used the information from the literature review, environmental scan, media review, and subject matter expert discussions to draft the reports and guidance in this

supplement. Several additional external partners reviewed the drafts and provided high-level feedback, which CDC discussed and incorporated, as needed. *CDC Guidance for Community Assessment and Investigation of Suspected Suicide Clusters—United States, 2024* (46), describes guidance on responding to initial concerns for a suspected suicide cluster, confirming a cluster, and conducting an epidemiologic investigation. *CDC Guidance for Community Response to a Suicide Cluster—United States, 2024* (48), describes guidance on preparatory community action before cluster identification, direct response to the cluster, and action to help prevent the next cluster.

## Use of this Supplement

The guidance in this supplement is intended for public health practitioners, and state and local health departments. The guidance should not be considered explicit instructions to be followed by every community, but as suggestions on best practices. This information is meant to provide community leaders with a conceptual framework for assessing and investigating suspected clusters and developing their own suicide-cluster-response plans. These plans can be tailored to the particular needs, resources, and cultural characteristics of their communities.

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### Conflicts of Interest

All authors have completed and submitted the International Committee of Medical Journal Editors form for disclosure of potential conflicts of interest. No potential conflicts of interest were disclosed.

## BOX. Discussion questions used for subject matter expert\* outreach, CDC guidance, 2024

**Emergency Department Surveillance of Nonfatal Suicide-Related Outcomes Grantees**

- How are states using syndromic surveillance data for cluster detection?
  - Do you review your syndromic data regularly to look for clusters and suicide attempts?
  - How do you monitor changes in visit trends for suicide related visits (i.e., what data sources are used, what indicators or syndromes are tracked, and do you use temporal or spatial alerts)?
  - How is a suicide cluster confirmed?
- Who has investigated a suicide cluster?
  - What challenges did you experience when investigating suicide clusters?
- How are states responding to suicide clusters?
  - What do you do after you confirm an increase in suicide related visits (e.g., follow up with the facility and send out public health messaging to the community)?
  - How do you work with partners in your response (e.g., target prevention and control efforts, liaise with school counselors or school-based organizations, and who else do you work with)?
  - What caveats are there when sharing counts/data for state and local partners? What's the threshold for visit suppression?
- What can CDC include in updated suicide cluster guidance that would be helpful?

**Comprehensive Suicide Prevention Grantees**

- Has your health department investigated any recent suicide clusters?
- What challenges did you experience when investigating suicide clusters?
- What can CDC include in updated suicide cluster guidance that would be helpful?

**Injury Control Research Centers**

- Has your injury control research center performed research on suicide clusters, or assisted in the investigation of a suicide cluster?

- Based on your experiences, what do you think are the common challenges in researching or investigating suicide clusters?
- Are there any materials that CDC could develop or provide that would be helpful for future suicide cluster research or investigations?

**Health Departments That Requested CDC Assistance for Suicide Cluster Investigations**

- What alerted/indicated to you that there was a suicide cluster?
  - What factors led to initiating a full investigation?
  - How were suspected clusters confirmed?
- What happened once a cluster was identified and before you contacted CDC?
- What led to your decision to contact CDC?
- How were the findings and recommendations from the Epi-Aid used?
- What follow-up activities were implemented after the Epi-Aid investigation (e.g., changing environmental elements that might increase the likelihood of further suicides or suicide attempts and addressing potential long-term issues)? How well did it work?
- Looking back on the investigation, was there anything you wish was different?
  - Was there anything missing from the investigation?
  - Was there anything more that you needed?
  - What worked well/didn't work well?
- Is there anything else about that experience that you think might be useful to share with us?

**Social Media Experts**

- How can social media and other online web sources (e.g., Google Analytics) be used to identify clusters?
- How can social media be a part of the response to a cluster (risk factor/harmful effects, Papageno effect<sup>†</sup>)?
- What other considerations are there for social media and suicide clusters?

\* Fewer than 10 respondents participated within each subject matter expert group.

<sup>†</sup> Responsible media reporting of suicide being a protective factor and making a positive contribution to prevention efforts by educating the public about coping strategies and treatment.

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# CDC Guidance for Community Assessment and Investigation of Suspected Suicide Clusters, United States, 2024

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## Summary

*This report is the second of three reports in the MMWR supplement updating CDC's guidance for investigating and responding to suicide clusters. The first report, Background and Rationale — CDC Guidance for Assessing, Investigating, and Responding to Suicide Clusters, United States, 2024, describes an overview of suicide clusters, methods used to develop the supplement guidance, and intended use of the supplement reports. The final report, CDC Guidance for Community Response to Suicide Clusters, United States, 2024, describes how local public health and community leaders can develop a response plan for suicide clusters. This report provides updated guidance for the approach to assessing and investigating suspected suicide clusters. Specifically, this approach will guide lead agencies in determining whether a confirmed suicide cluster exists, what concerns are in the community, and what the specific characteristics are of the suspected or confirmed suicide cluster. The guidance in this report is intended to support and assist lead agencies and their community prepare for, assess, and investigate suicide clusters. The steps provided in this report can be adapted to the local context, culture, capacity, circumstances, and needs for each suspected suicide cluster.*

## Introduction

Suicide is among the 10 leading causes of death among persons aged 10–64 years, and the age-adjusted rates of suicide for overall population of all ages increased approximately 36%, from 10.4 suicides per 100,000 population in 2000 to 14.1 in 2021 (1,2). Suicide deaths are just one part of assessing the public health problem of suicide and its contributing factors (3,4). Many more persons think about, plan, and attempt suicide (3–6). Monitoring these suicide-related events is a key component of prevention and might reveal when an unusual pattern or a cluster of suicides or suicide attempts have occurred.

Suicide clusters are a group of suicides or suicide attempts that occur closer together in time, space, or both than would normally be expected in a community (7,8). The two most common types of clusters reported are point clusters (i.e., spatial-temporal clusters) and mass clusters (i.e., temporal clusters) (9). Point clusters occur in a defined geographic location (e.g., school, institution, county, or tribe). Clusters also might be geographically dispersed over long distances (e.g., after a celebrity suicide), which is known as a mass cluster (10–15).

Notification of a potential suicide cluster, assessing and investigating a suspected suicide cluster, and responding to a cluster by taking community-specific actions might stop a suicide cluster from continuing and might prevent further

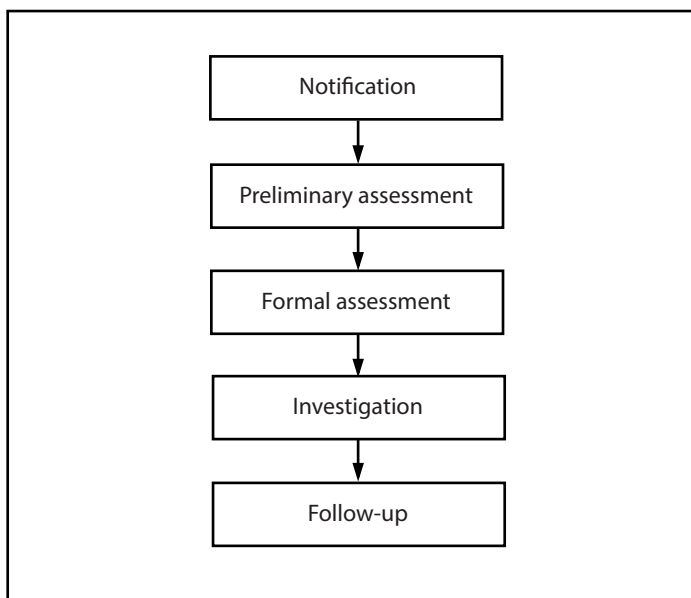
suicides and any other effects related to the suspected suicide cluster (9,16,17). Although suicide clusters are rare, their presence or suspected presence can create a high degree of anxiety and fear of future deaths or injuries in communities (18). Steps can be taken within communities to help assuage this anxiety and assist with preparing for an assessment and investigation of a suspected cluster as well as a community response, if needed (Figure 1). Further, these efforts do not stop with a defined cluster or community response because follow-up assessments, investigations, and updated responses might continue as needed.

## Receiving Notification About a Potential Suicide Cluster

Notification of a suspected suicide cluster comes to an agency's attention through a various sources. External sources can include local community partners, schools, hospitals, medical examiner or coroner's offices, other institutions or departments, news media, suicide prevention practitioners, state suicide prevention offices, and concerned citizens. Sources that are internally a part of the agency might include, but are not limited to, suicide surveillance groups and public health or other officials' tracking and monitoring suicide, suicide attempts, and other suicide-related outcomes (19–21). When a notification is received by the lead agency (defined as the agency that receives or acts upon the notification of a suspected cluster), the agency might use the guidance to determine action steps.

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FIGURE 1. Steps to assess suspected suicide clusters, CDC guidance, 2024\*



\* In certain instances, initiation of a community response simultaneously during the other steps might be warranted.

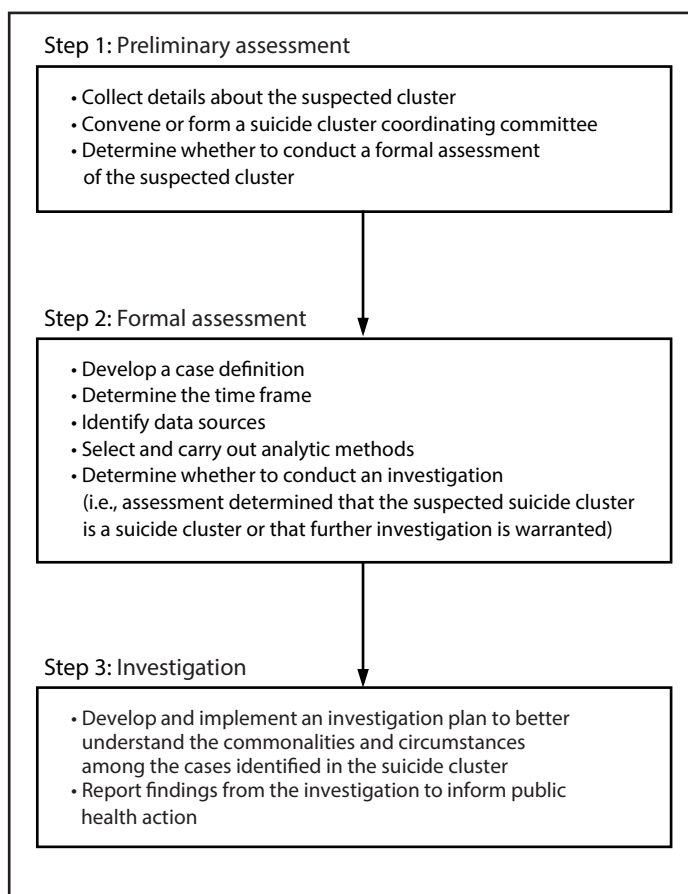
## Approach to Assess and Investigate a Suspected Suicide Cluster

A lead agency can use a three-step approach when notified of a suspected suicide cluster (Figure 2). The first step is to conduct a preliminary assessment of the information obtained to determine whether a formal assessment is warranted. The second step is to conduct a formal assessment of the suspected cluster to determine whether it meets the definition of a cluster. The third step is to conduct an investigation to identify commonalities or similarities in cases that can guide a community response. Each lead agency might adapt the steps to fit their community’s capacity, circumstances, and needs. This report uses the terms assessment and investigation to signify different actions. Assessment is used to describe analyses that might determine if a suspected suicide cluster is a suicide cluster. Investigation is used to describe further analyses to better understand the commonalities and circumstances among the cases identified in the suicide cluster. In certain instances, initiating a community response simultaneously during any of the steps might be warranted. Information from each of the steps can be incorporated into plans for the provision or augmentation of specific services throughout this process.

### Step 1: Preliminary Assessment of Suspected Suicide Cluster

In Step 1, the lead agency reviews information about a suspected cluster and determines, in collaboration with a

FIGURE 2. Steps to assess and investigate a suspected suicide cluster, CDC guidance, 2024



suicide cluster coordinating committee (committee) (Step 1B), whether a formal assessment is necessary.

### 1A: Collect Details About the Suspected Cluster

When the notification is received, the agency collects the contact’s name, email address, phone number, and organization or other affiliation. The agency can share the information with other investigators and collaborators that are a part of the committee (Step 1B), the community, or media while upholding and respecting anonymity and confidentiality to the greatest extent, in light of how much of the decedents’ information has been communicated. The lead agency might designate one staff member as the point of contact. The responsibility of this person, sometimes referred to as the suicide cluster liaison (liaison) in the initial phase, is to collect and review the information about the suspected cluster. For this role to pre-exist is preferable but, if not, this role can be designated when the notification of the suspected cluster occurs.

The information collected about the suspected suicide cluster can include:

- Number of cases
- Types of cases (e.g., suicides and suicide attempts)
- Period when the cases occurred (e.g., past 6 months, date of the last known suicide, and whether the suspected cluster is ongoing)
- Source of information obtained for possible use in verifying the cases
- Geographic location, which also might include population density and demographic profile of the area
- Physical location of cases (e.g., wooded area, school campus, and railroad tracks)
- Mechanism of suicide among cases
- Relation of cases to each other, if known, and whether any exists
- Demographic characteristics of the cases (e.g., decedent's age, sex, race and ethnicity, sexual orientation, and gender identity)
- Risk factors or any precipitating circumstances or events (e.g., mental health condition and exposure to other suicide attempts or deaths by suicide), if known

### 1B: Convene or Form a Committee

The liaison convenes a pre-existing committee or forms a new committee. Members of the committee might include a combination of suicide subject matter experts, epidemiologists, data analysts, representatives of other state or local agencies, tribal partners, community partners, local suicide prevention coalition members, persons with lived experience, advocacy groups, funders, mental health organizations, health care providers, community leaders, and others who can contribute critical information related to the reported suspected cluster. The lead agency also can contact CDC to support the assessment (<https://wwwn.cdc.gov/dcs/ContactUs/Form>). CDC can send resource materials, provide technical assistance, or be more extensively involved through an Epidemiologic Assistance investigation (<https://www.cdc.gov/eis/request-services/epiaids.html>). The role of the committee, working alongside the liaison, is to

- review the available information on the suspected cluster and determine whether to proceed to a formal assessment (Step 2);
- implement the assessment, if necessary;
- contribute to a more formal investigation (Step 3), if necessary;
- provide input about the needs and concerns of the community; and
- be involved in the day-to-day activities, as requested.

When engaging community partners and organizations, following communication best practices to avoid any

miscommunication or misinterpretation about the suspected cluster is important. Taking caution in media messaging that can inadvertently increase the risk for suicide contagion (i.e., occurrence of additional suicide attempts by those who have been exposed to suicide or suicidal behavior), which is a concern when dealing with suspected suicide clusters (10,22,23).

At each step in the process, the membership of the committee might change depending on the need for more specialized expertise or based on completion of tasks. The liaison, along with the existing committee, might determine necessary changes in group membership as the process unfolds. New members of the committee might be internal or external to the lead agency and might include epidemiologists, communicators, staff members from local crisis centers supporting the national 988 Suicide & Crisis Lifeline (call or text 988 or go to <https://988lifeline.org>), statisticians, mental health experts, other suicide prevention experts, and others with specific expertise as needed. As new members are added, they can be provided with information about the expectations and goals of the committee along with a summary of all activities and information collected.

### 1C: Determine Whether to Conduct a Formal Assessment of the Suspected Cluster

The committee, led by the liaison in the lead agency, can review the details of the suspected cluster and engage in initial discussions to determine whether to conduct a formal assessment (Step 2). Guiding questions might include:

- Do the number of cases and information received present a concern for a cluster rather than a general increase in cases?
- Is there evidence to suggest the cases are connected to each other in time and space (e.g., geographically, physically, and virtually) by specific risk factors or by way of common demographic characteristics?
- Has information been shared in the community?

If the committee determines that sufficient justification or evidence exists, then they can proceed to Step 2 to formally assess the suspected cluster. The liaison also might notify the source of information that a formal assessment will be conducted.

If the committee determines evidence is insufficient, the liaison prepares a summary report to the source that provides the initial notification and can share the report with members of the committee who participated in the deliberations. The report will clearly and accurately explain the reason why the agency is not pursuing a formal assessment or investigation based on the information provided about the cases, including any procedures that were taken, any results from the initial review of available information, any suicide prevention and intervention materials that are appropriate to share, and any referrals to other

appropriate agencies that might share the reported concern (e.g., poisoning or overdose prevention programs).

## Step 2. Formal Assessment of the Suspected Suicide Cluster

In Step 2, the committee further assesses and determines whether the suspected suicide cluster warrants further investigation (Step 3). The liaison can coordinate meetings and outline steps in the assessment process. For example, the liaison, in conjunction with the committee, can develop an assessment plan that includes developing a case definition, determining a time frame for the analysis, identifying available and accessible data sources, determining the method of data collection, developing a data analysis plan, and assessing the available data and information, including selecting the appropriate statistical tests to determine if the cases in question can be classified as a true cluster. During this step, the committee can determine whether to invite additional members (e.g., epidemiologists, data analysts, behavioral scientists, and survey developers).

### 2A: Develop a Case Definition

A definition of what is considered a case is needed to effectively assess whether a cluster has occurred. This definition should, if possible, include the specific type of event (e.g., suicide or suicide attempt), a specific time frame, geographic boundaries (e.g., county, town, school district, and region of the state), specific population characteristics (e.g., sex, age, specific school or school district, and occupation), and means of suicide, as appropriate.

### 2B: Determine the Time Frame

Determining the time frame of the suspected cluster is needed for the assessment. For the committee to determine whether the suicide cluster is ongoing or restricted to the reported cluster period to guide response action is important. Assessing an increase in suicide should be conducted for the suspected cluster period and for the period thereafter up to the most recent time if data are available. Determining a baseline period for the assessment helps ensure accurate and valid comparison of the time frame of suspected cluster. For example, the committee might set a baseline to compare any changes in the suspected cluster period reported (e.g., comparing months in the previous year[s] with months in the current year). A baseline also can be the same weeks or months in previous years to account for seasonal suicide trends (24).

### 2C: Identify Data Sources

The decision on which data are appropriate for this stage is determined by the suspected type of suicide cluster (e.g., deaths versus attempts or point cluster versus mass cluster) and other characteristics of the suspected cluster (e.g., specific population subgroup or common method used) (Box 1). When determining which data sources to use, the following questions might be considered:

- Are data available on the outcome of interest?
- Are data available at the appropriate geographic level to draw meaningful insights?
- How recent are the data and do they cover the cluster period?
- Do the data include the baseline period?
- What is needed to access the data (e.g., mechanisms of data transfer, permissions)?
- Can data from different data sources be linked to provide additional information?
- Can emerging technologies be leveraged to gain more insight or knowledge into the cluster (e.g., social media and other online data)?

### 2D: Select Statistical and Analytical Methods

The persons on the committee who are tasked with data analysis might conduct relatively simple analyses (e.g., descriptive analyses) or more complex analyses. Analytic methods can vary depending on the characteristics of the suspected cluster and key questions to be addressed. Assessment of the suspected cluster can include comparing trends over time, using inferential or health statistics, and conducting analyses that incorporate both quantitative and qualitative methods. Because a suicide cluster generally refers to a short-term increase in suicides or attempts, monthly or even weekly counts might be the analytic unit ascribed to precisely define the period for assessment. A visual trend of the number of cases over a specified period can be the first step in determining whether an increase or emerging pattern exists. Analyzing behavioral trends over time also can be useful in determining whether simultaneous or similar trends are occurring in risk behaviors associated with suicide (e.g., self-harm and suicidal ideation).

The ability to produce statistically reliable estimates and detect a significant increase in suicide outcomes might be hampered when assessing small numbers of cases. This limitation is not uncommon in analyses of clusters. To overcome certain of these challenges, the committee or persons conducting the analyses can consider analytic methods that account for small numbers and the spatial-temporal nature of the data. Statistical methods that can quantitatively detect

**BOX 1. Data sources for assessment and investigation of suspected suicide clusters, CDC guidance, 2024****Suicide deaths and precipitating circumstances:**

- Death certificate data
- Child fatality reviews data
- State violent death reporting system
- Coroner or medical examiner reports
- Law enforcement reports
- Toxicology reports
- State or local health information exchange or data warehouse

**Suicidal ideation, self-harm, or suicide attempt:**

- Emergency department or hospitalization data (e.g., Electronic Surveillance System for the Early Notification of Community-Based Epidemics)
- Syndromic surveillance data
- Emergency medical services data
- Medicare and Medicaid data
- State and local suicide prevention lifeline data (e.g., 988)
- Poison control center data
- Social media and other online data (e.g., social media surveillance data and online safety monitoring data)

**Risk or protective factors for suicide:**

- Youth Risk Behavior Surveillance System (at local level, if available)

- Behavioral Risk Factor Surveillance System (at local level, if available)
- Child protective services records
- Court data related to domestic violence, legal involvement
- Local mental health care data
- Prescription drug monitoring programs or other state and local drug use data
- Local and national newspapers

**Population size that can be used as denominator to calculate rates:**

- CDC's Wide-ranging Online Data for Epidemiologic Research (WONDER)

**Suicidal behaviors and risk factors at state and national level for references:**

- CDC's WONDER
- CDC's Web-based Injury Statistics Query and Reporting System (WISQARS)
- National Survey on Drug Use and Health
- Federal Reserve economic data
- General social survey
- Census housing data

suicide clusters are described in a review (25). Common methods might include, but are not limited to:

- Space-time permutation scan statistic: The space-time scan statistic uses a space-time permutation probability model; a cylinder scanning window focuses on geographic areas and a height mirroring time (26,27). The significant clusters will represent overlapping cylinder shapes of geography and time. The recommended platform used to perform a space-time permutation scan statistic is SaTScan, a software developed by Martin Kulldorff and Information Management Services Inc. SaTScan is both a spatial and space-time scan statistic platform.
- Bayesian spatial temporal analysis: Bayesian hierarchical models provide the ability to explore and analyze spatial-temporal health data. Recent advances in technology and computing make this method more accessible for analysts to perform. This method relies on a probability model that uses observed and population distribution to calculate the posterior distribution for significant clusters (28).
- Poisson probability density function: This approach uses a Poisson distribution to estimate the probability of observing the number of cases reported in the suspected suicide cluster based on the rate in the reference period

(25,29). The average count of cases per analytic unit (e.g., per month) during the reference period is obtained. The p value is then used to provide statistical support for the occurrence of the suicide cluster.

- Anderson-Darling test: This approach tests whether a potential suicide cluster differs from that which would be expected under a homogeneous Poisson distribution (25,30). The Anderson-Darling test is especially useful for identifying clustering in small samples.

The committee will review the findings and limitations of this initial assessment to determine whether further investigation should be conducted.

**2E: Determine Whether to Conduct Further Investigation**

If a cluster is confirmed, the committee can proceed to an investigation. If analytic testing does not demonstrate a greater than expected increase, an investigation might still be warranted, especially if the community perceives that a suicide cluster exists or perceives heightened anxiety in the community that could lead to potential contagion. If the committee determines the cases represent an isolated or sporadic marginal increase (e.g., not a statistically significant increase), they might

decide to continue monitoring the suspected cluster rather than conduct an investigation.

If the committee agrees that there is no concern for a suicide cluster, then the liaison should prepare a summary report to the sources that provided the initial notification. The committee should assist in developing the summary report of the findings and include a justification for why an investigation is not recommended and provide information about any other steps that will be taken (e.g., continued monitoring, communication, or suicide prevention education within the community).

### Step 3. Investigation of the Suicide Cluster

The purpose of this step is to investigate potential commonalities or precipitating circumstances among the cases. This information can be used in the community response plan (31) and can contribute to epidemiologic and public health knowledge. During this step, the committee can invite additional members including, but not limited to, epidemiologists, behavioral scientists, and community representatives.

#### 3A: Develop and Implement an Investigation Plan

In this step, the committee will develop and implement an investigation plan for analyzing risk and protective factors among cases and identifying any patterns in precipitating factors or events in the suicide cluster. Under the leadership of the liaison, the committee will determine an appropriate and feasible study design for the investigation that addresses objectives and hypotheses formulated by the committee. Considerations for the depth and breadth of the investigation might include availability of resources and staff member time, size of the cluster, geographic spread, period being examined, availability of data, and limitations of the data.

The investigation plan might include reviewing the literature on suicide clusters, specifically paying attention to known risk factors, circumstances, and contributors of suicide (32,33). This review and discussions among the committee can inform establishing the investigation's objectives and specific hypotheses. The investigation plan also might include assessing the availability of existing data (Box 1) that can be examined at the individual, relationship, community, or societal level (e.g., demographic characteristics, risk factors [e.g., school, job, or financial problems], exposure to a suicide in the community, and engagement in a suicide online forum) (Box 2). Other relevant data can be abstracted from case notes (e.g., medical examiner, coroner, law enforcement, or first-responder reports), toxicology reports, and hospital triage notes. In addition, media scans, social media, and other online data

can provide additional information on the local situation. To better understand the suicide cluster, the investigation also might include factors specific to the community (e.g., the community's values and culture, attitudes toward suicide and help-seeking, and history of suicide prevention).

If feasible, qualitative data can be obtained through in-depth interviews with or focus groups of persons directly connected to the cases, persons with lived experience, or members of key community sectors and other interested groups (e.g., hospital and emergency response staff members, school staff members, and community groups). To obtain further understanding and insight into the cluster, interviewees might be asked whether they are aware of an increase in suicide attempts or deaths, what the suspected contributors of suicide for this cluster might be, whether there have been any observed patterns (e.g., exposure to a suicide risk factor or relationship among the decedents), what concerns the community currently has, what current programs and initiatives there are that address suicide, and how well those are working (34).

Determining a comparison group might be helpful for examining similarities and differences in characteristics, circumstances, and contributing factors to guide prevention. For example, suicides during the investigation period might be compared with those during the reference period for this purpose.

Developing and implementing an analysis plan might include descriptive analyses to compare the distributions of epidemiologic characteristics between recent cases with cases from previous years. Further, clustering analyses at the individual level might identify common profiles among the investigated cases that analyses at aggregated level might miss. This approach might include a hierarchical clustering analysis to develop a heatmap on profiles of characteristics or factors among the investigated suicide cases (e.g., by using the R heatmap package developed by The R Foundation to identify distinguished patterns of clustering).

#### 3B: Report Findings to Inform Public Health Action

At the end of Step 3, the liaison and committee develop a final report describing procedures, findings, and recommendations that reflect the community's culture and environment and decisions made each step of the way. These findings can inform a community response plan (31) to prevent further suicides. The liaison also might share a summary report with the information source that provided the initial notification, as well as with the public and media, as appropriate, ensuring the guidelines and best practices for safe reporting on suicide are followed.

**BOX 2. Common suicide cluster variables of interest, CDC guidance, 2024****Demographics and descriptive characteristics:**

- Sex
- Age
- Race
- Ethnicity
- Location
- Rurality or urbanicity
- Gender identity
- Sexual orientation
- Job industry or occupation
- Veteran status
- Disability status
- Experience of homelessness
- First- or second-generation immigrant
- Mechanism of suicide

**Individual circumstances, events, or risk factors:**

- Previous suicide attempt
- Mental health conditions
- Physical health problems
- Serious illness
- Chronic pain
- Criminal or legal problems
- Job or financial problems or loss
- Impulsive or aggressive tendencies
- Problematic substance or alcohol use
- Current or previous history of adverse childhood experiences
- Recent traumatic experience
- Sense of hopelessness
- Violence victimization or perpetration
- Eviction or loss of home

**Relationship circumstances, events, or risk factors:**

- Bullying (including cyberbullying)
- Family or loved one's history of suicide or death of a family member or friend
- Recent argument or conflict
- Relationship breakup
- Other relationship loss
- High-conflict or violent relationships
- Social isolation

**Community circumstances, events, or risk factors:**

- Lack of access to health care
- Suicide cluster in the community
- Stress of acculturation
- Community violence
- Historical trauma
- Discrimination or racism

**Societal circumstances, events, or risk factors:**

- Stigma associated with help-seeking and mental illness
- Easy access to lethal means of suicide among persons at risk
- Unsafe media portrayals of suicide

**Outcomes:**

- Suicidal ideation
- Suicide planning
- Suicide attempt
- Self-harm, including nonsuicidal self-harm
- Death by suicide

## Conclusion

This CDC guidance is meant to support and assist communities in the assessment and investigation of suspected suicide clusters that can ultimately guide public health action (e.g., community response) to prevent suicide. Investigating a suspected cluster requires substantial time and resources for the lead agency and community. Ideally, the committee and liaison are prepared to receive concerns, engage key partners, and assess and investigate suspected clusters. This CDC guidance provides direction for a carefully planned and implemented process. Having an established approach can help an agency and community prepare the infrastructure and resources to readily act when suicide clusters are suspected or confirmed. Although suicide clusters comprise a small proportion of suicides, a suicide cluster or the perception of a suicide cluster can greatly affect communities (18).

Assessment and investigation of a suspected suicide cluster will vary by community based on community values and culture, attitudes toward suicide and help-seeking, history of suicide prevention efforts, and other factors. In addition, lead agencies will differ in their resources and capacity to address challenges (e.g., small sample sizes, data completeness and availability, the possibility of clusters that lack physical spatial boundaries, and an urgency to respond to a community's perception of a suspected suicide cluster). Over time, new data sources and information will add to the analysis and insight toward cluster investigation. These community strengths and limitations can help tailor the assessment and investigation process.

Communication is a critical component throughout the assessment and investigation process. Ongoing effective communication is necessary from reliable spokespersons, both internally within the committee and externally to decision-makers



and the public whether the overall investigation ends with the first or last step of this guidance. Following best practices for safe messaging and reporting on suicide makes the difference in controlling or exacerbating an already stressful situation.

Finally, the work of the liaison and committee in this phase can help guide the community response. The community response stage is when public health efforts can be implemented to save lives.

### Conflicts of Interest

All authors have completed and submitted the International Committee of Medical Journal Editors form for disclosure of potential conflicts of interest. No potential conflicts of interest were disclosed.

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# CDC Guidance for Community Response to Suicide Clusters, United States, 2024

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## Summary

*This is the third of three reports in the MMWR supplement that updates and expands CDC's guidance for assessing, investigating, and responding to suicide clusters based on current science and public health practice. The first report, Background and Rationale — CDC Guidance for Communities Assessing, Investigating, and Responding to Suicide Clusters, United States, 2024, describes an overview of suicide clusters, methods used to develop the supplement guidance, and intended use of the supplement reports. The second report, CDC Guidance for Community Assessment and Investigation of Suspected Suicide Clusters, United States, 2024, describes the potential methods, data sources, and analysis that communities can use to identify and confirm suspected suicide clusters and better understand the relevant issues. This report describes how local public health and community leaders can develop a response plan for suicide clusters. Specifically, the steps for responding to a suicide cluster include preparation, direct response, and action for prevention. These steps are not intended to be explicitly adopted but rather adapted into the local context, culture, capacity, circumstances, and needs for each suicide cluster.*

## Introduction

CDC's National Center for Injury Prevention and Control provides states, local health departments, territories, and tribes with technical assistance for assessing and investigating suspected clusters of suicide and suicidal behavior and responding to suspected and confirmed clusters. Suicide clusters are a group of suicides or suicide attempts that occur closer together in time, space, or both than would normally be observed for a community (1,2). Clusters might occur in a defined geographic location, called point or spatial-temporal clusters (e.g., part of a school, institution, county, and tribe), or they might be geographically dispersed over long distances (e.g., after a celebrity suicide), called mass or temporal clusters (3). This report is focused primarily on point clusters and the response by lead agencies, often state or local health departments or tribal leaders. Responding to suicide clusters is important because, although rare (4), these clusters can have devastating immediate and lasting effects on families, friends, and entire communities (5).

Definitive confirmation of a suicide cluster can be challenging and is not necessarily a prerequisite for initiating a community response (6). If a cluster is suspected (but not confirmed), or if the potential development of a cluster is a concern, the path from assessment to investigation to response is not always linear; steps might occur simultaneously, and a

community response might still be appropriate and warranted. In the absence of verification of a cluster, the lead agency, acting from within its authority and in conjunction with community leaders from various sectors (e.g., public health, mental health, health care, education, faith, business, and social services) who have an understanding of the local residents, typically determines whether a response is necessary.

Implementing community-based preventive measures (e.g., programs, practices, and policies) might be appropriate even after just one suicide. Ideally, these preventive measures would already be in place to help prevent suicides. Crisis-response plans implemented in community emergencies, while necessary, are likely not sufficient to address a suicide cluster. State, tribal, local, and territorial public health officials might consider whether and how the specific suicide cluster response plan they create based on the updated guidance can be incorporated into existing plans and practices for emergency management. Consideration might be given to groups who might especially be susceptible to contagion or imitation, such as young persons or persons already struggling with suicidal thoughts (7). A suicide cluster or even a single suicide might spur suicide contagion or fear of contagion. Contagion is when the exposure to the suicide or suicidal behavior of one or more persons influences others to attempt suicide (7). Although suicide clusters are rare, a suicide might trigger others who are vulnerable to attempt suicide, especially when the death is highly publicized (8,9). Even if contagion does not occur, clusters can have a profound effect on and create anxiety among community members (3); therefore, containing anxiety also might become part of containing the cluster. Suicide also might

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result in social stigma and feelings of guilt, shame, and anger among family and community members, further increasing the risk for additional suicides (3).

Both suicide clusters and suicide attempt clusters can be mitigated by a community response (3). However, an important difference exists between the purpose of a response to suicide clusters (to prevent additional deaths) versus suicide attempt clusters (to prevent additional attempts). The guidance presented in this report is applicable to both suicide clusters and clusters of suicide attempts; therefore, both hereafter are referred to as suicide clusters unless otherwise specified.

Previous CDC guidance for responding to suicide clusters was published in 1988 (1). Although that guidance is still relevant, this report reorganizes, updates, and expands on that information to include new insights based on current science and public health practice attained using strategies from the original guidance (10,11). This report provides lead agencies, in conjunction with community leaders, with information on how to best respond to a confirmed or suspected suicide cluster, including strategically tailoring a response plan based on resources, cultural context, and health equity needs of the community. For example, tribal communities might require a response to be tailored to the cultural context of the specific tribe experiencing the cluster. This could involve understanding the history of the tribe, such as population-specific risk factors (e.g., forced relocation, prohibitions on language, and religion), and the recognition of known protective factors (e.g., cultural continuity and the presence of elders) (12). This guidance might be revised and expanded as new, pertinent information becomes available.

## Preparing for and Responding to Suicide Clusters

Although suicide clusters are relatively rare events (4), lead agencies in conjunction with community leaders can develop a plan for responding (Figure). The general steps of a response plan include preparation, direct response, and action for prevention. Important considerations exist in preparing for and responding to a suicide cluster.

### Step 1: Preparation for Responding to a Suicide Cluster

#### 1A: Review Guidance and Develop a Community-Specific Response Plan

Preplanning can help prevent additional lives lost to suicide. Ideally, the updated guidance should be reviewed before the

onset of a suicide cluster. Although not possible in all instances, when faced with a suicide cluster, the community often has an immense sense of urgency that something needs to be done as soon as possible. This sense of urgency can prompt well-intended yet premature actions to be initiated without an agreed-upon community-specific response plan. Certain communities will already have developed a specific response plan. Those that have not can review this guidance and then develop a plan that is tailored to their community. For example, the response plan developed by a tribal community (12,13) will be different from the response plan developed by a Bhutanese community in the United States (14); however, the general steps of a response plan should remain the same (i.e., preparation, direct response, and actions for prevention).

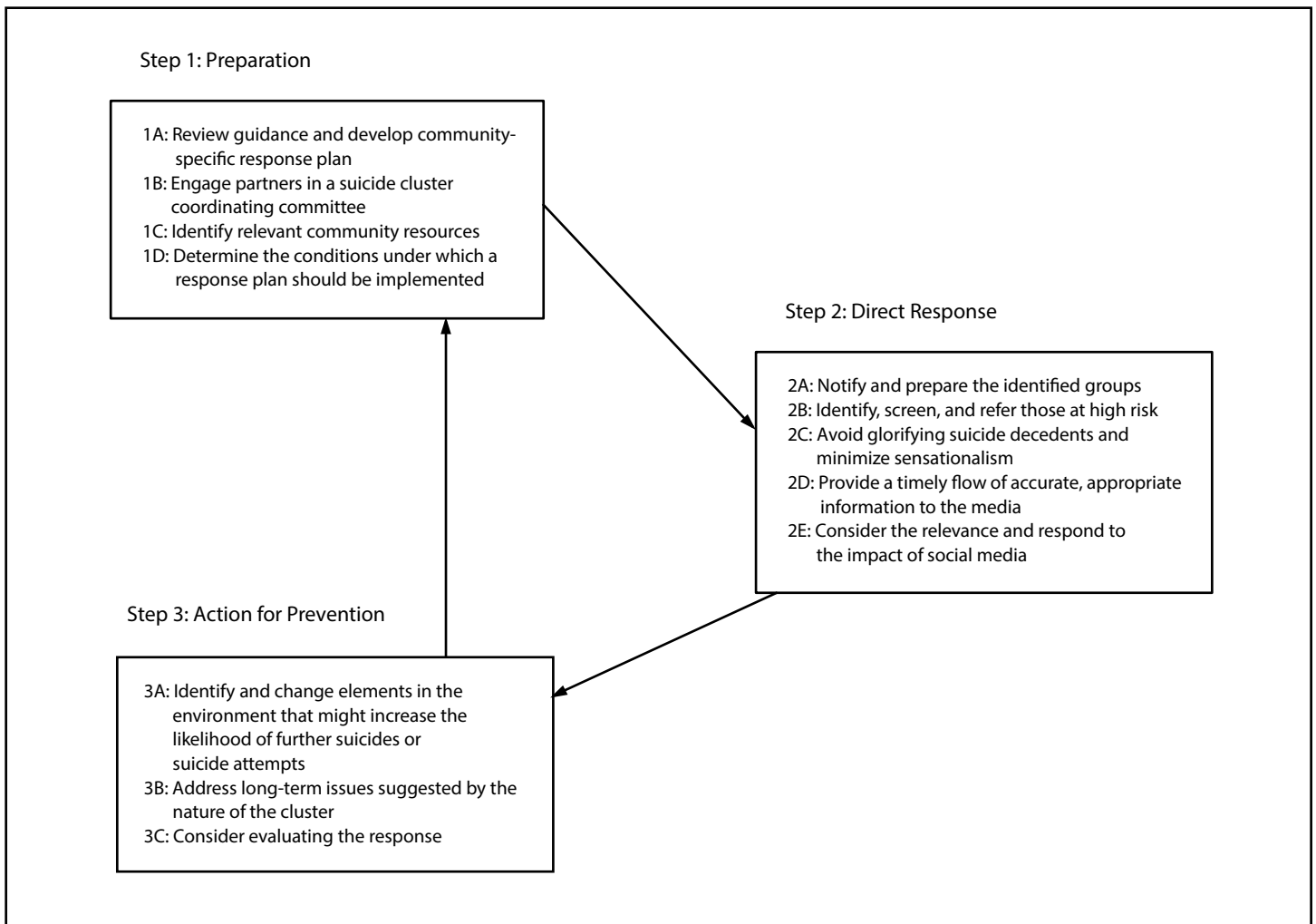
Tribal communities might require a response that can also increase or augment local resources. CDC provided subject matter expert consultation for the Substance Abuse and Mental Health Services Agency's (SAMHSA's) publication *Suicide Clusters Within American Indian and Alaska Native Communities: A Review of the Literature and Recommendations* (12). CDC also provided subject matter expert review and feedback for SAMHSA's publication *Preventing and Responding to Suicide Clusters in American Indian and Alaska Native Communities* (13). These publications are important resources with specific cultural considerations for tribal communities seeking to prevent and respond to suicide clusters. The overall goal of a response plan remains the same: to contain the cluster and prevent additional deaths and attempts.

#### 1B: Engage Partners in a Suicide Cluster Coordinating Committee

To hear and include perspectives of all concerned sectors of the community (e.g., local government, education, mental health, and public health) that can respond effectively with an all-hands-on-deck approach, representatives from these sectors might be selected by the lead agency to serve for an agreed-upon term (term details can be outlined in the community-specific response plan) on a suicide cluster coordinating committee (committee). Agreed-upon terms can help to retain knowledge, prevent turnover, and provide agency leadership with a time commitment expectation. In the absence of term limits, key points of contact should be made known.

A committee run by a lead agency, often the state or local health department or tribe, is charged with determining when and how to implement a suicide cluster response plan and also might lead or have a large role in investigating potential clusters (10). As with many other types of committees the lead agency can designate one staff member to guide the committee through all aspects of the response plan. That person is referred

FIGURE. Steps of a community suicide cluster response plan, CDC guidance, 2024



to as the cluster liaison (liaison) and has the following specific response-related duties:

- Convene periodic meetings of the committee to make sure all designated agency representatives are familiar with the community-specific response plan. These meetings can be devoted to assessing whether the response plan is being implemented as intended and revised as needed and taking inventory of changes in the availability of relevant community resources (Step 1C).
- Determine how the liaison will be notified of a suspected suicide cluster. One possible notification mechanism for identifying a suicide attempt cluster at the state or county level might be an alert to the health department by the hospital syndromic surveillance system. Syndromic surveillance is an investigational approach in which health department staff members, assisted by automated data acquisition and generation of statistical alerts, monitor disease indicators in real time or near real time to detect

outbreaks of disease earlier than would otherwise be possible with traditional public health methods (15). In other instances, potential clusters can be shared with the lead agency by a community member (e.g., a coroner, medical examiner, or school administrator). In this instance, the agency can use an established process to route any notification to the designated liaison while carefully considering any confidentiality and anonymity processes already in place within organizations such as schools and health care systems.

- Soon after notification of a suspected suicide cluster, convene an initial meeting of the committee to review the data and determine whether a community response is warranted (10). This cluster and response determination might occur simultaneously.

Although the liaison and lead agency will help the committee navigate through all aspects of the response plan, no one person or agency can or should have to be solely responsible

for a community's response to a suicide cluster. The response plan should be promoted and put into action as a collaborative community effort. In addition to considering sectors to include, the roles needed in the response should be considered so that they are covered as well. For example, communication staff members will be critical to develop and test messages and to ensure consistent safe messaging by all partners. Another important consideration is to enlist the support of at least one locally recognized suicide subject matter expert. If no one is available locally, consider asking a regionally or nationally recognized suicide subject matter expert to serve as a committee consultant. Communities can contact their state suicide prevention coordinator to assist with identifying a potential list of subject matter experts for this role. If new committee members are added, they can be provided with a summary of activities to date along with information about the expectations and goals of the committee.

### 1C: Identify Relevant Community Resources

Identifying and taking inventory of available resources can help determine a community's ability or capacity to respond to a suicide cluster and any gaps in community support. Resources can include information that might help contain a suicide cluster (e.g., available crisis and counseling services) and contacts of relevant community agencies. If available, resources also might include funding resources, for example, to support or bolster a local suicide surveillance system or hire and train additional outreach or prevention staff members. Communities lacking these resources or capacities might seek assistance from existing staff members or within the committee agencies with pertinent areas of expertise (Box). Community resources might include school boards, state and local emergency medical services, state and local law enforcement, student and youth organizations (e.g., student government associations, Boy Scouts of America, or Girl Scouts of the USA), and suicide loss survivor groups.

The committee can outline and clearly articulate the roles and responsibilities of any community staff member, ideally before the occurrence of a suicide cluster. Many of these staff members will inherently be familiar with how to perform their assigned tasks; however, the committee might also consider and prepare for additional training that might be needed. Subject matter experts from within the identified stakeholder groups might be equipped to offer response-related training and counseling services. Identifying these possibilities early in the planning stages can reduce future costs.

Suicides among young persons are more likely to occur in a cluster than suicides among adults (3); therefore, seeking the input of youths can be important. Although not specifically designed for suicide cluster responses, the association of

#### BOX. Potential community resources for a suicide cluster response, CDC guidance, 2024

- Crisis centers and hotlines
- Local media
- Medical examiners and coroners
- Mental health providers
- Parent organizations (e.g., parent-teacher associations)
- Pastors and ministerial staff members
- School boards
- State and local emergency medical services
- State and local law enforcement
- Student and youth organizations (e.g., student government associations, Boy Scouts of America, and Girl Scouts of the USA)
- Suicide loss survivor groups

youth-nominated involvement and support (i.e., adolescents nominate caring adults who, with the permission of parents or guardians, learn about ways to support the youths) in helping to reduce mortality among adolescents considering suicide has been documented (16). Other opportunities to engage with youths might include reaching out to and including the perspectives of student board members who serve on state suicide commissions or state youth advisory councils.

The input of local media representatives is important when developing the suicide cluster response plan. Leading experts representing organizations that promote suicide prevention, public health, Internet safety, and journalism have developed recommendations for reporting on suicide. When these recommendations are followed, local media could help reduce concerns about contagion, dispel myths and other misinformation, and promote help-seeking behavior. Best practices and recommendations for reporting on suicide were developed by leading experts in suicide prevention and in collaboration with international suicide prevention and public health organizations, key journalists, schools of journalism, media organizations, and Internet safety experts (17). Local media can use and tailor these best practices and recommendations to be even more specific and relevant to a grieving community. Journalists often can best convey the message of the importance of these best practices and recommendations to their peers.

### 1D: Determine the Conditions Under Which a Response Plan Should Be Implemented

The ultimate decision regarding whether and when to implement the cluster response plan lies with the committee.

Communities can consider the following conditions when making this determination:

- A suicide cluster has been either confirmed or is suspected within a community (10). Because cluster identification is not always clearly delineated, each community should determine the threshold for what is considered higher than expected morbidity and mortality and therefore unusual for their community. If a cluster is suspected, whether the number of cases reaches a predetermined statistical significance might not matter (6). A community response plan should be implemented to prevent additional suicides and suicide attempts.
- When suicide contagion is a concern (18). If the committee is concerned or determines that the exposure to the suicide or suicidal behavior of one or more persons influences others to attempt suicide (19), a response plan should be implemented.
- A common-source issue has been identified. For example, the Great Recession and other historical economic downturns have been associated with increases in suicide rates (20). The committee might determine that an increase in suicidal behavior and suicides among persons within a community experiencing foreclosure and housing displacement (21) is a suicide cluster and constitutes the need for a community response.

Ultimately, no definitive formula exists for determining whether and when to implement a cluster response plan. However, each community can rely on the committee for the final decision.

## Step 2: Direct Response to the Cluster

### 2A: Notify and Prepare the Identified Groups

Step 2 begins with notifying the various staff member resources identified in Step 1C. Immediate notification of a suicide cluster among staff members who have integral roles in the crisis response is important. Although certain staff members might already be aware of the cluster, others might not, and it is ideal for those who are unaware to receive initial notification and accurate information directly from the committee rather than finding out via rumors potentially on social media or receiving the news from another outside source. The liaison and the committee members have shared responsibility that should be strategically divided. For example, the committee representative for the department of education might lead the contacting, notifying, and preparing of staff members within affected school systems (as outlined in that community's specific response plan) while carefully considering any confidentiality or anonymity processes already in place.

Although different committee representatives will deliver the message to various groups, making sure that the messaging is the same, per the preparation step, is important. Coordinated communication and consistent messaging is a vital part of the response because it can help to prevent confusion and create community cohesion.

Next, the various groups identified should be prepared by refamiliarizing staff members of their roles and responsibilities in the context of responding to a suicide cluster. An important part of staff member preparation is considering and troubleshooting potentially stressful scenarios including any shame and guilt associated with the occurrence of additional suicides along with the realities of staff member burnout and need for self-care (e.g., make counseling services available to staff members).

### 2B: Identify, Screen, and Refer Those at High Risk

An important part of a community response to a suicide cluster is to identify, screen, and refer to services persons in the community who might be at increased risk (22). The committee might first consider identifying the following persons who could be at increased risk:

- Persons close to the decedents, including
  - relatives of the decedents (e.g., parents, children, and siblings),
  - boyfriends, girlfriends, or partners (current and former) and other close friends of the decedents, and
  - close work colleagues or fellow students of the decedents
- Persons with previous exposure to the suicide or suicides or other heightened risk factors, including
  - persons with lived experience who have attempted or thought about suicide,
  - persons with a history of depression or other mental illness or with co-occurring mental illness,
  - persons who are known to isolate or who lack social support, and
  - persons with other known risk factors for suicide (more information about risk and protective factors for suicide is available at <https://www.cdc.gov/suicide/factors/index.html>)

The response will vary depending on whether the cluster is among youths or adults. For adult clusters associated with a particular occupation or workplace, consider asking supervisors, colleagues, and other employees about who might be at increased risk. For youth clusters, the committee might consider asking teachers and students for support with identifying youths who might be at increased risk. Another consideration is the ability for a trained counselor to conduct a screening interview with persons who might be at increased risk for suicide. For youths, identification, screening, and referral to

services might be provided by school resources because of legal considerations and the need for parental consent. Although a parent's consent to have their children screened can override a youth's refusal to assent, both adults and youths who are at increased risk sometimes do not want to be screened in fear of involuntary mental health services. Making information regarding the 24 hours/7 days a week availability of the national 988 Suicide & Crisis Lifeline (call or text 988 or go to <https://988lifeline.org>) available to all persons provides those who do not want to be screened as part of the cluster response with an important and alternative touchpoint for help.

Regardless of whether the suicide cluster is among youths or adults, another important consideration for screening and referrals is the local availability of community mental health and other services. Counseling support and mental health services might look different for different communities depending on the availability of staffing resources. The increase in demand for counseling services does not always align with an increase in the number of staff members needed to support a community surge in referrals in response to a suicide cluster. The committee will need to determine the types and availability of support resources for identifying persons at high risk for suicide (often completed as part of the first preparatory step). As general measures of and support for identifying persons at high risk, the committee might take the following actions:

- Make counselors available at various community hubs (e.g., local YMCAs, churches, and schools) and consider offering walk-ins and taking appointments.
- Get the support of local media and social media influencers to call public attention to the availability of counselors and other sources of support including the national 988 Suicide & Crisis Lifeline.
- Use social media and other online forums as tools to communicate with community members, including those potentially at high risk, about available services and support.

## 2C: Avoid Glorifying Suicide Decedents and Minimize Sensationalism

Any glorification of persons who died by suicide and sensationalism when messaging about the death might increase the risk for suicide among those who might be thinking about or who have attempted suicide in the past, have other risk factors, or both (8). Glorifying is defined as praising, worshipping, or bestowing honor and admiration (23). Sensationalism, often referenced in journalism, is defined as the use of exciting or shocking stories or language at the expense of accuracy to provoke public interest or excitement (24). When the community plans to celebrate the life of, pay tribute to, or honor a person who has died by suicide, the consequences of

intentional and unintentional glorification and sensationalism should be considered. Similarly, avoiding defamation of the decedents can prevent unnecessary pain and additional grief to their families along with social isolation among those who might relate to them. Therefore, the committee can help the community determine the response.

Memorials for persons who died by suicide often are well intended but can have serious, unintended consequences (25). The committee might need to provide resources and education to the community for navigating and helping to manage this fine line between celebrating a life and glorification and sensationalism. Media recommendations for reporting on suicide emphasize this response step (i.e., avoid glorifying and sensationalism); however, this guidance is also needed among the community at large in response to a suicide cluster.

Considerations for the committee representatives include the following:

- When the deceased is a student, consider privately notifying the students closest to the person. Then proceed with notifying the remaining student body in closely supervised small groups.
- Provide maximum support to community members when announcing the suicide of a loved one. This might vary by the availability of resources. In one community, maximum support might allow for the hiring of additional school counselors, social workers, or psychologists. For another community, maximum support might involve temporarily partnering with faith-based organizations and workplace employee assistance programs to repurpose staff counselors as trained crisis counselors. If local and in-person resources are limited, consider setting up and making telehealth options available.
- Provide community groups and members (e.g., students, teachers, school administrators, families, and media) with facts that provide a holistic and as exact a picture as possible of the person who died by suicide.

## 2D: Provide a Timely Flow of Accurate, Appropriate Information to the Media

The media has a substantial impact on when and how the public is informed of a suicide cluster and can have a major role in how public attitudes and opinions are formed. As a result, providing the media with timely information that is both accurate and appropriate can help keep the public informed. Including a local media representative in the development of a community response plan has value. Including the local media will help facilitate the delivery of safe messaging from the media while the committee maintains their ability to respond.



Considerations for the committee include the following:

- Assign a media spokesperson to each committee community sector (e.g., education, public health, and local government). These designees need not be the same as the sector representatives identified in Step 1B; however, in smaller communities with limited staff members and resources, the same representatives might serve in both capacities (i.e., same person is both sector representative and media spokesperson). Additional media designees for community groups identified in Step 1C also can be assigned, as needed.
- Assign one media information coordinator whose primary role is to ensure that the messaging is the same across all media spokespersons. This person's responsibilities include regular communication delivering appropriate, approved, and up-to-date information with all spokespersons; fielding media inquiries to the appropriate media spokesperson; compiling and updating a resource list of national and local subject matter experts to properly triage media requests; arranging and hosting press briefings; avoiding the downplay of the crisis, which could weaken the authority of the designated media spokesperson and community leaders; and ensuring that all spokespersons have media training and are knowledgeable in recommendations for reporting on suicide. Safe and consistent messaging is vital to the response and helps to prevent confusion and create community cohesion.
- Request the community's assistance in directing all media requests for information to the designated media spokesperson. Consider making this information available to community members via an informational pamphlet (if time and resources allow) or as a social media post by community leaders.

## 2E: Consider the Relevance and Respond to the Impact of Social Media

The original guidance developed by CDC in 1988 on responding to suicide clusters (1) predated the Internet and social media. Since that time, these technological advances have served as both a suicide cluster response tool and a potential risk to the response (26); however, applicability will vary by community. For example, rural communities might not have access to reliable Internet service and, therefore, the use of social media among community members might be limited. For other communities with regular access to the Internet, the relevance and impact of social media on a suicide cluster response might need to be considered.

## Social Media as a Response Tool for Prevention and Intervention

Social media can serve as a helpful response tool for the prevention and intervention of suicide clusters. Social media can be a forum for communities to talk about suicide and suicide clusters safely (26,27). The social media platforms that are being used by the affected communities should be identified. The following are considerations for using social media as a response tool:

- Committee representatives can use social media to disperse accurate and appropriate information (ensure content is mobile friendly) to community members about a past or present suicide cluster. This can include providing
  - facts that debunk myths about suicide and any rumors or misinformation about the suicide cluster,
  - prevention-related (28) and positive messaging including stories of hope and recovery (29),
  - information and direct links to the national 988 Suicide & Crisis Lifeline (messaging about the Lifeline, including on social media, resulted in an increase in calls and a reduction in suicide) (28,30),
  - information about local suicide prevention and mental health community resources, and
  - opportunities for committee representatives to answer questions and address concerns of community members in near real time.
- Certain social media companies have consulted with suicide subject matter experts to assist with developing protocols for identifying and supporting those at risk for suicide (26). The committee can consider the following points:
  - Certain social media platforms allow friends to flag someone who might be at risk (26). The flag alerts platform staff members who can virtually push various prevention messages and information about available suicide prevention resources directly to the persons of concern (26).
  - Research has debunked the perception that more sensationalized articles shared via social media are more appealing to readers. News articles that are responsibly and safely reported were more likely to be shared on social media (31).
  - Social media and other online forums can serve as tools to communicate with community members, including those potentially at high risk for suicide, about available services and support (Step 2B).
  - Social media has been used as a prevention and response tool with various age groups and populations (26) and also can be used to analyze communication patterns during a suicide cluster (32).

## Social Media as a Response Risk to Prevention and Intervention

Social media can serve as a risk to the suicide cluster response. For certain communities, social media can be a forum for persons to talk about suicide and suicide clusters irresponsibly and therefore has the potential to have a negative impact on those at increased risk for suicide. The following are considerations for social media as a response risk:

- Social media can serve as an unwelcome early notification system of a suicide or suicide cluster. The speed at which information travels via social media can prompt the spread of misinformation among community members and contagion among vulnerable persons. As a result, community leaders often are left to deal with the traumatic aftermath of many persons having to first learn of a loved one's death by suicide online rather than carefully and thoughtfully by the process set forth in Steps 2A and 2B.
- Social media might be used to seek peer support as opposed to professional help.
- Social media might be used as a forum to glorify the decedent and sensationalize the death. Any glorification of persons who died by suicide and sensationalism when messaging about the deaths might increase the risk for suicide among those who are most vulnerable.
- Social media can serve as an unmoderated forum where posts are often not able to be redacted (e.g., live streaming).

### Step 3: Action to Help Prevent the Next Cluster

#### 3A: Identify and Change Elements in the Environment that Might Increase the Likelihood of Further Suicides or Suicide Attempts

Identifying and changing environmental factors that have the potential to make suicides or suicide attempts more likely is an important part of preventing suicide clusters. Suicide is caused by multiple factors acting at the individual, relational, community, and societal levels. Therefore, prevention that addresses not only individual-level change (e.g., increased help seeking) but that also focuses on changes to the environment can have great effect. CDC's Suicide Prevention Resource for Action includes the best available evidence for suicide prevention for persons and across communities (33).

Creating protective environments seeks to improve settings where persons live, work, learn, and play. This can include reducing access to lethal means among persons at risk for suicide through safe storage of firearms and medications as well as policies (e.g., waiting periods to purchase firearms) that increase the time between thoughts of suicide and the

decision to act. In addition, creating protective environments can include intervening at suicide hot spots or locations where persons are known to die by suicide through creation of physical barriers on bridges and tall buildings, installation of call boxes, or posting of signage with a hotline number. Creating protective environments also might include organizational policies in the workplace or within institutions (e.g., jails and prisons) to promote help seeking and other adaptive norms, raise awareness of signs for suicide risk, and support persons who need immediate care (33).

Finally, creating protective environments might include other community-based policies such as those that seek to reduce excessive alcohol and substance use by reducing the number of places that sell alcohol in an area. Such measures can reduce not only suicide risk but risk for community and interpersonal violence (33). When creating this component of the response strategy, the committee should take a wide range of potentially pertinent environmental elements into consideration.

#### 3B: Address Long-Term Issues Suggested by the Nature of the Cluster

Although many issues are potentially associated with suicide clusters, long-term issues that are specific or unique to the cluster are important to identify and address. Common factors and precipitating circumstances often are identified among the suicide decedents as part of the assessment and investigation of a cluster (10). Incorporating the use of surveillance systems such as the National Violent Death Reporting System (<https://www.cdc.gov/violenceprevention/datasources/nvdrs/index.html>) can allow communities to have a more comprehensive picture of the circumstances surrounding the cluster deaths. These data can empower communities with knowledge about commonalities such as a higher or lower prevalence of relationship, financial, or substance use problems. Although a previous mental health diagnosis was identified as a precipitating circumstance for many decedents, more than half of National Violent Death Reporting System decedents who died by suicide did not have a known mental health condition, emphasizing the importance of other precipitating circumstances and long-term issues (e.g., relationship problems or loss, recent or impending crises, and life stressors) (34).

Long-term concerns suggested by the nature of the suicide cluster often can provide an opportunity for communities to engage in more focused upstream suicide prevention efforts. Upstream suicide prevention focuses on factors that influence the likelihood that youths and adults will become suicidal (i.e., before the emergence of suicidal behavior) (35). Community investments upstream can help to prevent future clusters and suicides in general. Long-term issues might exist within various

levels of the social ecological model, which emphasizes the interconnectedness among individual, relational, community, and societal levels (36).

One long-term issue that often plagues communities at the societal level of the social ecological model is the stigma surrounding suicide. This stigma often creates a roadblock to help seeking and accessing suicide care (33) and trickles down to all other social ecological levels, including the community level. To address stigma in communities, it must first be acknowledged. A community's ability to address stigma requires time, patience, and resources.

### 3C: Consider Evaluating the Response

Although multiple evidence-based strategies and approaches exist that effectively decrease suicide morbidity and mortality (33), less evidence is available regarding strategies and approaches for responding to suicide clusters. When feasible, conducting a postresponse evaluation, similar to a disaster response after action report (37), could be considered to build best practices to support future responses. Evaluation will be important for growing the literature on responding to suicide clusters while simultaneously helping communities to be better prepared for future clusters.

The committee can consider how to incorporate (and which are most appropriate to include) evaluation indicators into future responses. Even if a formal evaluation is not feasible, at a minimum, future response plans can be updated in response to the community's feedback on how effectively the current plan worked. Aspects of the response plan that worked can be retained and parts that did not work or were not applicable can be removed for an updated version of the plan. Although the response to a suicide cluster might end with this step, communities should return to Step 1 in preparation for future clusters.

## Conclusion

CDC guidance regarding the steps for responding to a suicide cluster are designed to empower communities with guidance to help tailor and direct their response plans. CDC's vision is no lives lost to suicide. To advance this vision, CDC is using data, science, and partnerships and the best available evidence to prevent suicide, with a focus on upstream prevention as well as interventions designed to lessen the immediate and long-term harms associated with suicide and suicide attempts. This comprehensive approach implemented in communities across the United States can help save lives (<https://www.cdc.gov/suicide>).

## Conflicts of Interest

All authors have completed and submitted the International Committee of Medical Journal Editors form for disclosure of potential conflicts of interest. No potential conflicts of interest were disclosed.

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