VA/DoD CLINICAL PRACTICE GUIDELINE FOR ASSESSMENT AND MANAGEMENT OF PATIENTS AT RISK FOR SUICIDE

Department of Veterans Affairs
Department of Defense

QUALIFYING STATEMENTS

The Department of Veterans Affairs (VA) and the Department of Defense (DoD) guidelines are based on the best information available at the time of publication. The guidelines are designed to provide information and assist decision making. They are not intended to define a standard of care and should not be construed as one. Neither should they be interpreted as prescribing an exclusive course of management.

This clinical practice guideline (CPG) is based on a systematic review of both clinical and epidemiological evidence. Developed by a panel of multidisciplinary experts, it provides a clear explanation of the logical relationships between various care options and health outcomes while rating both the quality of the evidence and the strength of the recommendation.

Variations in practice will inevitably and appropriately occur when providers consider the needs of individual patients, available resources, and limitations unique to an institution or type of practice. Therefore, every health care professional using these guidelines is responsible for evaluating the appropriateness of applying them in the setting of any particular clinical situation with a patient-centered approach.

These guidelines are not intended to represent VA or DoD policies. Further, inclusion of recommendations for specific testing, therapeutic interventions, or both within these guidelines does not guarantee coverage of civilian sector care.

Version 3.0 – 2024

Prepared by:

Assessment and Management of Patients at Risk for Suicide Work Group

With support from

Office of Quality and Patient Safety, Veterans Health Administration

and

Clinical Quality Improvement Program, Defense Health Agency

Version 3.0 – 2024[a]

Based on evidence reviewed through March 15, 2023

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[a] VA/DoD Clinical Practice Guideline. (2024). Assessment and Management of Patients at Risk for Suicide Work Group. Washington, DC: U.S. Government Printing Office.

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I.   Introduction

The VA and DoD Evidence-Based Practice Work Group (EBPWG) was established and first chartered in 2004, with a mission to advise the VA/DoD Health Executive Committee "on the use of clinical and epidemiological evidence to improve the health of the population . . ." across the Veterans Health Administration (VHA) and Defense Health Agency (DHA), by facilitating the development of CPG for the VA and DoD populations.(1) Development and update of VA/DoD CPGs is funded by VA Evidence Based Practice, Office of Quality and Patient Safety. The system-wide goal of evidence-based CPGs is to improve patient health and wellbeing.

In 2019, VA and DoD published a CPG for The Assessment and Management of Patients at Risk for Suicide (2019 VA/DoD Suicide Risk CPG), which was based on evidence reviewed through April 10, 2018. Since the release of that CPG, the evidence base on suicide risk has expanded. Consequently, the EBPWG initiated the update of the 2019 VA/DoD Suicide Risk CPG in 2022. This updated CPG's use of Grading of Recommendations Assessment, Development, and Evaluation (GRADE) approach reflects a more rigorous application of the methodology than previous iterations.(2) Therefore, the strength of some recommendations might have been modified because of the confidence in the quality of the supporting evidence (see Evidence Quality and Recommendation Strength).

This CPG provides an evidence-based framework for evaluating and managing care for adult patients at risk for suicide toward improving clinical outcomes. Successful implementation of this CPG will

- Assess the patient's condition and collaborate with the patient, family, and caregivers to determine optimal management of patient care;
- Emphasize the use of patient-centered care and shared decision making;
- Minimize preventable complications and morbidity; and
- Optimize individual health outcomes and quality of life (QoL).

II.   Background

A.   Epidemiology and Impact on the General Population

The annual rate of death by suicide among adults in the United States (U.S.) increased over the first two decades of the 21st century. In 2021, there were 18.0 deaths per 100,000 population, compared with the age- and sex-standardized rate of 14.2 per 100,000 in 2001.(3) Unstandardized suicide mortality rates in 2021 ranged from 16.2 per 100,000 for those 25–29 years of age to 19.8 per 100,000 for those 60–64 years of age. The unstandardized suicide mortality rate for males of 29.3 deaths per 100,000 far exceeded that for females of 7.0 per 100,000. Specific to race categories, individuals identified as American Indian/Alaska Native and White had the highest unstandardized

suicide mortality rates at 21.7 and 20.1 per 100,000, respectively. Unstandardized suicide mortality rates for individuals identified as Asian/Pacific Islander, Black, or multiracial were similar to one another at 8.5, 10.6, and 12.0 per 100,000, respectively. Non-Hispanic individuals had a higher suicide mortality rate than Hispanic individuals (19.4 versus 10.5 per 100,000).([3])

More than one-half (55.0%) of all adult suicide deaths in 2021 involved a firearm as the mechanism of injury. This proportion is consistent with annual adult population data since 2001. In 2021, firearms were the most common single mechanism of injury for death by suicide among males (59.9%), followed by suffocation (24.9%). Among females, the most common mechanisms of injury were firearm (35.3%), suffocation (26.5%), and drug poisoning (25.4%).([3])

Data on non-fatal suicide attempt are less comprehensive than those available for suicide mortality. The Centers for Disease Control and Prevention (CDC) provides estimated rates of non-fatal self-harm, which combines both suicide attempt and self-harm without intent to die, using data from a probability sample of hospital emergency departments (ED).([3]) In 2021, the rate of non-fatal self-harm among adults age 18 or older was 133.1 per 100,000. After the age distribution of the total 2021 adult population is standardized, females had a higher rate than males (144.5 and 122.4 per 100,000, respectively). Rates of non-fatal self-harm were highest for adults under 30 years of age and decreased monotonically with increasing age. Approximately one-half of non-fatal self-harm events involved poisoning as the mechanism of injury (47.2%).([3]) Non-fatal self-harm by cutting or piercing was the second most common single mechanism of injury (28.2%). The largest difference between females and males in terms of mechanism of injury was more frequent use of poisoning observed in non-fatal events among females (52.7% versus 40.7%).

B.　Suicide in Service Members and Veterans

Rates of suicide in the U.S. military and Veteran populations have also been increasing for most of the first two decades of the 21st century.([4]) Historically, the U.S. military population had a lower rate of suicide than the general population. The increase observed since the early 2000s has brought the active-component military suicide mortality rate closer to the general population rate after accounting for age and sex differences between the two populations. In 2021, the suicide mortality rates per 100,000 for the active component, National Guard, and Reserves were 24.4, 27.1, and 21.8, respectively. The suicide mortality rate was highest for Service members 20–24 years of age. The suicide mortality rate for males at 28.3 per 100,000 was greater than that for females at 9.9 per 100,000.([5])

The 2021 U.S. suicide mortality rate, for individuals 17–59 years of age, was 18.2 per 100,000. This age restriction reflects the age range of almost all the U.S. military population. The age- and sex-standardized suicide mortality rates for the active

component, National Guard, and Reserves were 17.1, 19.6, and 16.3 per 100,000, respectively. The most common mechanisms of injury associated with active-component deaths by suicide in 2021 were firearm (67.1%) and hanging/asphyxiation (26.2%).([3])

In 2021 (most recent data available), the unadjusted suicide rate among Veterans was 33.9 per 100,000.([6]) The Veteran suicide mortality rate in 2021, standardized to the age and sex distributions of the 2000 U.S. adult population age 18 and above, was 30.1 per 100,000. This rate was 71.8% higher than the rate of non-Veteran adults of 17.5 per 100,000. The suicide mortality rate was highest for Veterans between 18–34 years of age. Male Veterans had a suicide mortality rate of 35.9 per 100,000, while female Veterans had a rate of 17.5 per 100,000.

Suicide rates were higher among Veterans who used VHA services within the year before their deaths (recent VHA users) than among Veterans who received no such services.([6]) After adjusting for age and sex, the suicide rate among recent VHA users in 2021 (38.7 per 100,000) was 44.3% higher than that of non-recent VHA users (26.8 per 100,000).

C. Challenges in Identifying Suicide Risk in Clinical Practice

Rising suicide rates among general, military, and Veteran populations within the United States have led to increased efforts to identify epidemiologically based factors associated with risk for suicide. Multiple methods of evaluating sensitive and specific risk factors have been investigated. These include traditional approaches (e.g., expert review of cases, face-to-face interviews, provider-administered screening questions, self-report screening tools) and novel approaches (e.g., predictive models based on historical data, machine learning algorithms of social media data and biomarkers).

Nonetheless, application of such epidemiologically based risk factors within clinical practice to facilitate suicide risk identification remains challenging.([7-9]) Many risk factors associated with suicide (e.g., family history of suicide, previous suicide attempts, history of mental disorders, substance use disorders [SUD], medical conditions or illnesses, access to lethal means) also exist among patients who do not have suicidal thoughts, attempt suicide, or die by suicide.

In addition, over the last decade, investigators have sought to identify the known risk factors that might be most predictive and whether there are military-specific risk factors that set Service members and Veterans apart from individuals who have never served in the military, such as combat exposure, chemical or hazardous materials exposure, or long periods of military deployment.([10-15]) These studies have largely produced inconclusive findings about unique risk factors for these populations. For example, findings on the potential association between military deployment and the risk of suicide vary across studies.([10], [16])

III. Scope of This Guideline

This CPG is based on published clinical evidence and related information available through March 15, 2023. It is intended to provide general guidance on best evidence-based practices (see Appendix A for additional information on the evidence review methodology). Although the CPG is intended to improve the quality of care and clinical outcomes (see Introduction), it is not intended to define a standard of care (i.e., mandated or strictly required care).

A. Guideline Audience

This CPG is intended for use by VA, DoD, and community providers and others involved in the health care team assessing and managing adult patients at risk for suicide.

B. Guideline Population

The patient population of interest for this CPG is adult patients at risk for suicide who may receive care in the VA or DoD health care delivery systems, or VA and DoD adult beneficiaries who receive care from community-based providers. Recommendations in this CPG are applicable for any adult patients of VA or DoD, inclusive of all care locations (VA, DoD, or community-based care).

IV. Highlighted Features of This Guideline

A. Highlights in This Guideline Update

This document is an update to the 2019 VA/DoD Management of Suicide Risk CPG,[b] and contains the following significant revisions:

- Updated Algorithm;
- Reviewed studies focused on specific outcomes to include critical outcomes of suicide attempt and suicide death;
- Added eight new recommendations; 12 reviewed and replaced, 3 amended, and 1 no change;
- Used more rigorous application of GRADE methodology;
- Updated Routine Care for Suicide Prevention section; and
- Updated Research Priorities section.

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[b] See the 2019 VA/DoD Clinical Practice Guideline for the Assessment and Management of Patients at Risk for Suicide. Available at: https://www.healthquality.va.gov/

The body of research on suicide risk management, suicide prevention, intervention, and postvention continues to grow. This CPG includes updated recommendations on the following key topics.

1. Universal screening: The 2019 Suicide Risk CPG offered no specific recommendation regarding universal screening programs. The 2024 Suicide Risk CPG states that there is insufficient evidence to recommend for or against suicide risk screening programs to reduce the risk of suicide or suicide attempts (see Recommendation 1).

2. Selection of screening tool: The 2019 Suicide Risk CPG suggested (categorized as *Weak for*) the use of a validated screening tool (2019 Recommendation 1) and highlighted the Patient Health Questionnaire-9 (PHQ-9) item 9 (2019 Recommendation 2). In the 2024 Suicide Risk CPG, the Work Group has included additional validated screening tools for the general population versus screening for an at-risk population and has removed reference to the PHQ-9 Item 9 (see Recommendation 2).

3. Dialectal behavior therapy: The 2019 Suicide Risk CPG suggested (categorized as *Weak for*) the use of dialectical behavior therapy (DBT) for patients with borderline personality disorder (BPD) (2019 Recommendation 7); the 2024 Suicide Risk CPG recommendation is categorized as *Neither for nor against* for a broader patient population (see Recommendation 9).

4. Ketamine infusion: The 2024 Suicide Risk CPG Work Group changed the strength of the recommendation on the use of ketamine infusion (and now esketamine) for suicide risk management from a *Weak for* recommendation (2019 Recommendation 10) to a *Neither for nor against* recommendation (see Recommendation 13).

5. Lithium: The 2024 Suicide Risk CPG Work Group changed the lithium recommendation for suicide risk management from a *Weak for* recommendation (2019 Recommendation 11) to a *Neither for nor against* recommendation (see Recommendation 14).

As noted above, the methodology used in developing this CPG has been updated since the prior versions and reflects a more precise application of the methodology than used in previous iterations, which are detailed in Appendix A. It is important to note that the recommendation strength downgrades from *Weak for* to *Neither for nor against* recommendations do not imply that providers should avoid these options, rather that the data from the current systematic evidence review is insufficient to make a recommendation when using the more rigorous methodology.

The 2024 Suicide Risk CPG Work Group focused largely on developing new and updated recommendations based on the systematic evidence review conducted for the priority

areas addressed by the key questions (KQ) (see Summary of Guideline Development Methodology). The 2019 Suicide Risk CPG included recommendations carried forward from the 2013 Suicide Risk CPG. In addition to the new and updated recommendations, the Work Group considered, without a complete review of the relevant evidence, the current applicability of these other recommendations included in the previous 2019 Suicide Risk CPG, subject to evolving practice in today's environment.

The 2024 Suicide Risk CPG systematic evidence review was based on a set of defined KQs related to specific topic areas of suicide risk. As part of the CPG process, the 2024 Suicide Risk Work Group considered the 2019 Suicide Risk CPG's recommendations. Several 2019 Suicide Risk CPG recommendations were not covered by a 2019 KQ and were based on evidence from the 2013 Suicide Risk CPG's systematic evidence review (i.e., were carried forward from the 2013 CPG). Because the 2024 Suicide Risk CPG used an updated GRADE methodology, the 2024 Suicide Risk CPG Work Group felt it was important to review the 2019 Suicide Risk CPG recommendations carried forward from the 2013 Suicide Risk CPG. Because the 2013 Suicide Risk CPG systematic evidence review was unavailable to the 2024 Suicide Risk CPG Work Group and its evidence was not reevaluated using the more precise GRADE methodology, this set of recommendations was deleted unless the topic was covered by a 2019 or 2024 KQ. This action resulted in a consistent methodology across recommendations within the 2024 Suicide Risk CPG.

As such, the 2024 Suicide Risk CPG Work Group considered the strength of the evidence cited for each recommendation in the 2019 Suicide Risk CPG, as well as the intervention's harms and benefits, patients' values and preferences, and other implications, where possible. The Work Group referred to the available evidence as summarized in the body of the 2019 Suicide Risk CPG but did not systematically reassess all the evidence. In some limited instances (such as the 2019 Suicide Risk CPG recommendations carried forward from the 2013 Suicide Risk CPG), relevant peer-reviewed literature published since the 2019 Suicide Risk CPG was considered, along with the original evidence base for the specific recommendation. The CPG Work Group recognizes that although there are sometimes practical reasons for synthesizing findings from a previous systematic evidence review, previous recommendations, or recent peer-reviewed publications into an updated CPG, doing so does not involve an original, comprehensive systematic evidence review and might introduce bias.

B.   Components of the Guideline

This CPG provides clinical practice recommendations for the care of patients at risk for suicide (see Recommendations). In addition, the Algorithm incorporates the recommendations in the context of the flow of patient care. This CPG also includes Research Priorities, which list areas the Work Group identified as needing additional research.

To accompany this CPG, the Work Group also developed toolkit materials for providers and patients, including a provider summary, patient summary, and pocket card, which can be found at https://www.healthquality.va.gov/index.asp.

C. Racial and Ethnic Demographic Terminology in This Guideline

Demographic terms referring to an individual's race or ethnicity (e.g., Hispanic, Latino or Latina, Asian, Native American, Black, African American, White) can be ambiguously defined and understood, reflecting diverse geographies, histories, cultures, and experiences. Aligned with the recent Executive Order on Further Advancing Racial Equity and Support for Underserved Communities through the Federal Government,[c] the Work Group used terms such as Black rather than African American and White rather than Caucasian to avoid presumptions about ancestry and to promote inclusivity, clarity, and consistency. However, to represent accurately the evidence on which this CPG is based, the Work Group generally deferred to racial and ethnic terminology as reported in the published systematic reviews (SR), clinical trials, and other studies comprising that evidence when summarizing or otherwise referring to those studies. Consequently, usage of demographic terms in this CPG might appear inconsistent.

V. Guideline Development Team

The VA Evidence Based Practice, Office of Quality and Patient Safety, in collaboration with the Clinical Quality Improvement Program, DHA, identified the following six providers to serve as Champions (i.e., leaders) of this CPG's Work Group: Lisa A. Brenner, PhD, ABPP and Nazanin Bahraini, PhD from VA; and Vincent Capaldi, ScM, MD, MS, Kate McGraw, PhD, Kenneth Richter, DO, and Scott Williams, MD from DoD.

The Work Group comprised individuals with the following areas of expertise: psychology, emergency medicine, epidemiology, nursing, primary care, pharmacy, mental/behavioral health counseling, and social work. Table 1 lists the Work Group and Guideline Development Team members. This CPG Work Group, led by the Champions, was tasked with

- Determining the scope of the CPG;
- Crafting clinically relevant KQs to guide the systematic evidence review;
- Identifying discussion topics for the patient focus group and considering the patient perspective;
- Providing direction on inclusion and exclusion criteria for the systematic evidence review and the assessment of the level and quality of evidence; and
- Developing evidence-based clinical practice recommendations, including determining the strength and category of each recommendation.

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[c] Executive Order on Further Advancing Racial Equity and Support for Underserved Communities Through the Federal Government | The White House

The Lewin Team, including The Lewin Group, ECRI, Sigma Health Consulting, and Duty First Consulting, was contracted by VA to help develop this CPG.

Table 1. Guideline Work Group and Guideline Development Team

Organization	Names*
Department of Veterans Affairs	**Lisa A. Brenner, PhD, ABPP (Champion)**
	Nazanin Bahraini, PhD (Champion)
	Bridget Matarazzo, PsyD
	Candice Bodie, LCSW
	Edgar Villarreal, PhD
	Joseph Constans, PhD
	Matthew A. Fuller, PharmD, FASHP, BCPP
	Ronald Nardi, MSN, PMHCNS-BC, APRN
	Stephanie Gamble, PhD
	Steven K. Dobscha, MD
Department of Defense	**Kate McGraw, PhD (Champion)**
	Kenneth Richter Jr., DO, CPE, FAPA (Champion)
	Scott Williams, MD, FACP, FAASM, DFAPA (Champion)
	Vincent Capaldi, ScM, MD, DFAPA, FAASM, FACP (Champion)
	Adrienne Manasco, PsyD
	Eric J. Serpico, DO
	Derek J. Smolenski, PhD, MPH
	Jennifer Tucker, PhD
	Kendra Parker-Pitts, MD
	Svetlana Kahle, PsyD
	Vanessa Kirkwood, PharmD
VA Evidence Based Practice, Office of Quality and Patient Safety Veterans Health Administration	James Sall, PhD, FNP-BC
	Jennifer Ballard-Hernandez, DNP, RN, FNP-BC
	René Sutton, BS, HCA, FAC-COR II
	Sarah Davis-Arnold, MSN, RN, NPD-BC, RCIS, EBP-C
Clinical Quality Improvement Program Defense Health Agency	Elaine Stuffel, MHA, BSN, RN
	Cynthia F. Villarreal, BSN, RN
	Isabella Alvarez, MA, BSN, RN
	Lynn Young, BSN, RN, CIC
	Gwen Holland, MSN, RN

Organization	Names*
The Lewin Group	Jennifer Weil, PhD
	Charles Zachariades, MSc
	Savannah Lantz, MPH, RN
	Katherine McCracken, BA
	Kristen Godwin, MPH
ECRI	Stacey Uhl, MS
	James Reston, PhD, MPH
	Rebecca Rishar, MSLS
	Kelley Tipton, MPH
	Emilio Berdiel, MPH
	Aggee Loblack, MPH
	Taylor Phillips, MPH
	Jesse Wagner, MA
Sigma Health Consulting	Frances M. Murphy, MD, MPH
	James G. Smirniotopoulos, MD
Duty First Consulting	Kate Johnson, BS
	Rachel Piccolino, BA
	Anita Ramanathan, BA
	Jake Fausnacht, BS

*Additional contributor contact information is available in Appendix F.

VI. Summary of Guideline Development Methodology

The methodology used in developing this CPG follows the *Guideline for Guidelines*, an internal document of the VA/DoD EBPWG updated in July 2019 that outlines procedures for developing and submitting VA/DoD CPGs.(17) The *Guideline for Guidelines* is available at http://www.healthquality.va.gov/policy/index.asp. This CPG also aligns with the National Academy of Medicine's (NAM) principles of trustworthy CPGs (e.g., explanation of evidence quality and strength, the management of potential conflicts of interest (18), interdisciplinary stakeholder involvement, use of SR and external review).(19) Appendix A provides a detailed description of the CPG development methodology.

A. Evidence Quality and Recommendation Strength

The Work Group used the GRADE approach to craft each recommendation and determine its strength. Per the GRADE approach, recommendations must be evidence based and cannot be made based on expert opinion alone. The GRADE approach uses

the following four domains to inform the strength of each recommendation (see Determining Recommendation Strength and Direction).(20)

1. Confidence in the quality of the evidence
2. Balance of desirable and undesirable outcomes
3. Patient values and preferences
4. Other considerations, as appropriate (e.g., resource use, equity, acceptability, feasibility, subgroup considerations)

Using these four domains, the Work Group determined the relative strength of each recommendation (*Strong* or *Weak*). The strength of a recommendation is defined as the extent to which one can be confident that the desirable effects of an intervention outweigh its undesirable effects and is based on the framework above, which incorporates the four domains.(21) A *Strong* recommendation generally indicates *High* or *Moderate* confidence in the quality of the available evidence, a clear difference in magnitude between the benefits and harms of an intervention, similar patient values and preferences, and understood influence of other implications (e.g., resource use, feasibility).

In some instances, insufficient evidence exists on which to base a recommendation for or against a particular therapy, preventive measure, or other intervention. For example, the systematic evidence review might have found little or no relevant evidence, inconclusive evidence, or conflicting evidence for the intervention. The manner in which this finding is expressed in the CPG might vary. In such instances, the Work Group might include among its set of recommendations a statement of insufficient evidence for an intervention that might be in common practice although it is unsupported by clinical evidence and particularly if other risks of continuing its use might exist (e.g., high opportunity cost, misallocation of resources). In other cases, the Work Group might decide to exclude this type of statement about an intervention. For example, the Work Group might remain silent where an absence of evidence occurs for a rarely used intervention. In other cases, an intervention might have a favorable balance of benefits and harms but might be a standard of care for which no recent evidence has been generated.

Using these elements, the Work Group determines the strength and direction of each recommendation and formulates the recommendation with the general corresponding text, as shown in Table 2.

Table 2. Strength and Direction of Recommendations and General Corresponding Text

Recommendation Strength and Direction	General Corresponding Text
Strong for	We recommend . . .
Weak for	We suggest . . .
Neither for nor against	There is insufficient evidence to recommend for or against . . .
Weak against	We suggest against . . .
Strong against	We recommend against . . .

That a recommendation's strength (i.e., *Strong* versus *Weak*) is distinct from its clinical importance (e.g., a *Weak* recommendation is evidence based and still important to clinical care) is important to note. The strength of each recommendation is shown in Recommendations.

This CPG's use of GRADE reflects a more rigorous application of the methodology than previous iterations; the determination of the strength of the recommendation is more directly linked to the confidence in the quality of the evidence on outcomes that are critical to clinical decision making. The confidence in the quality of the evidence is assessed using an objective, systematic approach independent of the clinical topic of interest. Therefore, recommendations on topics for which designing and conducting rigorous studies might be inherently more difficult (e.g., randomized controlled trials [RCT]) are typically supported by lower quality evidence and, in turn, *Weak* recommendations. Recommendations on topics for which rigorous studies can be designed and conducted might more often be *Strong* recommendations. Per GRADE, if the quality of evidence differs across the relevant critical outcomes, the lowest quality of evidence for any of the critical outcomes determines the overall quality of the evidence for a recommendation.(2, 22) This stricter standard provides a consistent approach to determining recommendation strengths. For additional information on GRADE or CPG methodology, see Appendix A.

B.   Categorization of 2024 Clinical Practice Guideline Recommendations

Evidence-based CPGs should be current. Except for an original version of a new CPG, staying current typically requires revision of a CPG's previous versions based on new evidence or as scheduled subject to time-based expirations.(23) For example, the USPSTF has a process for monitoring the emergence of new evidence that could prompt an update of its recommendations, and it aims to review each topic at least every 5 years for either an update or reaffirmation.(24)

Recommendation categories were used to track how the previous CPG's recommendations could be reconciled. These categories and their corresponding definitions are similar to those used by the National Institute for Health and Care Excellence (NICE, England).(25, 26) Table 3 lists these categories, which are based on

whether the evidence supporting a recommendation was systematically reviewed, the degree to which the previous CPG's recommendation was modified, and whether a previous CPG's recommendation is relevant in the updated CPG.

Additional information regarding these categories and their definitions can be found in Recommendation Categorization. The 2024 CPG recommendation categories can be found in Recommendations. Appendix E outlines the 2024 VA/DoD Suicide Risk CPG's recommendation categories.

Table 3. Recommendation Categories and Definitions[a]

Evidence Reviewed	Recommendation Category	Definition
Reviewed[b]	New-added	New recommendation
	New-replaced	Recommendation from previous CPG was carried forward and revised
	Not changed	Recommendation from previous CPG was carried forward but unchanged
	Amended	Recommendation from previous CPG was carried forward with a nominal change
	Deleted	Recommendation from previous CPG was deleted
Not Reviewed[c]	Not changed	Recommendation from previous CPG was carried forward but unchanged
	Amended	Recommendation from previous CPG was carried forward with a nominal change
	Deleted	Recommendation from previous CPG was deleted

[a] Adapted from the NICE guideline manual (2012)(25) and Garcia et al. (2014)(26)

[b] The topic of this recommendation was covered in the evidence review carried out as part of the development of the current CPG.

[c] The topic of this recommendation was not covered in the evidence review carried out as part of the development of the current CPG.

Abbreviation: CPG: clinical practice guideline

C.   Management of Potential or Actual Conflicts of Interest

Management of COIs for the CPGs is conducted as described in the *Guideline for Guidelines*.(17) Further, the *Guideline for Guidelines* refers to details in the VHA Handbook 1004.07 Financial Relationships between VHA Health Care Professionals and Industry (November 2014, issued by the VHA National Center for Ethics in Health Care),(27) as well as to disclosure statements (i.e., the standard disclosure form that is completed at least twice by CPG Work Group members and the guideline development team).(17) The disclosure form inquires regarding relevant financial and intellectual interests or other relationships with, for example, manufacturers of commercial products, providers of commercial services, or other commercial interests. The disclosure form also inquires regarding any other relationships or activities that could be

perceived to have influenced, or that give the appearance of potentially influencing, a respondent's contributions to the CPG. In addition, instances of potential or actual COIs among the CPG Work Group and the guideline development team were subject to random web-based identification via standard electronic means (e.g., Centers for Medicare and Medicaid Services Open Payments, ProPublica). Instances of potential or actual COIs were referred to the VA and DoD program offices and reviewed with the CPG Work Group Champions. Several CPG Work Group members identified intellectual COIs and subsequently were recused from relevant deliberations. No COIs were identified among the guideline development team. Disclosure forms are on file with the VA Office of Quality and Patient Safety and are available upon request.

D.   Patient Perspective

When developing a CPG, consideration should be given to patient perspectives and experiences, which often vary from those of providers.(22, 28) Focus groups can be used to help collect qualitative data on patient perspectives and experiences. VA and DoD Leadership arranged a virtual patient focus group on March 2, 2023. The focus group aimed to gain insights into patients at risk for suicide of potential relevance and incorporate these into the CPG, as appropriate. Topics discussed included the participants' priorities, challenges they have experienced, information they have received regarding their care and the impacts of their care on their lives.

The patient focus group comprised a convenience sample of 16 participants. Of the 16 participants, 11 identified as patients or patient/providers, one identified as a caregiver, and four identified as researchers or advocates. Of the 11 patients or patients/providers, there were 10 males and one female. Fifteen participants were Veterans who received care from the VA Health Care System, and none of the participants were Service members who received care from the DoD health system. The Work Group acknowledges this convenience sample is not representative of all patients who are pregnant within the VA and DoD health care systems and, thus, findings are ungeneralizable and do not comprise evidence. For more information on the patient focus group methods and findings, see Appendix B. The patient focus group participants were provided the opportunity to review the final draft and provide additional feedback.

E.   External Peer Review

The Work Group drafted, reviewed, and edited this CPG using an iterative process. For more information, see Drafting and Finalizing the Guideline. Once the Work Group members completed a near-final draft, they identified experts from VA and DoD health care systems and outside organizations generally viewed as experts in their respective fields to review it. The draft was sent to those experts for a 14-business-day review and comment period. The Work Group considered all feedback from the peer reviewers and modified the CPG where justified, in accordance with the evidence. Detailed information on the external peer review can be provided by the VA Office of Quality and Patient Safety.

F.   Implementation

This CPG and algorithm are designed for adaptation by individual health care providers with respect to unique patient considerations and preferences, local needs, and resources. The algorithm serves as a tool to prompt providers to consider key decision points in the care for a patient with suicide risk. The Work Group submits suggested performance metrics for VA and DoD to use when assessing the implementation of this CPG. Robust implementation is identified in VA and DoD internal implementation plans and policies. Additionally, implementation would entail wide dissemination through publication in the medical literature, online access, educational programs, and, ideally, electronic medical record programming in the form of clinical decision support tools at the point of care.

VII. Approach to Care in the Department of Veterans Affairs and Department of Defense

A.   Patient-Centered Care

Intended to consider patient needs and preferences, guideline recommendations represent a whole/holistic health approach to care that is patient-centered, culturally appropriate, and available to people with limited literacy skills and physical, sensory, or learning disabilities. VA/DoD CPGs encourage providers to use a patient-centered, whole/holistic health approach (i.e., individualized treatment based on patient needs, characteristics, and preferences). This approach aims to treat the particular condition while also optimizing the individual's overall health and wellbeing.

Regardless of the care setting, all patients should have access to individualized evidence-based care. Patient-centered care can decrease patient anxiety, increase trust in providers, and improve treatment adherence.([29](#), [30](#)) A whole/holistic health approach (https://www.va.gov/wholehealth/) empowers and equips individuals to meet their personal health and wellbeing goals. Good communication is essential and should be supported by evidence-based information tailored to each patient's needs. An empathetic and non-judgmental approach facilitates discussions sensitive to sex, culture, ethnicity, and other differences.

B.   Shared Decision Making

This CPG encourages providers to practice shared decision making, a process in which providers, patients, and patient care partners (e.g., family, friends, caregivers) consider clinical evidence of benefits and risks as well as patient values and preferences to make decisions regarding the patient's treatment.([31](#)) Shared decision making is emphasized in *Crossing the Quality Chasm,* an Institute of Medicine (IOM), now NAM, report in 2001 ([32](#)) and is inherent within the whole/holistic health approach. Providers must be adept at presenting information to their patients regarding individual treatments, expected risks, expected outcomes, and levels or settings of care or both, especially where

patient heterogeneity in weighing risks and benefits might exist. The VHA and DHA have embraced shared decision making. Providers are encouraged to use shared decision making to individualize treatment goals and plans based on patient capabilities, needs, and preferences.

C.   Patients with Co-occurring Conditions

Co-occurring conditions can modify the degree of risk, impact diagnosis, influence patient and provider treatment priorities and clinical decisions, and affect the overall approach to the management of suicide risk. Many Veterans, Service members, and their families have one or more co-occurring conditions. Because suicide risk is sometimes accompanied by co-occurring conditions, managing suicide risk collaboratively with other care providers is often best. Some co-occurring conditions may require early specialist consultation to determine necessary changes in treatment or to establish a common understanding of how care will be coordinated. This approach might entail reference to other VA/DoD CPGs (e.g., Management of Substance Use

Disorder [SUD], Use of Opioids in the Management of Chronic Pain; Management of Bipolar Disorder; Management of First-Episode Psychosis and Schizophrenia; Management of Posttraumatic Stress Disorder [PTSD] and Acute Stress Disorder; Management of Major Depressive Disorder [MDD]).[d]

VIII. Algorithm
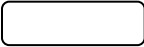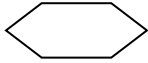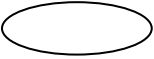
This CPG's algorithm is designed to facilitate understanding of the clinical pathway and decision-making process used in managing patients at risk for suicide. This algorithm format represents a simplified flow of the management of patients at risk for suicide and helps foster efficient decision making by providers. It includes

- Steps of care in an ordered sequence,
- Decisions to be considered,
- Decision criteria recommended, and
- Actions to be taken.

The algorithm is a step-by-step decision tree. Standardized symbols display each step, and arrows connect the numbered boxes indicating the order in which the steps should be followed.(33) Sidebars 1-5 provide more detailed information to assist in defining and interpreting elements in the boxes.

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[d]   The VA/DoD Clinical Practice Guidelines are available at: https://www.healthquality.va.gov/

Shape	Description
⬭ (rounded rectangle)	Rounded rectangles represent a clinical state or condition.
⬡ (hexagon)	Hexagons represent a decision point in the process of care, formulated as a question that can be answered "Yes" or "No."
▭ (rectangle)	Rectangles represent an action in the process of care.
⬭ (oval)	Ovals represent a link to another section within the algorithm.

Appendix H contains alternative text descriptions of the algorithms.

A.   Module A: Identification of Patients at Acute Risk for Suicide

1 Patient presents with warning signs (may have suicidal ideation with or without intent or recent self-directed violence; **see Sidebar 1**).

2 Patient presents in context where suicide risk screening occurs.

3 Screen for current suicide risk using validated tool **(See Recommendation 2)** or **Continue to Module B** to complete suicide risk assessment.

4 Does the patient screen positive for and/or endorse suicidal ideation?

No →

5 Continue routine management of care and presenting concerns. Build protective factors **(See Sidebar 2)**. Consider referral to mental/behavioral health.

Yes

6 Continue to **Module B: Assessment, Box 7**

B. Module B: Comprehensive Suicide Risk Assessment by Provider

7 — Patient identified from **Module A**

8 — Complete a suicide risk assessment **(See Sidebar 2; See Routine Care section).**

9 — Is this patient at HIGH ACUTE RISK for suicide (see **Sidebar 3a**)?
Core Features*
- Suicidal ideation with intent to die by suicide AND
- Inability to maintain safety independently without external help or support

No →

11 — Is this patient at INTERMEDIATE ACUTE RISK for suicide (see **Sidebar 3a**)?
Core Features*
- May present similarly to those at high acute risk, but lack intent to act on suicidal ideation and have the ability to maintain safety independently

No →

13 — Patient identified to be at LOW ACUTE RISK for suicide (see **Sidebar 3a**)
Core Features*
- No current suicidal intent AND
- No specific and current suicidal plan AND
- No recent preparatory behaviors AND
- Collective high confidence (e.g., patient, care provider, family member) in the ability of the patient to independently maintain safety

9 Yes ↓

10 — Continue to **Module C: Management, Box 15**

11 Yes ↓

12 — Continue to **Module C: Management, Box 24**

13 ↓

14 — Continue to **Module C: Management, Box 29**

* Source: Rocky Mountain MIRECC Therapeutic Risk Management – Risk Stratification Table. The 2024 Suicide Risk CPG's systematic evidence review did not identify evidence to recommend one risk assessment or stratification tool over another. This tool, which is based on best practices, is included as an example. Available at: https://www.mirecc.va.gov/visn19/trm/

C. Module C: Management of Patients at Acute Risk for Suicide

15 — Patient at HIGH ACUTE RISK for suicide

16 — Directly observe patients and keep them in an environment with limited access to lethal means (e.g., keep away from sharps, cords or tubing, toxic substances) until they are transferred to a safe environment or are no longer at high acute risk.

17 — Is psychiatric hospitalization feasible and indicated to maintain safety? — No / Yes

18 — Follow local procedures for hospitalization, which may include the need for involuntary hospitalization.

19 — During hospitalization target modifiable risk and protective factors (**See Sidebar 4**). Initiate evidence-based treatment to reduce suicide risk and co-occurring conditions (**See Sidebar 5**).

20 — Continue to ensure patient safety in care setting; target modifiable risk and protective factors as is feasible (see **Sidebar 4**).

21 — Has the patient's risk for suicide decreased to intermediate or low? — Yes

22 — If the patient was hospitalized and is to be discharged, consider intervention in **Sidebar 5**. Return to **Module B: Comprehensive Suicide Risk Assessment**

23 — Continue to implement risk mitigation strategies noted in **Box 20**

24 — Patient at INTERMEDIATE ACUTE RISK for suicide

25 — Is the patient able to independently maintain safety AND do the benefits of outpatient management outweigh the risks of hospitalization? — No / Yes

26 — Provide enhanced care management, which should include:
- Frequent contact,
- Re-assessment of risk (**See Sidebar 3b**)
- Development or update of safety plan, and
- Lethal means safety counseling

Outpatient care should address the factors contributing to elevation in acute risk (e.g., exacerbation of symptoms, housing concerns) and modifiable risk factors (**See Sidebars 4 and 5**).

For individuals being discharged from acute care settings (**See Sidebar 5**).

27 — Has the patient's acute risk for suicide decreased to low? — No / Yes

28 — Continue to **Module C: Management, Box 29**

29 — Patient at LOW ACUTE RISK for suicide

30 — Focus care on mitigation of **CHRONIC RISK** through enhancing protective factors and reducing modifiable risk factors (**See Sidebars 3b and 4**).

Consider upstream suicide prevention, health promotion interventions, and applicable resources (e.g., financial, housing).

Consider interventions outlined in **Sidebar 5.**

Outpatient mental/behavioral health treatment may be indicated, particularly if suicidal ideation and psychiatric symptoms are co-occurring.

Risk should be re-assessed per clinical judgment.

31 — Continue Management per Box 30

Sidebar 1. Suicide Warning Signs

A warning sign is a person-specific thought, feeling, physical sensation, behavior, or any combination of the foregoing that indicates the presence of acute risk.

Direct warning signs might include the following.

- Suicide related communication (e.g., suicide note, mention of wishing to die)
- Preparation for suicide (e.g., giving items away)
- Seeking access or recent use of lethal means

Indirect warning signs might include the following.

- Substance use: uses substances increasingly or excessively
- Hopelessness: feels that nothing can be done to improve the situation
- Purposelessness: feels no sense of purpose, no reason for living
- Anger: exhibits rage, seeks revenge
- Recklessness: engages impulsively in risky behavior
- Feeling trapped: experiences feelings of being trapped with no way out
- Social withdrawal: withdraws from family, friends, society
- Anxiety: feels agitated or irritable, wants to "jump out of my skin"
- Mood changes: exhibits dramatic changes in mood, lack of interest in usual activities
- Sleep disturbances: experiences insomnia, inability to sleep, or sleeping all the time
- Guilt or shame: expresses overwhelming self-blame or remorse

Sidebar 2. Risk and Protective Factors for Suicide

When performing a suicide risk assessment, we suggest including, but not limited to, factors (see Recommendation 3 and Table 6) within the following domains.

- Self-directed violence (SDV) thoughts and behaviors
- Current psychiatric conditions and current or past mental/behavioral health treatment
- Psychiatric symptoms
- Social determinants of health and adverse life events
- Availability of lethal means
- Physical health conditions
- Demographic characteristics

We also suggest including protective factors, such as the following.

- Access to mental/behavioral health care
- Sense of connectedness
- Problem-solving skills
- Sense of spirituality
- Mission or purpose
- Physical health
- Employment
- Social and emotional wellbeing

Sidebar 3a. Essential Features from Risk Stratification Table – Acute Risk*		
Level of Risk	**Core Features**	**Action****
High Acute Risk	• Suicidal ideation with intent to die by suicide *and* • Inability to maintain safety independently without external help or support Patients will often have a plan for suicide and access to lethal means. They might be experiencing an exacerbation of mental/behavioral health conditions (e.g., MDD episode, acute psychosis, recent or current recurrence of drug use, increased BPD symptomatology), psychosocial stressors (e.g., job loss, relationship dissolution, recurrence of alcohol use), or both. They might have also recently engaged in suicidal SDV (e.g., suicide attempt, preparatory behaviors).	Patients typically require psychiatric hospitalization (either voluntary or involuntary) to maintain safety and aggressively target modifiable factors. Patients must be directly observed on a secure unit and be kept in an environment with limited access to lethal means (e.g., kept away from sharps, cords, tubing, toxic substances). During hospitalization, co-occurring psychiatric symptoms should also be addressed.
Intermediate Acute Risk	• Suicidal ideation *and* • Ability to maintain safety, independent of external help or support Patients might present similarly to those at high acute risk, sharing many of the features. The only difference might be a lack of intent, based on an identified reason for living (e.g., children), and ability to abide by a safety plan and maintain their own safety. Preparatory behaviors are likely to be absent.	Consider voluntary psychiatric hospitalization if related factors driving risk are responsive to inpatient treatment (e.g., acute psychosis). Outpatient management should include the following. • Frequent contact • Reassessment of risk • Development or update of safety plan • LMS counseling Outpatient care should address the factors contributing to elevation in acute risk (e.g., financial stress, exacerbation of symptoms).

Sidebar 3a. Essential Features from Risk Stratification Table – Acute Risk*		
Level of Risk	**Core Features**	**Action****
Low Acute Risk	• Possible suicidal ideation but no current suicidal intent *and* • No specific and current suicidal plan *and* • No recent preparatory behaviors *and* • Collective high confidence (e.g., patient, care provider, family member) in the ability of the patient to independently maintain safety Patients might have suicidal ideation, but it will be with little or no intent or specific current plan. If a plan is present, the plan is general, vague, or both and without associated preparatory behaviors (e.g., "One of these days, I might just end it."). Patients are likely to be capable of engaging appropriate coping strategies and willing and able to use a safety plan in a crisis situation.	Care should focus on mitigation of chronic risk through enhancing protective factors and reducing modifiable risk factors. Consider upstream suicide prevention, health promotion interventions, and applicable resources (e.g., financial, housing). Outpatient mental/behavioral health treatment might be indicated, particularly if suicidal ideation and psychiatric symptoms are co-occurring. Risk should be reassessed per clinical judgment.

*   Source: Rocky Mountain MIRECC Therapeutic Risk Management – Risk Stratification Table. The 2024 Suicide Risk CPG's systematic evidence review did not identify evidence to recommend one risk assessment or stratification tool over another. This tool, which is based on best practices, is included as an example. Available at: https://www.mirecc.va.gov/visn19/trm/

** Action taken should also address patient's chronic risk level (see Sidebar 3b).

Abbreviations: BPD: borderline personality disorder; LMS: lethal means safety; MDD: major depressive disorder; SDV: self-directed violence

Sidebar 3b. Essential Features from Risk Stratification Table – Chronic Risk*		
Level of Risk	**Core Features**	**Action**
High Chronic Risk	• Chronic medical condition • Chronic mental/behavioral health conditions • Chronic pain • Chronic suicidal ideation • History of prior suicide attempt or attempts • History of SUD • Limited ability to identify reasons for living • Limited coping skills • Unstable psychosocial status (e.g., unstable housing, erratic relationships, marginal employment) These patients are considered at chronic risk for becoming acutely suicidal, often in the context of psychosocial stressors (e.g., loss of relationship, job loss, relapse on drugs).	Patients typically require the following. • Routine mental/behavioral health follow-up • Well-developed safety plan and LMS counseling • Routine suicide risk assessment • Coping skills building • Management of co-occurring psychiatric symptoms

Sidebar 3b. Essential Features from Risk Stratification Table – Chronic Risk*		
Level of Risk	**Core Features**	**Action**
Intermediate Chronic Risk	Patients might feature similar chronicity as those at high chronic risk with respect to psychiatric, substance use, medical, and chronic pain conditions. Protective factors, coping skills, reasons for living, and relative psychosocial stability suggest enhanced ability to endure future crisis without engaging in suicidal SDV.	Patients typically require the following. • Routine mental/behavioral health care to optimize psychiatric condition and maintain or enhance coping skills and protective factors • Well-developed safety plan and LMS counseling • Management of co-occurring psychiatric symptoms
Low Chronic Risk	Patients might range from those with no or little in the way of mental/behavioral health or substance use problems, to patients with significant mental illness that is associated with relatively abundant strengths/resources. Stressors have typically been endured without suicidal ideation emerging. The following factors will generally be missing. • History of SDV • Chronic suicidal ideation • Tendency toward being highly impulsive • Risky behaviors • Limited psychosocial functioning	Patients are appropriate for mental/behavioral health care as needed. Some might be managed in primary care settings; others might require mental/behavioral health follow-up to continue successful treatments.

* Source: Rocky Mountain MIRECC Therapeutic Risk Management – Risk Stratification Table. The 2024 Suicide Risk CPG's systematic evidence review did not identify evidence to recommend one risk assessment or stratification tool over another. This tool, which is based on best practices, is included as an example. Available at: https://www.mirecc.va.gov/visn19/trm/

Abbreviations: LMS: lethal means safety; SDV: self-directed violence; SUD: substance use disorder

Sidebar 4. Modifiable Risk Factors
• Modifiable risk factors, such as insomnia, have the potential to be changed. • Such risk factors can often be reduced by certain interventions, such as prescribing antidepressant medication for depression, engaging in LMS counseling, or decreasing isolation by strengthening social support.

Abbreviations: LMS: lethal means safety

Sidebar 5. Evidence-Based Interventions to Reduce Suicidal Ideation, Suicidal Behavior, or Both
Non-pharmacologic Treatments (see Recommendations 5-6, 18) • CBT-based interventions for suicide prevention • PST-based interventions • Self-guided digital interventions (app or web) that include, but are not limited to, cognitive-behavioral-based therapeutic content **Pharmacologic Treatments** (see Recommendations 11-12) • Ketamine infusion (among patients with suicidal ideation and MDD) • Clozapine (among patients with schizophrenia or schizoaffective disorder and either suicidal ideation or a history of suicide attempt) **Other** (see Recommendations 16 and 21) • Periodic caring communications (following hospitalization for suicide risk) • Reduced access to lethal means

Abbreviations: CBT: cognitive behavioral therapy; MDD: major depressive disorder; PST: problem-solving therapy

IX. Routine Care for Suicide Prevention

The recommendations included in this CPG address only some aspects of care for patients at risk for suicide. Some aspects of routine care have insufficient evidence to support a recommendation. In many cases, studies assessing the efficacy of these components of routine care do not exist; however, the components have been established over the years as strong practices and are often supported by regulatory and accrediting agencies that establish practice for routine care. Providers should consider the information provided in this section as they implement routine suicide prevention care.

Because of growing evidence that most patients who die by suicide received health care outside mental/behavioral health in the 12 months before their death, integrating suicide prevention across all aspects of care is critical. This approach ensures that every health care encounter is an opportunity to influence suicide prevention outcomes. The complexities of suicide necessitate the integration of expertise from various health domains, such as primary care, emergency medicine, pharmacy, nursing, and more, each of which encounters patients at different, often critical, junctions of their health care journey. Underscoring that suicide prevention is not an exclusive responsibility of mental/behavioral health professionals, but rather an overarching duty incumbent on all health care disciplines, is paramount.

A. Suicide Risk Identification

The significance of suicide risk identification has been underscored and largely institutionalized by accrediting bodies such as The Joint Commission (TJC) and the Commission on Accreditation of Rehabilitation Facilities (CARF).(34, 35) These entities have established frameworks wherein the identification and monitoring of suicide risk is

not merely a recommended practice but is embedded as an essential component of routine care. The standard of care acknowledges the dynamic nature of suicide risk and mental/behavioral health trajectories, which dictate that a systematic, ongoing approach to suicide risk identification be adopted as part of routine care. This practice is defined by proactive suicide risk identification, which leads to further assessment and implementation of individualized risk mitigation strategies.

a. Acute Warning Signs

Patients at risk for suicide might be identified via the presence of acute warning signs for suicide. Warning signs are specific to the patient (i.e., changes in thoughts, feelings, behaviors) that represent an acute increase in risk and often signal that the patient might engage in suicidal behavior in the immediate future (i.e., minutes to days). Patient specific warning signs can be assessed by asking patients to describe thoughts, feelings, and behaviors experienced before the most recent exacerbation of suicidal ideation or behavior. Module A contains additional guidance regarding how to follow up with a patient who presents with current warning signs.

See Sidebar 1 for examples of direct and indirect warning signs.

b. Suicide Risk Screening Using Validated Tools

Suicide risk screening represents one of the crucial steps by which patients at risk for suicide are identified, and it is an essential element of routine care for suicide prevention. Standardized suicide risk screening, using validated screening tools, facilitates a proactive approach to suicide prevention within health care settings. Accrediting bodies such as TJC and CARF mandate the implementation of suicide risk screening as a standard procedure for patients with mental/behavioral health needs, fostering an approach by which to identify suicide risk across health care systems.(34, 35)

See Recommendation 2 for additional information regarding screening tools.

c. Predictive Analytics

The availability of large health care datasets and advanced statistical computing enables the development of predictive models of suicide and suicide-related behavior. These approaches can improve classification accuracy over subjective clinical judgment or the reliance on single risk factor determinations.(36)

Suicide prediction models, in their current state, yield good overall classification accuracy (most patients will not die by suicide and most of them are correctly classified as such) but are poor at accurately predicting future suicide events (among those classified as *at risk*, current algorithms will be correct only about 1% of the time). The literature on this topic already suggests that this finding is consistent across the military, VA, and civilian health care systems and is directly related to, and limited by, the suicide mortality rate in the population of interest.(37)

The application of suicide prediction models is new, and the critical, ethical, and practical concerns are only starting to be addressed. Importantly, it is yet to be established what interventions should be provided to those who are classified as being at risk for suicide, especially if the majority of the cases being classified as at risk represent false positive identifications.(38) Clinical implementation of suicide prediction models must be well designed and highly intentional to avoid unintended consequences, including potential stigmatization of patients at risk for suicide, particularly if patients are labeled based on a predictive model. For example, among patients in the military, suicide prediction models might raise concerns about how the information will be used and the potential impact it might have on a patient's military career and social network. In other cases, machine learning and other predictive analytics methods can amplify existing biases within data sets, which can lead to discrimination based on variables such as race, age, or socioeconomic status (SES).

Most suicide prediction models have yet to be tested within a clinical context to evaluate the effects on the primary outcome of suicide prevention or the secondary outcomes of care processes, patient outcomes other than suicide death, and health care costs.

An exception, although yet untested via an RCT, is VHA's Recovery Engagement and Coordination for Health-Veterans Enhanced Treatment (REACH VET) program, which was implemented as standard care in the VHA in 2017.(39) Implementation of REACH VET includes outreach and reassessment of care for newly identified patients. Clinical judgment and patient input are incorporated into clinical decision making regarding changes to care. In a historical comparison, REACH VET was not associated with a reduction in the suicide mortality rate among patients identified as at high risk for suicide. It was associated with greater treatment engagement, new safety plan documentation, and fewer mental/behavioral health admissions, ED visits, and suicide attempts.(40)

B.   Suicide Risk Assessment and Risk Stratification

Once suicide risk is identified by the above described means, a suicide risk assessment should be conducted. The Joint Commission requires that suicide risk assessment includes evaluation of the following areas: suicidal ideation, plan, intent, suicidal or self-harm behaviors, risk factors, and protective factors. Documentation of risk stratification and a risk mitigation plan is also required.(34) In addition to these key aspects, suicide risk assessment should yield a person-specific conceptualization of what is driving suicide risk as well as what factors are mitigating risk (i.e., protective factors, which are characteristics associated with a lower probability of negative health outcomes).

a. Suicide Risk Stratification

As noted in Recommendation 4 and required by TJC, suicide risk stratification is considered to be a component of routine care for patients identified as at risk.(34) The Algorithm, Sidebar 3a, and Sidebar 3b provide guidance regarding how to stratify risk by

both temporality and severity according to Therapeutic Risk Management Risk Stratification. Risk stratification serves as a lens through which health care professionals can view and comprehend the dynamic and varied severity of suicide risk as well as establishing a standardized pathway that guides clinical decision making and intervention planning. Distinguishing among high, intermediate, and low (severity) risk categories for both acute and chronic risk (temporality) can help health care providers tailor interventions and allocate resources in a manner consistent with the patient's immediate and long-term needs. The tiered approach offered in the Algorithm, Sidebar 3a, and Sidebar 3b ensures that the spectrum of care provided enables health care professionals to navigate the dynamic nature of suicide risk proactively.

C. Suicide Risk Management

Routine care for suicide prevention encompasses identification and assessment of risk but is also defined by the implementation of structured, evidence-based interventions and persistent support mechanisms by which risk is mitigated. According to accrediting bodies such as TJC and the CARF, suicide risk management is an essential component of routine care for suicide prevention.(34, 35)

Treatment should directly target suicidal thoughts and behaviors.(41) Additionally, specific treatment decisions should be evidence informed and driven by shared decision making principles.(42) See Recommendations 5–19 for additional information regarding risk management strategies.

a. Safety Planning and Crisis Response Planning

The Safety Planning Intervention (SPI) and Crisis Response Planning (CRP) both involve the development of step-by-step instructions to use for patients before or during a suicidal crisis. See Table 4 for comparison of the components of CRP versus SPI. Information regarding SPI, rather than CRP, is included in the Algorithm and associated sidebars because SPI is consistent with the standard of care in both VA and DoD. Additionally, SPI has long been recognized as an important aspect of routine care for suicide prevention by accrediting organizations such as the TJC and CARF.(34, 35) Providers are encouraged to conduct SPI with any patient they believe would benefit from this risk mitigation strategy, particularly with patients who are at intermediate or high, acute, or chronic suicide risk based on Therapeutic Risk Management Risk Stratification (see Sidebar 3a and Sidebar 3b).

Table 4. Components of CRP versus SPI (43, 44)

Crisis Response Planning	Safety Planning Intervention
Semi-structured interview of recent suicidal ideation and chronic history of suicide attempts	Conducting a semi-structured interview of a recent suicidal crisis
Unstructured conversation about recent stressors and current complaints using supportive listening techniques	Recognizing warning signs of an impending suicidal crisis

Crisis Response Planning	Safety Planning Intervention
Collaborative identification of clear signs of crisis (behavioral, cognitive, affective, or physical)	Recognizing how an increase and a decrease in suicidal risk provides an opportunity to engage in coping strategies
Self-management skill identification, including things that patients can do on their own to distract themselves or feel less stressed	Employing internal coping strategies—without contacting another person—for distraction from suicidal thoughts
Collaborative identification of social support, including friends, caregivers, and family members who have helped in the past and whom they would feel comfortable contacting in crisis	Using social contacts and social settings as a means of distraction from suicidal thoughts
Review of crisis resources, including medical providers, other professionals, and the suicide prevention lifeline (988)	Contacting mental/behavioral health professionals or agencies, including crisis intervention services (e.g., the Veteran/Military Crisis Line: 988)
Referral to treatment, including follow-up appointments and other referrals, as needed	Limiting access to lethal means: Consider prescribing naloxone for patients at risk for opioid overdose (see VA/DoD Use of Opioids in the Management of Chronic Pain CPG)[e]

Abbreviations: CPG: clinical practice guideline; DoD: Department of Defense; VA: Department of Veterans Affairs

b. Lethal Means Safety

Lethal means safety (LMS) is an intentional, collaborative, and voluntary practice to reduce one's suicide risk by limiting access to lethal means (i.e., objects that can be used to inflict self-directed violence [SDV]). Increasing the time and distance between someone with suicidal intent and lethal means can reduce suicide risk.([45](#)) Lethal means safety is considered part of routine care for patients identified as at risk for suicide. Providers are encouraged to discuss LMS with any patient they believe would benefit from this risk mitigation strategy, particularly with patients who are at intermediate or high, acute, or chronic suicide risk (post-psychiatric hospitalization) based on Therapeutic Risk Management Risk Stratification (see Sidebar 3a and Sidebar 3b).

c. Post-Acute Care

The period following acute care intervention and subsequent discharge is a timeframe in which patients are at elevated risk for suicide.([46](#)) Structured post-acute care that provides ongoing support during this vulnerable period of transition is an important aspect of routine care and suicide risk management. Consistent post-discharge engagement offers a safety net of support but also ensures that emerging crises or hurdles in the recovery trajectory are swiftly identified and addressed.

See Recommendation 16 and Recommendation 17 for additional information regarding specific post-acute care interventions.

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[e] See the 2022 VA/DoD Clinical Practice Guideline for the Use of Opioids in the Management of Chronic Pain. Available at: https://www.healthquality.va.gov/

d. Care Management

Care management plays an important role in suicide prevention because it can directly impact factors (e.g., social determinants of health) that increase suicide risk (e.g., finances, housing). A multifaceted process involving a wide range of activities, care management often spans many disciplines, including nursing, social work, case management, and other professions involved in a care management service. The care management process frequently involves identifying and assessing patient needs; developing plans; providing needed services; monitoring and evaluating provided services; and advocating for the comprehensive needs of patients, their families, and caregivers.

D.   Postvention

Suicide postvention involves the provision of immediate and ongoing support to individuals impacted by a suicide loss. Being exposed to the death of a loved one, friend, or coworker by suicide increases the risk of suicide and other negative mental/behavioral health sequelae in survivors.(47) As such, postvention is an additional suicide prevention strategy. Losing a patient to suicide can impact one's professional identity, relationships with coworkers, and clinical work.(48) The 2012 National Strategy for Suicide Prevention states that "helping those who have been bereaved by suicide is a direct form of suicide prevention with a population known to be at risk."(49)

A 2019 SR identified 11 research studies related to the effectiveness of interventions for people bereaved by suicide.(50) Although no studies reported on suicidal behavior as an outcome, three reported on suicidal ideation. One of these demonstrated a statistically significant reduction in suicidal ideation among participants who completed complicated grief therapy. Additional studies demonstrated positive impacts on grief and psychosocial outcomes. These interventions "include supportive, therapeutic, and education approaches, involve the social environment of the bereaved, and comprise a series of sessions led by trained facilitators."(50)

Multiple resources exist to support individuals who have lost a Service member or Veteran to suicide. Any reference to or inclusion of external resources does not constitute an endorsement by VA, DoD, or the United States. Exemplars include the following.

- The Tragedy Assistance Program for Survivors (TAPS) is a nonprofit organization providing comprehensive resources for individuals grieving the loss of a military Service member or Veteran.

- VA's Uniting for Suicide Postvention program provides tools and support to suicide loss survivors.(51)

- Consultation through VA's Suicide Risk Management Consultation Program[f] is also available to individuals directly impacted by Veteran suicide loss as well as

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[f]   See the SRM program website for more information: https://www.mirecc.va.gov/visn19/consult/.

to those interested in developing postvention processes in their Veteran-serving organization.

E. Additional Steps for Management of Military Service Members

a. Command Consultation (Department of Defense)

Military commanders play a crucial role in building a mission-ready force by promoting the resilience and health of the Service members under their command. Command consultation is an important aspect of the treatment of mental/behavioral health conditions and is a relevant part of military treatment planning. Command involvement in the care of their Service members is always considered in the context of balancing responsibilities for their health and wellbeing and their mission's success.

Department of Defense Instructions (DoDI) provide a foundation for military health care providers regarding mental/behavioral evaluation and command interaction requirements to balance patient confidentiality against mission demands. For example, DoDI 6490.08, "Command Notification Requirements to Dispel Stigma in Providing Mental Health Care to Service Members," and DoDI 6490.04, "Mental Health Evaluations of Members of the Military Services," establish policy for health care providers for determining command notification and referral, evaluation, treatment, and medical and command management of Service members who might request or require assessment for mental/behavioral health concerns, respectively.(52, 53) Commanders need to know certain information to make decisions related to military operational and risk management. In disclosure to commands, providers disclose a minimum amount of information to the commander about the Service member in accordance with policy— typically limited to sharing only enough information with the commander to satisfy the purpose of the disclosure.

Providers delivering care in DoD are encouraged to always consider potential command involvement when developing plans for intervention and support for the Service member. Interaction between the provider and the commander should aim to be cooperative in a manner that protects confidentiality, with the intent of building partnerships, enabling and encouraging members to feel comfortable in obtaining care while furthering the mission's successful accomplishment. When requested by Service members or providers, commanders are strongly encouraged to share with treating providers information that they believe might be pertinent to the health and welfare of their Service members or mission accomplishment. Regardless, interaction between the provider and the commander should occur in a manner that protects confidentiality.

Health care providers can notify commanders with or without a Service member's permission in the case of exigent circumstances, which are those where the need to prevent serious harm to an individual or essential military function clearly outweighs the need for confidentiality of information obtained by a health care provider. Exigent circumstances are defined as harm to self, harm to others, harm to mission, inpatient

care, acute medical conditions interfering with duty, problematic substance abuse treatment, command-directed mental/behavioral health evaluations, treatment of personnel in sensitive positions, or circumstances when execution of the military mission outweighs the interest served by avoiding notification. Voluntary care for SUD itself does not require command notification. For policy related to commander notification of patient disclosures related to harm by others, providers should consult with policy reporting and notification requirements[g] and, when necessary, also follow forensic health care response policy.

X. Limitations to Clinical Practice Guideline Review of Suicide Prevention Interventions and Strategies to Advance the State of the Science

Two of the criteria used in GRADE in evaluating the evidence base are risk of bias and indirectness. Therefore, when considering KQs related to interventions (KQ5–KQ12[h]), the Work Group decided a priori to focus on evidence of the efficacy of interventions from RCTs. This study design, when done well and with a large sample size, is expected to demonstrate the effectiveness of an intervention and have a lower risk of bias than other study designs. The Work Group also determined that the most direct outcome for suicide prevention interventions is suicide mortality; non-fatal suicide attempt is a close surrogate.

This dual emphasis on suicide death as the primary outcome of interest and the use of RCTs to evaluate the quality of existing evidence has led to challenges to the traditional CPG evaluation process. Suicide death is a low frequency event even in active duty military and Veteran populations,([54], [55]) and, therefore, RCTs will generally be underpowered for detecting the efficacy of reducing suicide death. To date, there is a lack of high-quality RCTs with suicide mortality as the primary outcome. Consequently, the recommendations for suicide prevention interventions are based on the best available evidence, and the strength of the recommendations reflects the limits of the evidence base.

The Work Group acknowledges the difficulties in conducting RCTs with suicide mortality as an outcome. Given the low event rate, sample size, and follow-up, requirements might be prohibitive unless system-wide approaches are used to address this challenge. Large health care systems like DoD and VA could develop the research infrastructure to advance the field of suicide prevention research through the establishment of a suicide prevention trials network that would conduct large trials that are sufficiently powered.

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[g]   See the Sexual Assault Prevention and Response Office and Family Advocacy Office policy: https://www.sapr.mil/.
[h]   KQ 12 included large observational cohort studies because there was a lack of evidence from RCTs alone.

It is also acknowledged that preventive interventions might not be isolated to clinical encounters. Instead, they might involve programmatic activities within a larger health care environment. Cluster-randomized trials are one option to improve the evidence base. The VA and DoD health care systems could again assist in addressing this confound by using facilities, states, or regions as units for randomization for implementation intervention trials. This approach also facilitates the use of pragmatic trials where participant inclusion is broader than in traditional efficacy trials to enable the analysis of effectiveness and the consideration of heterogeneity of effects. In addition, for some suicide prevention interventions (e.g., contacting the Veterans Crisis line), death by suicide might be more of a distal outcome. In such cases, outcomes such as treatment engagement might be more proximal and appropriate and should be considered primary outcomes.

Evidence from large, controlled intervention studies (not randomized) or longitudinal observational studies can also be used to draw causal inferences. These studies are considered at higher risk of bias, so it is incumbent on research teams to attend closely to threats to internal validity.(56) Specifically, the presence of a contemporaneous comparison group to mitigate history and a thoughtful assessment of and correction for selection (fundamental differences between those exposed and those unexposed to the intervention) are crucial. Statistical techniques such as propensity scores can be useful here.(57)

A strategy that retains the use of experimental evidence is individual participant-level data meta-analysis (MA). The data repositories necessary for this data retention are based on Findable, Accessible, Interoperable, Reusable (FAIR),[i] which relies on data methods still developing. Funding agencies such as DoD and VA could advance this effort both through the establishment of participant-level repositories and through the requirement of participation as a condition of funding.

Finally, the advancement of suicide risk models use of predictive analytics and machine learning could advance interventional research through improved identification of those at the highest level of suicide risk for inclusion in clinical trials. Improved risk identification could address limitations related to low event rates. Through their elaborate electronic administrative and health records, VA and DoD are well-positioned to advance this effort.

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[i] See the FAIR website for more information: https://datascience.nih.gov/data-ecosystem.

XI. Recommendations

The evidence-based clinical practice recommendations listed in Table 5 were developed using a systematic approach considering four domains as per the GRADE approach (see Summary of Guideline Development Methodology). These domains include confidence in the quality of the evidence, balance of desirable and undesirable outcomes (i.e., benefits and harms), patient values and preferences, and other implications (e.g., resource use, equity, acceptability).

Table 5. Evidence-Based Clinical Practice Recommendations with Strength and Category

Topic	Sub-topic	#	Recommendation	Strength[a]	Category[b]
Screening and Assessment	Screening	1.	There is insufficient evidence to recommend for or against suicide risk screening programs to reduce the risk of suicide or suicide attempts.	Neither for nor against	Reviewed, New-added
		2.	When selecting a screening tool, we suggest the use of a validated measure to identify patients at risk for suicide-related behavior. Tools with evidence and support of use, by population, include the following. • General population ♦ Columbia Suicide Severity Rating Scale Screener ♦ Suicide Cognition Scale – Revised ♦ Patient Health Questionnaire-9 • Populations at increased risk ♦ Beck Suicide Intent Scale/Beck Scale for Suicidal Ideation ♦ Columbia Suicide Severity Rating Scale Screener	Weak for	Reviewed, New-replaced
	Assessment	3.	When performing a suicide risk assessment, we suggest including, but not limited to, factors (see Table 6) within the following domains. • Self-directed violence, thoughts, and behaviors • Current psychiatric conditions and current or past mental/behavioral health treatment • Psychiatric symptoms • Social determinants of health and adverse life events • Availability of lethal means • Physical health conditions • Demographic characteristics	Weak for	Reviewed, Amended
		4.	While risk stratification is an expected component of routine care, there is insufficient evidence to recommend for or against the use of a specific tool or method to determine the level of suicide risk.	Neither for nor against	Reviewed, New-added

Topic	Sub-topic	#	Recommendation	Strength[a]	Category[b]
Risk Management and Treatment	*Non-pharmacologic Interventions*	5.	We suggest cognitive behavioral therapy–based psychotherapy focused on suicide prevention to reduce the risk of suicide attempts in patients with a history of suicidal behavior within the past six months.	Weak for	Reviewed, New-replaced
		6.	We suggest offering cognitive behavioral therapy (including problem solving–based psychotherapies) focused on suicide prevention to reduce suicidal ideation for patients with a history of self-directed violence.	Weak for	Reviewed, New-replaced
		7.	There is insufficient evidence to recommend for or against completing a crisis response plan or safety planning intervention to reduce the risk of suicide attempts in patients with recent suicidal ideation, a lifetime history of suicide attempts, or both.	Neither for nor against	Reviewed, New-replaced
		8.	There is insufficient evidence to recommend for or against Collaborative Assessment and Management of Suicidality to reduce suicidal ideation.	Neither for nor against	Reviewed, New-added
		9.	There is insufficient evidence to recommend for or against offering dialectical behavior therapy to reduce suicidal ideation and the risk of suicide attempts or suicide.	Neither for nor against	Reviewed, New-replaced
		10.	There is insufficient evidence to recommend for or against peer-to-peer programs to reduce suicidal ideation.	Neither for nor against	Reviewed, New-added
	Pharmacologic and Other Somatic Treatments	11.	We suggest clozapine to reduce the risk of suicide attempts for patients with schizophrenia or schizoaffective disorder and either suicidal ideation or a history of suicide attempt(s).	Weak for	Reviewed, Amended
		12.	We suggest offering ketamine infusion as an adjunctive treatment for short-term reduction in suicidal ideation in patients with the presence of suicidal ideation and major depressive disorder.	Weak for	Reviewed, Not changed
		13.	There is insufficient evidence to recommend for or against ketamine infusions or esketamine to reduce the risk of suicide or suicide attempts.	Neither for nor against	Reviewed, New-added
		14.	There is insufficient evidence to recommend for or against lithium to reduce the risk of suicide or suicide attempts for patients with mood disorders.	Neither for nor against	Reviewed, New-replaced
		15.	There is insufficient evidence to recommend for or against repetitive transcranial magnetic stimulation to reduce the risk of suicide or suicide attempts.	Neither for nor against	Reviewed, New-added

Topic	Sub-topic	#	Recommendation	Strength[a]	Category[b]
Risk Management and Treatment (cont.)	Post-Acute Care	16.	We suggest sending patients periodic caring communications (e.g., postal mail, text messages), in addition to usual care, for 12 months following hospitalization related to suicide risk to reduce the risk of suicide attempts.	Weak for	Reviewed, New-replaced
		17.	There is insufficient evidence to recommend for or against offering brief contact interventions (e.g., telephonic interventions, crisis cards, World Health Organization Brief Intervention and Contact treatment modality) in addition to usual care following discharge from the emergency department to reduce the risk of suicide attempts.	Neither for nor against	Reviewed, New-replaced
	Technology-Based Modalities	18.	We suggest the use of self-guided digital interventions (app or web) that include, but are not limited to, cognitive behavioral–based therapeutic content for short-term reduction in suicidal ideation.	Weak for	Reviewed, New-replaced
		19.	There is insufficient evidence to recommend for or against the use of standalone or adjunctive technology-based tools (e.g., mobile and web apps, automated telephone-based) to reduce the risk of suicide attempts or suicide.	Neither for nor against	Reviewed, New-replaced
	Community-Based Interventions	20.	We suggest multi-component community interventions to reduce the risk of suicide. Common components include but are not limited to: training on mental/behavioral health topics and/or suicide risk factors; local networking and/or community facilitation; and providing mental/behavioral health and/or suicide prevention materials.	Weak for	Reviewed, New-replaced
		21.	We suggest reducing access to lethal means to reduce the risk of suicide by firearms, jumping, or medication overdose.	Weak for	Reviewed, New-replaced
		22.	There is insufficient evidence to recommend for or against the use of targeted messaging to at-risk populations to reduce suicidal ideation and improve help-seeking behavior.	Neither for nor against	Reviewed, New-added
		23.	There is insufficient evidence to recommend for or against standalone gatekeeper training to reduce the risk of suicide.	Neither for nor against	Reviewed, Amended
		24.	There is insufficient evidence to recommend for or against crisis lines to reduce suicidal ideation or the risk of suicide attempts or suicide.	Neither for nor against	Reviewed, New-added

[a] For additional information, see Determining Recommendation Strength and Direction.
[b] For additional information, see Recommendation Categorization.

A.   Screening and Assessment

a. Screening

Recommendation

1. There is insufficient evidence to recommend for or against suicide risk screening programs to reduce the risk of suicide or suicide attempts.
    (Neither for nor against | Reviewed, New-added)

Discussion

The Work Group reviewed the existing evidence concerning the potential benefits or risks associated with suicide risk screening programs.(58-66) Such programs can be defined as a systematic approach encompassing suicide risk screening, followed by a comprehensive assessment and the formulation of a risk management plan for patients identified as being at an elevated risk of suicide. Suicide risk screening programs are frequently part of routine care and are required by accrediting bodies. The critical outcomes of interest were suicide attempts and suicide deaths, although the Work Group also considered studies examining health care use outcomes.

A total of nine studies were identified that met the criteria for the systematic evidence review.(58-66) However, two of these studies did not specifically assess suicide risk screening programs; rather, they focused on investigating potential iatrogenic effects stemming from repeated suicide screenings.(59, 64) The results of these studies suggest that the screening component of suicide risk screening programs does not lead to an increase in suicide behavior, although limitations in sampling and design limited the confidence in the quality of evidence for this finding. Among the remaining seven studies, only one incorporated suicide attempts and deaths as outcome measures.(63) This specific study found that the implementation of universal screening, coupled with safety planning in the ED and follow-up telephone contacts for high-risk patients, was associated with a reduction in a composite outcome encompassing both suicide attempts and deaths. The confidence in the quality of evidence for this study, however, was very low because of its small sample, small effect size, and other methodological concerns.(63)

The remaining six studies examined health care use as the primary outcome.(58, 60-62, 65, 66) All studies had either low or very low quality of evidence. Three studies were limited in that they involved small samples from a single facility,(62, 65, 66) and one study involved a single pretrial detention facility in Germany.(61) Carter et al. (2020) investigated potential disparities in an enterprise-wide implementation of a VA suicide prevention program involving the use of patient-record flags.(60) Bahrani et al. (2022) found an association between a positive Columbia Suicide Severity Rating Scale (C-SSRS) screen and an increased likelihood of subsequent mental/behavioral health follow-up and treatment engagement. It did not address the effectiveness of the screening program overall.(58)

The Work Group considered several other negative implications of suicide risk screening programs, including questionable preferences of this practice, resource use (i.e., system burden, opportunity costs, and need for providers with time and expertise to perform evaluations and follow-up care), feasibility (i.e., requirement for trained staff to perform screening and follow-ups), acceptability (i.e., provider health care system burden), and possible iatrogenic effects. Note that the existing evidence leans against iatrogenic effects, but confidence in this finding remains very low to low, mainly because of the use of non-clinical student samples in relevant studies.(59, 64)

The Work Group systematically reviewed evidence related to this recommendation.(58-66) Therefore, this is a *Reviewed, New-added* recommendation. The Work Group's confidence in the quality of the evidence was very low. The body of evidence had some limitations, including small sample sizes and the use of observational and cross-sectional research designs.(58-66) The benefits of a suicide screening program in improving engagement with health services were balanced with the potential harms (e.g., increased cost, provider burden, iatrogenic effects of conducting repeated risk assessments). Patient values and preferences varied somewhat because some patients might not prefer suicide risk screening. Thus, the Work Group made the following recommendation: There is insufficient evidence to recommend for or against suicide risk screening programs to reduce the risk of suicide or suicide attempts. Nevertheless, and regardless of the existing evidence, the Work Group recognizes that suicide risk screening programs are currently an expected standard of care (see Routine Care for Suicide Prevention) mandated by accrediting bodies.

Recommendation

2. When selecting a screening tool, we suggest the use of a validated measure to identify patients at risk for suicide-related behavior. Tools with evidence and support of use, by population, include the following.
   - General population
     - Columbia Suicide Severity Rating Scale Screener
     - Suicide Cognition Scale – Revised
     - Patient Health Questionnaire-9
   - Populations at increased risk
     - Beck Suicide Intent Scale/Beck Scale for Suicidal Ideation
     - Columbia Suicide Severity Rating Scale Screener

   (Weak for | Reviewed, New-replaced)

Discussion

The Work Group focused on measures that were associated with death by suicide or suicide attempt after screening and that had at least low quality of evidence. The Work Group considered a positive likelihood ratio of 2.0 or greater as evidence of some benefit of identifying patients at higher risk. With the low base rate of death by suicide or

suicide attempt, a positive likelihood ratio of 2.0 or greater corresponds to approximately a doubling of risk, or more, among those identified.

For general populations seeking medical care, the C-SSRS screen (a yes response to either item on intensity of suicidal thoughts or a history of self-harm) demonstrated utility for detecting risk of death at three months.(67) The specificity of the measure was high, which resulted in a positive likelihood ratio estimate greater than 10.0, even though fewer than one-half of suicide deaths were correctly predicted. Another study of patients in an ED found positive likelihood ratio estimates greater than 10.0 for any positive response to the C-SSRS screener with respect to medically recorded suicide attempts within 30 days.(68) The Suicide Cognition Scale-Revised,(69) in a sample of military Service members attending primary care clinics who did not exhibit suicide risk at baseline, was associated with a more modest positive likelihood ratio of 2.3 at a cutoff point of two at three months. Finally, on the Patient Health Questionnaire-9, any response other than "none at all" to item 9 demonstrated utility for both suicide and suicide attempt in a sample of health system patients with a screening recorded at a primary care or mental/behavioral health encounter.(70) This study was part of the evidence base for the 2019 Suicide Risk CPG. All nine items of the measure were administered, so we cannot address administering the single ninth item in lieu of the full battery.

For patients at increased risk, defined as patients with a history of self-harm or suicide attempt or for those seeking mental/behavioral health services, the Beck Suicide Intent Scale and the C-SSRS screener had evidence of utility. An MA synthesized data from five studies of the Beck Suicide Intent Scale in populations with recent self-harm or suicide attempt at screening.(71) Overall, the positive likelihood ratio was 2.1. There were three individual studies with values exceeding 2.0: one with a 2.7 at up to 62 months using a cutoff point of 14 (72, 73); one with 4.9 at 3 months using a cutoff point of 21(74); and one with 2.6 at 12 months using a cutoff point of 19.(75) Two individual studies provided data on the Beck Scale for Suicide Ideation (BSSI) (76) and the C-SSRS screener.(77) The BSSI was associated with a positive likelihood ratio of 2.0 for a 3-month prediction of self-reported suicide attempt in a consolidated sample of active duty U.S. military personnel.(76) Scores of 3.0 or greater on the C-SSRS screener were associated with positive likelihood ratio estimates of 2.0 or greater for death predictions at 7 and 31 days after assessment in a sample of patients who sought services at a psychiatric emergency facility.(77) At one-year post-screening, scores of four or greater had positive likelihood ratio estimates of at least 2.0. The quality of evidence for this recommendation is low. The Work Group had concerns with selection bias, measurement bias for self-report outcomes, and imprecision. There will likely be more false-positive classifications than true-positive classifications because of the low risk of suicide or suicide attempt.

The Work Group reviewed several additional studies that covered the screening measures identified in the recommendation but were not used in making the

recommendation ([78-86](#)) because of a lack of a critical outcome measure, very low quality of evidence, or a positive likelihood ratio value below 2.0. Measures reviewed but not used in the recommendation include the Ask Suicide-Screening Questions;([78](#)) Brief Geriatric Suicide Ideation Scale;([79](#)) Brief Suicide Cognitions Scale;([80](#)) Computerized Adaptive Test Suicide Scale;([81](#)) Convergent Functional Information for Suicidality;([82](#)) Connected Mind Fast Check Electronic Screen;([83](#)) Modified SAD PERSONS Scale;([84](#)) Suicide Crisis Inventory;([85](#)) and Suicide Crisis Syndrome Criteria plus Therapist Response Questionnaire Suicide Form.([86](#))

There is some variation in patient preferences regarding screening. The patient focus group noted screening fatigue as a concern. Further, the Work Group considered resource use, opportunity costs, and the anticipated system burden of high false-positive rates.

The Work Group systematically reviewed evidence related to this recommendation ([68](#), [69](#), [71](#), [76](#), [77](#)) and considered the assessment of the evidence put forth in the 2019 Suicide Risk CPG.([70](#)) Therefore, this is a *Reviewed, New-replaced* recommendation. The Work Group's confidence in the quality of the evidence was low. The body of evidence had some limitations, including imprecision and concerns about risk of bias.([68-71](#), [76](#), [77](#)) The benefits of using these measures if engaged in screening slightly outweighed the potential harm of risk misclassification. Patient values and preferences varied somewhat because of concerns over screening fatigue. Thus, the Work Group made the following recommendation: When selecting a screening tool, we suggest the use of a validated measure to identify patients at risk for suicide-related behavior. Tools with evidence and support of use, by population, include the following.

- General population
    - Columbia Suicide Severity Rating Scale Screener
    - Suicide Cognition Scale – Revised
    - Patient Health Questionnaire-9
- Populations at increased risk
    - Beck Suicide Intent Scale/Beck Scale for Suicidal Ideation
    - Columbia Suicide Severity Rating Scale Screener

b. Assessment

Recommendation

3. When performing a suicide risk assessment, we suggest including, but not limited to, factors (see Table 6) within the following domains.
   - Self-directed violence, thoughts, and behaviors
   - Current psychiatric conditions and current or past mental/behavioral health treatment
   - Psychiatric symptoms
   - Social determinants of health and adverse life events
   - Availability of lethal means
   - Physical health conditions
   - Demographic characteristics

   (Weak for | Reviewed, Amended)

Discussion

The goal of suicide risk assessment is to help providers determine a patient's risk of suicide at a given point in time. Although suicide risk assessments have poor predictive value in identifying those at risk of dying by suicide, they can help identify factors that are contributing to a patient's risk, which can facilitate treatment planning. Evaluation of risk factors is a crucial component of a suicide risk assessment. Several factors have been associated with increased risk for suicide; therefore, they are important to consider when performing a suicide risk assessment. These factors are organized into the following domains: SDV thoughts or behaviors; current psychiatric conditions and current or past mental/behavioral health treatment; psychiatric symptoms; social determinants of health and adverse life events; availability of lethal means; physical conditions; and demographic characteristics. The Work Group identified evidence of risk factors associated with suicide risk; but the evidence did not examine evidence of the effect of including or excluding any specific risk factor in an assessment on suicide risk. Specific factors to consider within each of these domains are listed in Table 6.

Table 6. Suicide Risk Factors

Factor Category	List of Factors to Consider	
Self-directed violence related	• Current suicidal ideation • Past or present suicidal intent • Prior suicide attempt or attempts	• Preparatory behavior or behaviors • Non-suicidal SDV behavior or behaviors
Current psychiatric conditions and current or past mental/behavioral health treatment	• Mood disorders • SUDs (including OUD) • PTSD (particularly when comorbid with depressive disorder) • Panic disorder	• Psychotic disorders • Personality disorders (particularly BPD) • Eating disorders • History of psychiatric hospitalization

Factor Category	List of Factors to Consider	
Psychiatric symptoms	• Hopelessness • Depressed mood • Negative attributional style • Rumination • Agitation • Anxiety, panic, or both	• Insomnia • Problem-solving difficulties • Impulsivity • Aggression, hostility, or both • Social withdrawal
Social determinants of health and adverse life events	• Barriers to care • Food insecurity • History of abuse • Early separation from parents • Exposure to violence • Living arrangements (living alone, especially for men)	• Social Isolation • Risk of losing stable housing or homelessness • Legal problems • Job loss and financial problems • Interpersonal conflict • Exposure to suicide
Availability of lethal means	• Availability of lethal means, especially firearms	
Physical health conditions	• Any cancer diagnosis (particularly patients with intermediate to poor prognosis) • Respiratory illnesses (COPD, emphysema) • Neurological disorders (stroke, epilepsy)	• Neurodegenerative Disorders (Alzheimer's disease, Parkinson's disease, Huntington's disease, ALS, multiple sclerosis) • TBI (moderate and severe)
Demographic Characteristics	• Gay, lesbian, or bisexual sexual orientation • Marital status (divorced, separated, or single)	• Lower SES • Unemployment • Years of education*

* Years of education had a protective effect on suicide risk.

Abbreviations: ALS: amyotrophic lateral sclerosis; BPD: borderline personality disorder; COPD: chronic obstructive pulmonary disease; OUD: opioid use disorder; PTSD: posttraumatic stress disorder; SDV: self-directed violence; SES: socioeconomic status; SUD: substance use disorder; TBI: traumatic brain injury

Evidence from an SR found that SDV thoughts and behaviors (i.e., suicidal ideation, suicidal intent, history of suicide attempt, history of non-suicidal self-injury) and history of psychiatric hospitalization are associated with increased risk of suicide attempts, death, or both.(87) Findings from multiple other studies, conducted in military and Veteran populations, are consistent with results from this review.(88, 89)

Several studies conducted within the general population, as well as military and Veteran populations, have demonstrated the association between various psychiatric conditions and suicide.(87, 89-91) Favril et al. (2022) found strong associations for any mental disorder and suicide (odds ratio [OR]: 13.1; 95% CI: 9.9–17.4). Depression had the strongest association with suicide (OR: 11.0; 95% CI: 7.3–16.5), followed by schizophrenia spectrum disorder (OR: 7.8; 95% CI: 4.5–3.5) and bipolar disorder.(92)

Personality disorders were also among the strongest risk factors for suicide and suicide attempt.(87, 92) For suicide death, odd ratios ranged from 3.4 (95% CI: 2.0–6.1) for antisocial personality disorder to 9.0 (95% CI: 5.6–14.4) for BPD.(92) In addition, evidence from two longitudinal cohort trials suggested that a history of mental/behavioral health disorders, namely mood disorders, alcohol use disorders, panic disorder, and PTSD, particularly with comorbid depression, were significant risk factors for a suicide attempt among Veterans who served in support of Operation Enduring Freedom and Operation Iraqi Freedom.(89, 91) Another prospective cohort study of Veterans who received services through the VHA showed that the suicide mortality rate of those with a SUD was 2.3–4.7 times higher than those without a SUD.(90) Hazard ratios were highest for opioid use disorder (OUD), amphetamine use disorder, and sedative, hypnotic, and anxiolytic use disorder.(90) Associations between OUD and suicide remained significant in women, even after adjusting for comorbid psychiatric diagnoses.(90) Finally, evidence from two MAs suggests that the suicide mortality rate of patients with psychotic disorders and symptoms was up to 2.0 times higher than those without psychosis.(93, 94)

With respect to psychiatric symptoms, Glenn et al. (2018) considered factors that fell within one of five of the National Institute of Mental Health's Research Domain Criteria (rDoC).(95) The rDoC provides a framework that shifts the focus of suicide research to lesser-studied predictors that emphasize transdiagnostic dimensions. This review included 134 studies that covered 460 factors representing the five rDoC domains. Symptoms most strongly associated with risk of suicide attempt or death included those that fell in the arousal and regulatory systems domain (e.g., insomnia); the cognitive systems domain (e.g., impulsivity, problem-solving difficulties); the negative valence systems domain subgroups of threat (e.g., anxiety, panic, agitation); loss (e.g., depressed mood, hopelessness, rumination, negative attributional style); frustrative non-reward (e.g., aggression, hostility); and the systems for social processes domain affiliation and attachment subgroup (e.g., social withdrawal).(95)

An emerging body of evidence has also demonstrated an association between physical conditions and suicide. Overall, having any chronic physical illness has been shown to increase risk of suicide death.(92, 96) With respect to specific conditions, evidence from two SRs and one large Veteran cohort study found that any cancer diagnosis significantly increased risk for suicide death.(96-98) Respiratory illnesses (e.g., emphysema, chronic obstructive pulmonary disease [COPD]) were also associated with increased risk of suicide death.(96, 99, 100) Neurological disorders, including acquired injuries such as stroke and traumatic brain injury (TBI) as well as neurodegenerative diseases (e.g., Huntington's disease, Parkinson's disease, Alzheimer's disease, amyotrophic lateral sclerosis), were also strongly associated with risk of suicide attempt (101, 102) or death.(103)

Findings from one SR and two large cohort studies, one of which was conducted in a Veteran population, also revealed significant associations between various social determinants of health and suicide death, including, but not limited to, barriers to care: housing instability and homelessness, exposure to abuse and violence, interpersonal conflict, financial and legal problems.(92, 104, 105) Healthy People 2030 defines social determinants of health as the "conditions in the environment where people are born, live, learn, work, play, worship and age that affect a wide range of health functioning, and QoL outcomes and risks."(106) Social determinants in addition to adverse life disruptions are important to include in a risk assessment because these factors can highlight specific life circumstances that might increase a patient's acute risk for suicidal behavior.

Availability of lethal means, in particular firearms and medication, have been associated with increased risk of suicide death. Swanson et al. (2023) found that divestment of firearms (i.e., ending firearm ownership) among owners of a single firearm, and no reacquisition of a firearm, reduced firearm suicide risk by 50% or more.(107) In a case-control study of soldiers who died by suicide compared with those with suicidal ideation, those who died by suicide were significantly more likely to own one or more handguns, store a gun loaded with ammunition at home, and carry a personal gun in public. The combination of these three factors was associated with a threefold increase in the odds of suicide.(108) With respect to medication, studies have shown a decrease in suicide deaths following institution of legislation restricting pack sizes of paracetamol.(109-111) Similarly, installation of barrier devices has been shown to decrease suicide by jumping.(112)

Lastly, several demographic factors, such as marital status (i.e., divorced and separated), unemployment, sexual minority orientation, and lower SES have also been associated with an increased risk of suicide death, while greater educational attainment has been associated with reduced risk of suicide attempts.(92, 96, 105, 113, 114). With respect to sexual orientation, a recent study showed that the suicide mortality rate among sexual minority Veterans, defined as those whose sexual orientation was gay, lesbian, or bisexual, was significantly higher than the general Veteran population.(114) Although not covered in the systematic evidence review, data from surveillance studies suggest that the following demographics might also be important to consider given higher rates of suicide in these groups: male sex, Veteran status, and White and Native American race.(54, 115)

Suicide risk is related to a complex interplay of factors, including risk and protective factors and other unique individual circumstances. Although the items listed in Table 6 are some of the strongest predictive factors, they were drawn largely from epidemiological studies, which look at patterns and trends at a population level. Some of these factors might be inapplicable to individual patients and their presenting circumstances. Thus, providers are also encouraged to identify other modifiable and non-modifiable factors that might be relevant to the person being evaluated

(e.g., transition of care, effective coping skills) to provide a more accurate assessment of a patient's overall risk (see Routine Care for Suicide Prevention).

Patient preferences for disclosing information pertaining to risk factors might vary because some patients might be more willing to disclose this information, although others might find doing so intrusive or burdensome. Examining a broad range of risk factors can be time consuming and might require specialized training. However, the benefits of understanding the unique factors that might increase a patient's risk of suicide outweigh these harms.

The Work Group systematically reviewed evidence related to this recommendation (92-94, 96-105, 107-114) and considered the assessment of the evidence put forth in the 2019 Suicide Risk CPG.(87-91, 95) Therefore, this is a Reviewed, Amended recommendation. The Work Group's confidence in the quality of the evidence was low. The body of evidence had some limitations, including a small sample size for some risk factors and not adjusting for confounders in some studies.(87-105, 107-114) The potential benefits of including these risk factors when performing a suicide risk assessment (e.g., informing tailored interventions, decreasing unnecessary variability in suicide risk assessment) slightly outweighed the potential harms of patient burden and emotional discomfort. Patient values and preferences varied somewhat because some patients might not want to disclose specific information related to their suicide risk. Thus, the Work Group made the following recommendation: When performing a suicide risk assessment, we suggest including, but not limited to, factors (see Table 6) within the following domains.

- Self-directed violence, thoughts, and behaviors
- Current psychiatric conditions and current or past mental/behavioral health treatment
- Psychiatric symptoms
- Social determinants of health and adverse life events
- Availability of lethal means
- Physical health conditions
- Demographic characteristics

Recommendation

4. While suicide risk stratification is an expected component of routine care, there is insufficient evidence to recommend for or against the use of a specific tool or method to determine the level of suicide risk.
   (Neither for nor against | Reviewed, New-added)

Discussion

No studies were identified that compared the effectiveness of suicide risk level stratification across different types of tools or methods. The Work Group identified only one relevant study that compared structured clinical assessment based on the C-SSRS to a machine learning model (Vanderbilt Suicide Attempt and Ideation Likelihood [VSAIL]) and their combined ability to predict suicide attempts.([68](#)) Using the presence of suicidal intent in the C-SSRS, with or without a plan, as the threshold for higher risk, only one attempt would occur among every 26–29 patients classified as being at risk. Although not directly compared statistically, the positive predictive value at high levels of predicted risk from VSAIL was lower than for the C-SSRS. The ensemble approach had similar positive predictive values to the C-SSRS alone. The quality of evidence was rated very low for study quality, indirectness, and imprecision. There was no direct evidence of harm associated with the assessment modalities.

There is some variation in patient preferences regarding the use of screening tools or methods to determine suicide risk. The patient focus group noted that an abundance of assessment can lead to patient fatigue. Some patients might be concerned about privacy if artificial intelligence (AI) or machine learning methods are used. Although the benefits of improved suicide risk classification are believed to be balanced with the potential harms of misclassification, concerns arise about potentially lost resource use for risk assessment specific to the high false-positive rate in a resource-constrained environment. The Work Group also identified feasibility concerns relative to the implementation of any method or tool into current clinic business practices in both systems of care, related to cost, systems maintenance, and technology infrastructure. Additionally, there are concerns about equity in terms of any predictive modeling strategy and its validity across all demographic groups.

The Work Group systematically reviewed evidence related to this recommendation.([68](#)) Therefore, this is a *Reviewed, New-added* recommendation. The Work Group's confidence in the quality of the evidence was very low. The body of evidence had some limitations, including a limited number of studies available for review, a limited number of assessment approaches evaluated, indirect comparisons, and imprecision attributable to a low event rate.([68](#)) The benefits of risk stratification were balanced with the potential harm of misclassification. Patient values and preferences varied somewhat because of assessment fatigue and privacy concerns. Providers are most likely to use comprehensive clinical assessment skills and tools and their clinical judgment based on the expressed needs of their specific patient to determine level of suicide risk. They should use validated instruments that meet the requirements of the clinical situation. Thus, the Work Group made the following recommendation: While suicide risk stratification is an expected component of routine care, there is insufficient evidence to recommend for or against the use of a specific tool or method to determine the level of suicide risk.

B. Risk Management and Treatment

c. Non-pharmacologic Interventions

Recommendation

5. We suggest cognitive behavioral therapy–based psychotherapy focused on suicide prevention to reduce the risk of suicide attempts in patients with a history of suicidal behavior within the past six months.
    (Weak for | Reviewed, New-replaced)

Discussion

Cognitive behavioral therapy (CBT) teaches patients to identify and modify problematic thinking and behavioral patterns with the expectation that this approach will positively influence their emotional experience. The majority of studies reviewed for this recommendation used a psychotherapy intervention grounded in CBT to explicitly address suicide risk,(116-121) typically by having patients identify proximal thoughts, images, and core beliefs activated before suicidal ideation or an attempt. Cognitive and behavioral strategies are then usually applied to address the identified thoughts and beliefs. CBT for Suicide Prevention includes treatment components such as a comprehensive suicide risk assessment, a patient's account of their most recent suicide attempt, a form of safety planning or CRP, a discussion of the patient's access to and storage of lethal means, problem-solving or coping skills or both focused on decreasing suicide risk (e.g., emotion regulation, strategies for healthy relationships), and post-treatment communications (e.g., booster therapy sessions via phone, caring contacts). These treatments emphasize the use of therapeutic techniques that address the patient's suicide risk drivers (i.e., what is causing the patient to feel suicidal) and triggers (i.e., specific events that precipitate suicidal crises) to decrease suicide risk.

The strongest evidence for this recommendation comes from an SR that examined the effect of CBT-based psychotherapies on suicide reattempts.(120) Ten studies (n=1,502) included in the SR addressed reducing the risk of suicide attempt as part of the intervention (e.g., Cognitive Therapy for Suicide Prevention, Cognitive Behavioral Suicide Prevention, Post Admission Cognitive Therapy). Several of the studies included in the SR served as the basis for the 2019 recommendation, such as Brown et al. (2005) and Rudd et al. (2015), which found that patients who received a CBT intervention for suicide prevention were 50–60% less likely to report a repeat suicide attempt in the follow-up attempt.(122, 123) When compared with treatment as usual (TAU), CBT-based psychotherapies were associated with reduced risk of suicide attempt at treatment end. Although the SR suggested sustained therapeutic benefit at more distant follow-up (12–24 months), the Work Group was concerned by notable attrition by that time and, thus, did not consider it appropriate to assert in this CPG.

In addition to psychotherapies identified as CBT-based, the Work Group reviewed the evidence for all psychotherapies with respect to both critical outcomes of suicide death

and suicide attempt. Psychotherapeutic approaches reviewed included acceptance and commitment therapy, Attempted Suicide Short Intervention Program, DBT, mentalization-based treatment, mindfulness-based interventions, motivational interviewing, problem-solving therapy (PST), and psychodynamic therapies. However, the Work Group did not find consistent evidence with respect to the outcomes of suicide death or suicide attempt for any of the psychotherapies listed above aside from those identified as CBT based. There was insufficient evidence to recommend for or against CBT-based psychotherapy to prevent suicide death.

Consistent with the 2019 Suicide Risk CPG,[j] the Work Group determined that provider and patient preferences vary regarding this type of treatment. Although many patients and providers appreciate the structured nature of CBT and generally find it acceptable, some patients find the homework challenging and burdensome, and some decline to participate. CBT is typically time limited, which is appealing to many patients, but some patients desire alternatives to CBT-based psychotherapies. Many mental/behavioral health providers in VA and DoD health care settings are trained in CBT-based psychotherapies but would likely need additional training in how to effectively implement a CBT intervention specifically focused on suicide prevention.

The Work Group systematically reviewed evidence related to this recommendation (116-121) and considered the assessment of the evidence put forth in the 2019 Suicide Risk CPG.(122, 123) Therefore, this is a *Reviewed, New-replaced* recommendation. The Work Group's confidence in the quality of the evidence was low. The body of evidence had some limitations, including inconsistency in how psychotherapies were operationalized and variation in identification of intervention key components.(116-123) The benefits of implementing CBT-based psychotherapies to reduce the risk of suicide attempts outweighed the potential harm of adverse events, which were not identified in the evidence base. The potential harm of implementing CBT-based psychotherapy as opposed to a more effective intervention for a particular patient was also considered. Patient values and preferences varied somewhat; however, most patients typically report high satisfaction with CBT focused on suicide prevention. Thus, the Work Group made the following recommendation: We suggest cognitive behavioral therapy–based psychotherapy focused on suicide prevention to reduce the risk of suicide attempts in patients with a history of suicidal behavior within the past six months.

Recommendation

6. We suggest offering cognitive behavioral therapy (including problem solving–based psychotherapies) focused on suicide prevention to reduce suicidal ideation for patients with a history of self-directed violence.
   (Weak for | Reviewed, New-replaced)

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[j] See the 2019 VA/DoD Clinical Practice Guideline for the Assessment and Management of Patients at Risk for Suicide. Available at: https://www.healthquality.va.gov/

Discussion

Although suicide death and suicide attempt were critical outcomes of the 2024 Suicide Risk CPG, suicidal ideation was an important outcome and, therefore, was addressed independently in this recommendation. The 2019 Suicide Risk CPG[k] suggested "offering problem-solving based psychotherapies to: a.) patients with a history of more than one incident of SDV to reduce repeat incidents of such behaviors; b.) patients with a history of recent SDV to reduce suicidal ideation; and c.) patients with hopelessness and a history of moderate to severe TBI." Hopelessness was not identified as a critical or an important outcome for the 2024 Suicide Risk CPG; therefore, the Work Group removed from the updated recommendation hopelessness in patients with a history of moderate to severe TBI. Because there was no new evidence specifically for problem solving–based psychotherapies for suicidal ideation, the Work Group decided to broaden the recommendation to CBT (including problem solving–based psychotherapies) focused on suicide prevention to reduce suicidal ideation for patients with a history of SDV. The corresponding 2019 Suicide Risk CPG discussion for this recommendation noted that the evidence base did not differentiate between suicidal versus non-suicidal SDV, which was confirmed by reconsideration of the 2019 CPG evidence base for this recommendation.([124-132]) Therefore, the 2024 Work Group did not include the "suicidal" qualifier for SDV.

Problem-solving therapy is one type of CBT specifically aimed at improving a patient's ability to cope with stressful life experiences through active problem solving. The strongest evidence for PST comes from an RCT conducted by Hatcher et al. (2011) with patients (n>1,000) who presented to a hospital after suicidal behavior.([126]) The primary outcome of this study was additional hospital presentation or presentations with suicidal behavior at one year. By design, the study included separate analyses for first-time and repeat presentations at the index episode. In this study, patients who received PST, regardless of the type of suicidal behavior history, reported reduced suicidal ideation as compared with those who received usual care at three months.([121], [126]) Five additional studies, with much smaller samples, also showed support for problem solving–based psychotherapies with respect to suicidal ideation.([124], [125], [127-129]) No harms related to PST were reported in the systematic evidence review.

The strongest evidence for the use of CBT-based psychotherapies in general to reduce suicidal ideation is from Witt et al. (2021), an SR that considered PST a common component of CBT-based psychotherapies and, thus, subsumed PST under the CBT-based psychotherapy comparator.([121]) This SR included seven studies that favored CBT-based psychotherapies in the reduction of suicidal ideation scores (e.g., on the BSSI). Two of the seven studies found no difference between CBT-based

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[k] See the 2019 VA/DoD Clinical Practice Guideline for the Assessment and Management of Patients at Risk for Suicide. Available at: https://www.healthquality.va.gov/

psychotherapies and comparators for the proportion of participants reporting suicidal ideation.

There is some variation in patient preferences regarding this intervention. PST specifically—and CBT-based interventions generally—is a pragmatic approach. As with other CBT-based psychotherapies, some patients might find the homework challenging or burdensome. A PST intervention is brief, can be easily taught, and is usable by various providers. As a broad category, CBT is typically time limited. PST is consistent with patient values and preferences by inherently incorporating continuity of care with a single care provider. Although some providers are untrained in PST specifically, patients and providers might find PST, as a CBT-based intervention, an accessible and acceptable treatment option. When determining how to prioritize a treatment approach in the event of multiple variables—including, but not limited to, underlying mental/behavioral health conditions—engaging in shared decision making between patient and provider is considered routine care. This process promotes collaborative determination regarding how to pursue a patient's treatment (for more information, see Approach to Care in the Department of Veterans Affairs and Department of Defense and Routine Care for Suicide Prevention).

The Work Group systematically reviewed evidence related to this recommendation (121) and considered the assessment of the evidence put forth in the 2019 Suicide Risk CPG.(124-132) Therefore, this is a *Reviewed, New-replaced* recommendation. The Work Group's confidence in the quality of the evidence was very low. The body of evidence had some limitations, including a small sample size and confounders in the analysis.(121, 124-132) The benefits of offering PST or other CBT-based psychotherapies in reducing suicidal ideation slightly outweighed the potential harms, which were not reported in the systematic evidence review. Patient values and preferences varied somewhat because of the intervention's accessibility and acceptability; however, some patients might find the homework challenging or burdensome. Thus, the Work Group made the following recommendation: We suggest offering cognitive behavioral therapy (including problem solving–based psychotherapies) focused on suicide prevention to reduce suicidal ideation for patients with a history of self-directed violence.

Recommendation

7. There is insufficient evidence to recommend for or against completing a crisis response plan or safety planning intervention to reduce the risk of suicide attempts in patients with recent suicidal ideation, a lifetime history of suicide attempts, or both.
   (Neither for nor against | Reviewed, New-replaced)

Discussion

The SPI and CRP are similar interventions that involve a patient and provider's collaboratively developing a plan for how the patient can maintain safety in the presence of suicide warning signs. The plan includes coping strategies and sources of support. See Routine Care for Suicide Prevention for further discussion regarding the components of the SPI and CRP.

No studies regarding the SPI and one study regarding CRP met the inclusion criteria for the systematic evidence review. Bryan et al. (2017) reported that completing a CRP can reduce suicide attempts among military personnel with suicidal ideation in the past week, a lifetime history of suicide attempt, or both.(133) The quality of the evidence from this study was rated low for suicide attempts. No studies were identified that included the critical outcome of suicide.

There is no evidence in the literature nor in Work Group clinical expert opinion that suggests there is any harm with completing the SPI or a CRP. These interventions are collaborative and should be patient centered. There is little variation in patient preferences regarding these interventions, with most patients finding them acceptable. Additional considerations include that the SPI and CRP can be completed in one session and require less intensive training for providers than some other interventions (e.g., psychotherapy). Regarding feasibility, the SPI, which includes components similar to CRP, has been extensively implemented in VHA and DoD.

The Work Group systematically reviewed evidence related to this recommendation. (133) Therefore, this is a *Reviewed, New-replaced* recommendation. The Work Group's confidence in the quality of the evidence was low. The body of evidence had some limitations, including being based on one RCT with a small sample size and the presence of confounders in the analysis.(133) The benefits of the CRP intervention in reducing suicide attempts outweighed the potential harms, which were not identified. Patient values and preferences were similar given that patients tended to be satisfied with this intervention. Thus, the Work Group made the following recommendation: There is insufficient evidence to recommend for or against completing a crisis response plan or safety planning intervention to reduce the risk of suicide attempts in patients with recent suicidal ideation, a lifetime history of suicide attempts, or both.

Recommendation

8. There is insufficient evidence to recommend for or against Collaborative Assessment and Management of Suicidality to reduce suicidal ideation.
(Neither for nor against | Reviewed, New-added)

Discussion

The Collaborative Assessment and Management of Suicidality (CAMS) is a suicide-focused therapeutic framework aimed at decreasing suicidal ideation while increasing

hope and reasons for living. Guided by the Suicide Status Form (SSF), therapists who employ CAMS work cooperatively with patients to identify and treat the patient's specific drivers of suicide.(134)

Although one SR and numerous clinical trials of CAMS have been published, there is insufficient evidence to conclude that CAMS reduces suicidal ideation. Andreasson et al. (2016) conducted a randomized trial comparing CAMS to DBT among adults with borderline personality traits.(135) No significant differences were found between DBT and CAMS on suicide attempts or suicidal ideation. Two other trials examined CAMS versus enhanced treatment as usual (ETAU) within a next-day appointment outpatient treatment setting. Post-treatment improvements in suicidal ideation were found in each condition across both trials. In one of the studies, a small but significant improvement in the probability of suicidal ideation at 3 months favored TAU,(136) although both trials reported better sustained reductions in suicidal ideation for CAMS at 12 months post treatment.(136, 137)

An SR by Swift et al. (2021) was also included in the evidence for this recommendation. (138) Compared with alternative interventions, Swift et al. (2021) found that CAMS resulted in significantly lower suicidal ideation (Cohen's d=0.25) compared with alternative interventions. However, the studies (n=3) conducted with active duty military and Veteran samples showed much smaller effect sizes (d=0.03; 95% CI: -0.19–0.24; p=0.82) than the studies (n=5) conducted with non-active duty military or Veteran samples (d=0.41; 95% CI: 0.27–0.55; p<0.001). In fact, among military and Veteran samples, the effect sizes of CAMS on suicidal ideation were insignificant. It should also be noted that one of these studies was not an RCT (139), while another study did not apply the full CAMS framework but incorporated the SSF in a traditional group therapy format.(140) Other smaller, lower-quality studies, found no differences between CAMS and TAU on measures of suicidal ideation.(121, 141) No differences between CAMS and TAU were found in measures of suicide attempts.(136, 138, 141) The systematic evidence review found no relevant evidence to recommend for or against CAMS to prevent suicide deaths.

There is some variation in patient preferences regarding the use of CAMS as a treatment for suicidal ideation. Although some patients might appreciate the frequent visits and face-to-face interactions with health care providers that CAMS treatment often entails, others might find this level of engagement burdensome, particularly if they are already enrolled in other forms of treatment. Patients who might be considering CAMS as an adjunctive treatment should also be made aware that the approach could require additional time and resource costs. In health care systems where resources are already stretched, the feasibility and acceptability of offering CAMS widely might be limited given the costs associated with training providers and purchasing proprietary measures. Although the Swift et al. (2021) MA findings suggest CAMS effects are consistent across different age groups and ethnicities, CAMS might be less effective for male

patients as well as active duty military and Veteran populations.([138](#)) Issues related to study design and modification of CAMS intervention noted above could also be contributing to the lower observed effect for active duty military and Veteran populations. Given these considerations, patients and health care providers should carefully weigh the advantages and drawbacks of CAMS in the context of patient's needs and available resources.

The Work Group systematically reviewed evidence related to this recommendation. ([121](#), [135-141](#)) Therefore, this is a *Reviewed, New-added* recommendation. The Work Group's confidence in the quality of the evidence was low, and various studies used a modified version of CAMS instead of CAMS as designed.([121](#), [135-141](#)) The benefits of offering CAMS for reducing suicidal ideation slightly outweighed the potential harms, which include limiting opportunities for other treatments and the associated time and cost burdens for patients and providers. Patient values and preferences varied somewhat because some patients might prefer the face-to-face interactions that CAMS offers, although others might find the additional layer of treatment burdensome. Thus, the Work Group made the following recommendation: There is insufficient evidence to recommend for or against Collaborative Assessment and Management of Suicidality to reduce suicidal ideation.

Recommendation

9. There is insufficient evidence to recommend for or against offering dialectical behavior therapy to reduce suicidal ideation and the risk of suicide attempts or suicide.
   (Neither for nor against | Reviewed, New-replaced)

Discussion

Dialectical behavior therapy is a comprehensive, evidence-based set of treatment strategies (i.e., dialectical, core, communication, case management, and structural) for BPD that directly targets SDV. Standard DBT treatment consists of a weekly individual therapy session of 1 hour, a weekly group skills training of 1.5–2.5 hours, phone coaching as needed, and a weekly therapist consultation team meeting of 1–2 hours. Despite a growing body of published studies examining the efficacy of DBT in reducing suicide-related outcomes, there is insufficient evidence to recommend for or against offering DBT to reduce suicidal ideation and the risk of suicide attempts or suicide.

An SR conducted by Witt et al. (2021) concluded that there was no evidence of an effect for DBT as compared with either TAU or alternative psychotherapy on suicide deaths at either post-intervention or during the 12–24 months follow-up periods.([121](#))

An SR conducted by DeCou et al. (2019) included pooled estimates that combined suicide attempts with self-harm, which might include non-suicidal self-injurious behavior.([142](#)) To directly examine the effect sizes of DBT related to the outcome of suicide attempts, post-hoc analyses of 7 studies included in the DeCou et al. (2019) SR

were conducted. Of the 7 studies examined, six were RCTs and one trial was controlled but not randomized. The six RCTs in the secondary analysis showed no detectable effect of DBT on suicide attempts. Although not included in the systematic evidence review because of its broad scope, similar findings emerged from an SR conducted by Fox et al. (2020), which found that DBT did not significantly reduce suicide attempts (Hedges' g=0.12; 95% CI: -0.12–0.36) or suicidal ideation (Hedges' g=-0.10; 95% CI: -0.41–0.20).(143) In addition, DeCou et al. (2019) found that compared with TAU, there was a small and imprecise association between DBT and suicidal ideation (d=-.23; 95% CI: -.47–.02) among the 10 studies included in the SR that assessed this outcome.(142)

There is some variation in patient preferences regarding this treatment. Participating in DBT involves a long-term commitment because a full course requires 48 sessions. For some patients, the benefits of enhanced skills and symptom improvements outweigh the burden of attending frequent sessions. However, others might find this commitment too resource intensive in terms of both time and emotional energy. The patient focus group noted that DBT can be burdensome because it requires frequent visits over an extended period. Implementation of DBT is also resource intensive. In the context of DoD, there are additional concerns about costs and staff availability. The treatment's feasibility is further questioned by its potential impact on military readiness: Service members requiring long-term, intensive care might fail to meet military readiness criteria, potentially precluding them from serving.(144, 145) DBT might be more relevant or acceptable for patients with BPD as the primary concern, given that some of the key benefits, such as symptom reduction, are especially pertinent to this population. Although DBT offers the benefit of increased support, the commitment to multiple weekly individual and group therapy sessions and commitment to 6–12 months of treatment might place a significant burden on both health care providers and patients. This balance underscores the complexity of making a generalized recommendation for or against the treatment.

The Work Group systematically reviewed evidence related to this recommendation. (121, 142, 143) Therefore, this is a *Reviewed, New-replaced* recommendation. The Work Group's confidence in the quality of the evidence was low. The body of evidence had some limitations, including inconsistent results across studies.(121, 142, 143) The benefits of DBT, such as reduced SDV, were balanced with the potential harm of requiring a long-term, resource-intensive commitment from both health care providers and patients. Patient values and preferences varied somewhat because some patients might value increased social support while engaging in DBT, although others might find the commitment too burdensome because of the length of time for a course of treatment. Thus, the Work Group made the following recommendation: There is insufficient evidence to recommend for or against offering dialectical behavior therapy to reduce suicidal ideation and the risk of suicide attempts or suicide.

Recommendation

10. There is insufficient evidence to recommend for or against peer-to-peer programs to reduce suicidal ideation.
    (Neither for nor against | Reviewed, New-added)

Discussion

Peer-to-peer (P2P) programs use non-medical contacts, such as friends, family, and co-workers, to act as first responders to identify individuals in crisis and facilitate the transition to professional care. Although great interest in these programs exists, there is insufficient evidence to determine whether P2P interventions prevent suicide deaths, reduce suicide attempts, or decrease suicidal ideation.(146-148) Pfeiffer et al. (2019) conducted a study among newly discharged individuals to determine whether a peer specialist intervention would reduce suicide attempts or ideation; however, it was a small, non-blinded trial and was powered only to detect a large difference.(148) De Jaegere et al. (2023) studied 46 adults with thoughts of self-harm to determine whether a group intervention facilitated by a lay trainer improved suicidal ideation, but there were no differences between groups.(147) Similarly, Conwell et al. (2021) studied elderly adults endorsing loneliness, but a peer companionship program did not demonstrate additional improvement in suicide ideation compared with TAU.(146)

There is some variation in patient preferences regarding this treatment. The patient focus group noted that, in general, P2P programs are helpful, but there is some resistance to sharing sensitive information with friends and co-workers. Large-scale training initiatives are resource-intense and costly, and there is a high degree of variability regarding the confidence of peers to engage with each other on the topic of suicide. There is also a high degree of variability in the quality of interactions provided by non-medical personnel. Particularly for the Veteran population, there might be difficulty accessing P2P support if the Veteran is homeless or transient. There is an ongoing analysis of a DoD suicide peer support program, but the results have not yet been published and, therefore, cannot influence the results of this recommendation.

The Work Group systematically reviewed evidence related to this recommendation. (146-148) Therefore, this is a *Reviewed, New-added* recommendation. The Work Group's confidence in the quality of the evidence was very low. The body of evidence had some limitations, including a lack of data for the critical and important outcomes.(146-148) For two studies, there were no differences in suicidal ideation. (146, 147) The benefits of P2P programs, including increased awareness of risk factors for suicide, were balanced with the potential harm of diverting resources away from programs with a more robust evidence base. Patient values and preferences varied somewhat because some patients prefer clinical interactions whereas others are comfortable with peer support. Thus, the Work Group made the following recommendation: There is insufficient evidence to recommend for or against peer-to-peer programs to reduce suicidal ideation.

d. Pharmacologic and Other Somatic Treatments

Medications and other somatic treatments have not been shown to decrease suicide deaths. As noted in the recommendations for this section, evidence suggests benefit in decreasing suicide attempts and ideation for only clozapine and ketamine infusion, respectively.

Recommendation

11. We suggest clozapine to reduce the risk of suicide attempts for patients with schizophrenia or schizoaffective disorder and either suicidal ideation or a history of suicide attempt(s).
    (Weak for | Reviewed, Amended)

Discussion

Clozapine has been found to reduce suicide attempts in patients with schizophrenia or schizoaffective disorder.(149, 150) Meltzer et al. (2003) is an RCT cited in Wilkinson et al. (2021), which demonstrated that clozapine has a lower overall risk of suicide attempts compared with other treatments. As a result of these findings, the U.S. Federal Drug Administration (FDA) approved clozapine for the indication of reducing the risk of suicidal behaviors in patients diagnosed with schizophrenia or schizoaffective illness. Unfortunately, the quality and consistency of the studies are highly variable, with only one RCT of moderate quality that compared clozapine to an alternative antipsychotic, olanzapine. This population was found to have a 12 times greater risk than the general population for death by suicide, which was highlighted in the SR.(149) Although study results suggest that antipsychotic medications might protect against suicide risk, the evidence appears to be most favorable for clozapine. The 2023 Management of First-Episode Psychosis and Schizophrenia CPG[l] included a review by Kazckow et al. (2011), which found that treating depressive symptoms in patients with schizophrenia is a vital component of suicide risk reduction.(151) This study was not included in the systematic evidence review for this CPG and, therefore, did not impact the strength of this recommendation.

Specifically, the Work Group noted the importance of recognizing that schizophrenia is associated with significant decreases in life expectancy and that resistant schizophrenia might be the most disabling of all mental/behavioral health conditions.(152, 153) These diagnoses are associated with significant health, social, and economic disparities that result from *both* the severity and nature of symptoms *and* social and structural obstacles patients face because of these diagnoses. In this context, evidence from epidemiological studies, included in the 2023 Schizophrenia CPG but not included in this systematic evidence review nor impacting the strength of this recommendation, suggests that clozapine might have a unique role in preventing excess mortality.(154-

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[l] See the 2023 VA/DoD Clinical Practice Guideline for the Management of First-Episode Psychosis and Schizophrenia. Available at: https://www.healthquality.va.gov/

157) These studies suggest that this effect might be related to the use of clozapine to treat schizophrenia or schizoaffective disorder with suicidality as well as to indirect effects on health and behavior mediated by its greater effectiveness for treating symptoms. In addition to effects on mortality, clozapine might have a role in ameliorating what otherwise might be a lifelong disability.

Some of the success attributed to clozapine can possibly be attributed to the surveillance approach required by the Clozapine Risk Evaluation and Mitigation Strategy (REMS) monitoring program. The REMS program mandates frequent visits to health care providers to monitor laboratory results before dispensing medication refills. Because of significant risks associated with clozapine, such as agranulocytosis, it is often used as the antipsychotic of last resort. Other factors and resources, identified in the 2023 Schizophrenia CPG, might impact when clozapine is chosen. Such resources required for the safe and effective use of clozapine include the capacities required to meet FDA's regulatory requirements, including laboratory tests to monitor neutrophil levels; training for both pharmacies and prescribers; registration of pharmacies, prescribers, and patients; and reporting of episodes of neutropenia.

There is a large variation in patient preferences regarding clozapine. Patients might be unwilling to commit to the level of monitoring and blood draws required for the REMS program. Repeated weekly blood draws over six months are inconvenient for the patient but also might cause pain and discomfort. Other significant adverse effects of the medication include weight gain, lipid abnormalities, sialorrhea, somnolence, and the rarely occurring but serious adverse events of myocarditis and cardiomyopathy.

The Work Group considered the assessment of the evidence put forth in the 2019 Suicide Risk CPG.(149, 150) Therefore, this is a *Reviewed, Amended* recommendation. The Work Group's confidence in the quality of the evidence was low. The body of evidence had some limitations, including a small sample size.(149, 150) The benefits of treating patients with schizophrenia or schizoaffective disorder with clozapine to reduce suicide attempts slightly outweighed the potential harms, which include weight gain, lipid abnormalities, sialorrhea, somnolence, and the rarely occurring but serious adverse events of myocarditis and cardiomyopathy. Patient values and preferences varied largely because of the level of monitoring required and the side effect profile endured. Thus, the Work Group made the following recommendation: We suggest clozapine to reduce the risk of suicide attempts for patients with schizophrenia or schizoaffective disorder and either suicidal ideation or a history of suicide attempt(s).

Recommendation

12. We suggest offering ketamine infusion as an adjunctive treatment for short-term reduction in suicidal ideation in patients with the presence of suicidal ideation and major depressive disorder.
    (Weak for | Reviewed, Not changed)

Discussion

Ketamine infusion as a single dose at 0.5 mg/kg has moderate evidence for acute symptom improvement of suicidal ideation within 24 hours of treatment of patients with MDD, with a moderate effect size that continues from one week (158) to six weeks.(159) In an SR of ketamine trials, 55% of patients after 24 hours and 60% at seven days reported no suicidal ideation.(158) Evidence indicates there is a risk of a transient elevation in blood pressure in a small number of patients that resolved without significant sequelae.(159, 160)

Despite general consistency in the evidence supporting ketamine for the treatment of suicidal ideation in an acute care setting, some variability exists in provider and patient preferences regarding this treatment. In a study by Wilkinson et al. (2018), ketamine infusion was administered in inpatient hospital settings to patients who predominantly were admitted to receive the therapy and released 24 hours following a positive response to treatment.(158) Recommendations for patient management following discharge are unclear because there are no long-term studies assessing the utility of ketamine on suicidal ideation following initial infusion.(158) These studies were done in populations with MDD and suicidal ideation; other comorbidities were not addressed. With ongoing treatment administration of ketamine, providers should consider the potential risk of addiction and continually evaluate. Ketamine has known dissociative effects and other emergence reactions that could exacerbate psychotic symptoms. However, few interventions result in such a rapid response with as large an effect size. The benefits of offering this treatment to patients with MDD and suicidal ideation make it a potentially important tool for providers to have available. At the same time, these benefits must be balanced with important barriers to ketamine therapy because patients might be unreceptive to an infusion administered in an inpatient setting or an outpatient clinic (if feasible), and ketamine therapy might not be an option for patients living in rural areas, where its availability might be limited. Finally, an important treatment consideration is that no current data exist to support ketamine's effect on suicide attempts or deaths (see Recommendation 13); further research is needed on long-term outcomes.(158)

The Work Group considered the assessment of the evidence put forth in the 2019 Suicide Risk CPG.(158-160) Therefore, this is a *Reviewed, Not changed* recommendation. The Work Group's confidence in the quality of the evidence was moderate. The body of evidence had some limitations, including a lack of effectiveness demonstrated in treating critical outcomes such as death by suicide.(158-160) The benefits of ketamine infusion as an adjunctive treatment for short-term reduction in suicidal ideation in patients with MDD slightly outweighed the potential harms, which include known risk of addiction, dissociative effects, and other emergence reactions that could exacerbate psychotic symptoms. Patient values and preferences varied somewhat because patients will want relief if they have significant suicidal ideation but might be apprehensive about the potential harms of ketamine. An additional limitation to consider is the variable availability of resources between clinical sites. Thus, the Work

Group made the following recommendation: We suggest offering ketamine infusion as an adjunctive treatment for short-term reduction in suicidal ideation in patients with the presence of suicidal ideation and major depressive disorder.

Recommendation

13. There is insufficient evidence to recommend for or against ketamine infusions or esketamine to reduce the risk of suicide or suicide attempts.
    (Neither for nor against | Reviewed, New-added)

Discussion

Evidence from Abbar et al. (2022) comparing an intravenous infusion of ketamine to placebo reported one suicide attempt in the ketamine arm and none in the placebo group during the first three days of the study.(161) At week six, eight patients in the placebo group and six in the ketamine arm attempted suicide. Evidence from an SR by Dean et al. (2021) evaluating one study of ketamine versus midazolam at one-month follow-up showed no difference in suicide attempts (OR: 0.74; 95% CI: 0.03–18.76). Dean et al. (2021) also evaluated two studies of esketamine versus placebo that showed no difference in suicide attempts (OR: 0.99; 95% CI: 0.24–4.20; p=0.99).(162)

No studies met the search criteria for the systematic evidence review that assessed the effects of ketamine or esketamine for the prevention of suicide death.

There is a large variation in patient preferences regarding this treatment. The patient focus group noted that ketamine and esketamine treatment can be burdensome because they require frequent visits for drug administration and monitoring. Others might be concerned about potential side effects. Further, the use of ketamine and esketamine requires staff time and space that is unavailable at some facilities. This situation in turn limits access to these treatments for appropriate candidates. There is also concern about the drug's abuse liability for misuse among patients with SUD.

The Work Group systematically reviewed evidence related to this recommendation. (161, 162) Therefore, this is a *Reviewed, New-added* recommendation. The Work Group's confidence in the quality of the evidence was very low. The body of evidence had some limitations, including a small sample size and lack of evidence for death as a critical outcome.(161, 162) The benefits of ketamine and esketamine in decreasing suicide attempts and death were balanced with the potential harm of known adverse reactions. Patient values and preferences varied largely because some patients might be eager to try other treatments, although others might be concerned about adverse effects and the time needed for the administration of the drug. Thus, the Work Group made the following recommendation: There is insufficient evidence to recommend for or against ketamine infusions or esketamine to reduce the risk of suicide or suicide attempts.

Recommendation

14. There is insufficient evidence to recommend for or against lithium to reduce the risk of suicide or suicide attempts for patients with mood disorders.
(Neither for nor against | Reviewed, New-replaced)

Discussion

An SR by Huang et al. (2022) of five RCTs (OR: 0.23; 95% CI: 0.06–0.97) suggests that lithium reduces the risk of suicide; however, the confidence interval was consistent with a wide range of effect sizes from a substantial reduction in risk to effectively no reduction.(163) An SR by Nabi et al. (2022), which included 12 studies in patients with depression or bipolar disorder, found that the pooled suicide rate for patients randomized to lithium (0.2%) was lower than for those assigned to placebo or TAU (0.4%), but the confidence interval was imprecise and included no difference (OR: 0.41; 95% CI: 0.03–2.49; p=0.45).(164)

The SR by Nabi et al. (2022) reviewed five studies evaluating lithium's effect on suicide attempts and found a lack of benefit (OR: 1.13; 95% CI: 0.6–2.1). The MA by Huang et al. (2022) reviewed three studies and found similar effects (OR: 0.80; 95% CI: 0.37–1.73).

The 2019 VA/DoD Suicide Risk CPG[m] provided a *Weak for* recommendation for lithium alone (among patients with bipolar disorder) or in combination with another psychotropic agent (among patients with unipolar depression or bipolar disorder) to decrease the risk of death by suicide in patients with mood disorders, based on an SR by Cipriani et al. (2013) evaluating the risk of suicide.(165) Although the Cipriani et al. (2013) SR showed a benefit with lithium for suicide in four RCTs comparing lithium with placebo or with active comparators, the larger, more contemporary analysis by Nabi et al. (2022), which included the four trials evaluated by Cipriani et al. (2013), failed to find a difference in the suicide rate for lithium compared with placebo or TAU.(164, 165)

There is a large variation in patient preferences regarding this treatment. Some patients might be willing to try lithium, although others might decline because of potential side effects (e.g., gastrointestinal upset, tremor, polyuria, polydipsia, weight gain, hypothyroidism, leukocytosis), which might also contribute to a large variation in adherence. Lithium has a narrow therapeutic window. Exceeding the window might result in toxicity, which requires monitoring blood levels. Caution should be used when considering lithium in patients with medical comorbidities (e.g., chronic kidney disease), and lower dosages are generally required in elderly populations. Blood level monitoring might negatively impact adherence and the feasibility of using lithium.

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[m] See the 2019 VA/DoD Clinical Practice Guideline for the Assessment and Management of Patients at Risk for Suicide. Available at: https://www.healthquality.va.gov/

Lithium might be particularly useful for the management of bipolar disorder.[n] However, providers should consider the use of lithium on an individualized basis using shared decision making with careful consideration of potential alternative treatment options.

The Work Group systematically reviewed evidence related to this recommendation(163, 164) and considered the assessment of the evidence put forth in the 2019 Suicide Risk CPG.(165) Therefore, this is a *Reviewed, New-replaced* recommendation. The Work Group's confidence in the quality of the evidence was very low. The body of evidence had some limitations including risk of bias, study inconsistency, and imprecision.(163, 164) The benefits of lithium for decreasing the risk of suicide or suicide attempts were balanced with the potential harm of adverse events. Patient values and preferences varied largely because some patients are willing to try lithium, although others might decline this treatment. Thus, the Work Group made the following recommendation: There is insufficient evidence to recommend for or against lithium to reduce the risk of suicide or suicide attempts for patients with mood disorders.

Recommendation

15. There is insufficient evidence to recommend for or against repetitive transcranial magnetic stimulation to reduce the risk of suicide or suicide attempts.
(Neither for nor against | Reviewed, New-added)

Discussion

Repetitive transcranial magnetic stimulation (rTMS) is effective in improving symptoms for patients with MDD. The 2022 VA/DoD MDD CPG[o] provided a *Weak for* recommendation for patients who demonstrated partial or no response to two or more adequate pharmacologic treatment trials.(166) There is much less evidence assessing the impact of this treatment on suicide deaths or suicide attempts. One RCT was identified that compared active rTMS with sham rTMS in an active-duty military population in crisis.(167) The authors reported a reduction in suicidal ideation using the Beck Scale for Suicidal Ideation-Current (BSSI-C) with sustained effects at one-, three- and six-month follow-up. The protocol involved an intensive nine-session intervention over three days with improvement in both arms, though the active group showed an accelerated resolution of suicidal thoughts. The authors felt that an enhanced placebo response might have occurred, explaining at least partially the significant reduction in suicidal ideation in both groups. This study was powered only to detect a large difference in suicide attempts or deaths. There was no between-group difference observed for suicide attempts (two patients in each group) or suicide deaths (none in either group). Adverse effects of treatment were generally mild and included scalp pain,

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[n] See the 2023 VA/DoD Clinical Practice Guideline for the Management of Bipolar Disorder. Available at: https://www.healthquality.va.gov/
[o] See the 2022 VA/DoD Clinical Practice Guideline for the Management of Major Depressive Disorder. Available at: https://www.healthquality.va.gov/

headache, flu-like symptoms, and gastroenteritis, with pain being the most common reason for discontinuation.(167)

There is a large variation in patient preferences regarding this treatment. Some rTMS protocols can be very intensive and patients might not wish to commit to the time obligation. There is a wide variation in provider knowledge and ability to explain rTMS, further increasing the variability. Repetitive transcranial magnetic stimulation is unavailable to some patients, and the treatment protocols can vary depending on provider expertise. The rTMS equipment is expensive, requires operator skill to ensure stimulation of the correct location, and is not located at all VA and DoD treatment facilities. In the one RCT available for inclusion in the systematic evidence review, there was a higher dropout rate in the active rTMS group compared with sham rTMS, despite a lack of major adverse events.(167)

There are other recent and ongoing studies with an even more intense protocol using rTMS up to 10 times per day, but these studies are also primarily designed to measure depression severity and do not directly address suicide attempts or death.(168, 169) These studies were not included in the systematic evidence review.

The Work Group systematically reviewed evidence related to this recommendation. (167) Therefore, this is a *Reviewed, New-Added* recommendation. The Work Group's confidence in the quality of the evidence was low. The body of evidence had some limitations, including a small sample size and lack of applicable critical outcomes.(167) The benefits of rTMS, which include a reduction in suicidal ideation via the BSSI-C, were balanced with the potential harms, including a substantial time burden and mild discomfort. Patient values and preferences varied largely because some patients prefer psychotherapy or pharmacotherapy to a procedure. Thus, the Work Group made the following recommendation: There is insufficient evidence to recommend for or against repetitive transcranial magnetic stimulation to reduce the risk of suicide or suicide attempts.

e. Post-Acute Care

Recommendation

16. We suggest sending patients periodic caring communications (e.g., postal mail, text messages), in addition to usual care, for 12 months following hospitalization related to suicide risk to reduce the risk of suicide attempts.
(Weak for | Reviewed, New-replaced)

Discussion

The caring contacts intervention involves sending short, non-demanding communications at regular intervals to patients at risk for suicide. Moderate quality evidence from an SR conducted by Skopp et al. (2023) suggests that caring contacts might reduce suicide attempts at one-year follow-up compared to usual care.(170) The

SR did not find strong evidence to support the efficacy of caring contacts in reducing suicide deaths at one-year, two-year, or five-year follow-ups. Skopp et al. (2023) noted that low event counts within the five included RCTs resulted in a very imprecise summary estimate. Wide confidence intervals suggest a high level of uncertainty regarding any true effect on suicide death.

Suicide attempt data from two RCTs included in Skopp et al. (2023) contributed to the evidence base for this recommendation. Hassanian-Moghaddam et al. (2017) conducted a randomized study of patients who were admitted to an Iranian hospital following self-poisoning.(171) Participants in the active condition received eight caring greeting cards in addition to usual care. The authors described typical care following self-poisoning as poor and inadequately coordinated. Comtois et al. (2019) sent 11 caring text messages in addition to usual care to U.S. active duty Service members identified by behavioral or medical health providers as having suicidal ideation or attempt.(172) Inclusion criteria also required endorsement of suicidal ideation at the time of study screening. Usual care for most participants included individual psychotherapy and psychotropic medication treatment. In both studies, caring contacts were sent over a period of 12 months. Skopp et al. (2023) reported that the combined data from these RCTs demonstrated a 43% risk reduction, with a compatible range of 20–60%, and no statistical heterogeneity was observed. No adverse events were reported in these studies.(170)

There is some variation in patient preferences regarding this intervention. Although some Work Group members maintain that some patients might perceive these ongoing communications as burdensome or generic, studies not included in the systematic evidence review suggested that Veterans at risk for suicide might find caring contacts helpful.(173-175) Other considerations regarding this recommendation include communication format (e.g., postal mail, text messages); use of non-demanding, supportive, culturally adapted messaging; communication delivery barriers for population subsets; and logistical considerations of sending messages and replying to potentially time-sensitive responses from patients.

The Work Group systematically reviewed evidence related to this recommendation (170, 172) and considered the assessment of the evidence put forth in the 2019 Suicide Risk CPG.(171) Therefore, this is a *Reviewed, New-replaced* recommendation. The Work Group's confidence in the quality of the evidence was moderate. The body of evidence had some limitations, including concerns regarding allocation concealment, blinding, and attrition and missing data.(170-172) The benefits of caring contacts in reducing suicide attempts outweighed the potential harm of adverse events, which were not reported. Patient values and preferences varied somewhat because this intervention might be perceived as generic or burdensome, but evidence exists that it is acceptable to Veterans at risk for suicide. Thus, the Work Group made the following recommendation: We suggest sending patients periodic caring communications

(e.g., postal mail, text messages), in addition to usual care, for 12 months following hospitalization related to suicide risk to reduce the risk of suicide attempts.

Recommendation

17. There is insufficient evidence to recommend for or against offering brief contact interventions (e.g., telephonic interventions, crisis cards, World Health Organization Brief Intervention and Contact treatment modality) in addition to usual care following discharge from the emergency department to reduce the risk of suicide attempts.
(Neither for nor against | Reviewed, New-replaced)

Discussion

The World Health Organization (WHO) Brief Intervention and Contact (BIC) treatment modality consists of "a one hour individual information session as close to the time of discharge as possible and, after discharge, nine follow-up contacts (phone calls or visits, as appropriate) according to a specific timeline up to 18 months (at one, two, four, seven, and 11 week(s), and four, six, 12 and 18 months), conducted by a person with clinical experience (e.g., doctor, nurse, psychologist)."([176](#))

In reviewing the evidence from the 2019 Suicide Risk CPG, the three RCTs—Fleischmann et al. (2008), Mousavi et al. (2014), and Amadeo et al. (2015) ([176-178](#))—included in the SR by Riblet et al. (2017) ([179](#)) lacked consistency in findings despite similarities in study designs following WHO BIC follow-up times, approaches, and measures. The largest study to focus on the critical outcome of suicide deaths was Fleischmann et al. (2008).([176](#)) Among the five countries that completed the study protocol, there were fewer suicides in the group that received the intervention compared with those receiving usual care (3 suicides versus 24; p<0.0001). The usual care arm lacked virtually any psychiatric treatment, referral for patients with suicide attempts on discharge from the ED, or both, which is not standard of care for the target populations of this CPG.

Generalizability of the intervention to high-income countries where psychiatric treatment, referral, or both are components of usual care following ED presentation for suicide attempt might be limited.([176](#), [177](#), [179](#)) Thus, the added benefit of WHO BIC to usual care in higher-income countries is unclear. However, even in high-income countries, regular follow-up after ED discharge for suicide attempt is not routine, and when it does occur, it can vary substantially with respect to the frequency and duration of follow-up contacts.

The systematic evidence review identified no new evidence indicating a change to the 2019 Suicide Risk CPG recommendation. One pilot study focused on the feasibility of recruiting Veteran patients (n=20) through a Primary Care Mental Health Integration Clinic.([180](#)) This study supports future research and suggests the ease of securing an adequate sample size. Future researchers are strongly recommended to study in

countries and locations where TAU contains more moderate standards of care, accessibility, or both and where study design and focus are powered to determine effectiveness at preventing suicide deaths and not merely ideation, hopefulness, or repeat attempts.

The Work Group systematically reviewed evidence related to this recommendation (180) and considered the assessment of the evidence put forth in the 2019 Suicide Risk CPG.(176, 177, 179) Therefore, this is a *Reviewed, New-replaced* recommendation. The Work Group's confidence in the quality of the evidence was low. The body of evidence had some limitations, including attrition and selection bias, limited validity of the source of data for suicide deaths, lack of repeated findings, lack of statistically significant findings (TAU versus TAU + BIC) even with suicidal behavior,(178) and confounders in the analysis.(176) The benefits of reductions in suicide deaths slightly outweighed the potential harm of adverse events, which was small. Patient values and preferences varied somewhat and generalizability to high-income countries is unclear. Thus, the Work Group made the following recommendation: There is insufficient evidence to recommend for or against offering brief contact interventions (e.g., telephonic interventions, crisis cards, World Health Organization Brief Intervention and Contact treatment modality) in addition to usual care following discharge from the emergency department to reduce the risk of suicide attempts.

f. Technology-Based Modalities

Recommendations

18. We suggest the use of self-guided digital interventions (app or web) that include, but are not limited to, cognitive behavioral–based therapeutic content for short-term reduction in suicidal ideation.
    (Weak for | Reviewed, New-replaced)

19. There is insufficient evidence to recommend for or against the use of standalone or adjunctive technology-based tools (e.g., mobile and web apps, automated telephone-based) to reduce the risk of suicide attempts or suicide.
    (Neither for nor against | Reviewed, New-replaced)

Discussion

Digital health care technology can be defined broadly as software programs, websites, apps, and other internet and computerized resources that facilitate the delivery of care, self-guided health, and user learning. No studies were identified that assessed the efficacy or the effectiveness of treatment provided via telehealth (e.g., web-based or telephonic real-time encounters between patient and provider) compared with traditional face-to-face delivery (i.e., patient and provider encounter in the same room).

The Work Group found weak evidence to support the use of self-guided digital interventions that directly target suicidal ideation and support behaviors to reduce

suicidal ideation in the weeks following the use of the intervention. In an SR by Torok et al. (2020), which sought to test whether direct (targeting suicidality) and indirect (targeting depression) digital interventions are effective in reducing suicidal ideation and behaviors, intervention duration varied from 10 days to eight weeks, and modal intervention duration was six weeks.(181) The majority of tested interventions used CBT-based approaches or components. Study primary outcome timepoints were defined variably (generally 6–8 weeks after baseline), concordant with intervention duration. The primary SR outcome, overall post-intervention effect for suicidal ideation, was small but statistically significant immediately following the active intervention (Hedges' g: -0.18; 95% CI: -0.27–-0.10; p<0.0001). Measurement of suicidal ideation at the longest follow-up time point showed no statistically significant difference between intervention and control groups. The results of this SR are concordant with a sub-analysis from a prior SR.(182) Overall, the body of evidence suggests that digital interventions might lead to short-term, small decreases in suicidal ideation compared with no active treatment, waitlist, or attention control. The evidence does not support a sustained positive effect on suicidal ideation, and we cannot assume equivalence with face-to-face treatment delivery.

The systematic evidence review identified three SRs (181, 183, 184) and five RCTs.(172, 185-188) The SR by Sarrubi et al. (2022) sought to describe studies on mobile apps targeting suicidal crises.(184) Comendador et al. (2023) studied the effectiveness of telephone-based suicide prevention programs among patients with schizophrenia and related disorders.(183) Taken together, the majority of studies identified focused on suicidal ideation as an outcome, but six clinical trials within the body of literature examined suicide attempt as an outcome. None examined suicide death as an outcome. Within this group, only one trial by Comtois et al. (2019) showed a significant effect of the intervention on suicide attempts; in this trial of augmentation of standard military health care with caring contacts delivered via text messages versus standard care, intervention patients self-reported fewer suicide attempts since baseline (secondary outcome; OR: 0.52; 95% CI: 0.29–0.92).(172). On the other hand, one isolated but large pragmatic RCT, which included outpatients reporting frequent suicidal thoughts, showed that the risk of fatal or non-fatal self-harm over 18 months was significantly higher in an online skills training intervention group compared with usual care (HR: 1.29; 97.5% CI: 1.02–1.64).(188)

There is some variation in patient preferences regarding this treatment approach. Patients generally value having additional treatment options and assistance with care coordination that digital tools can provide; however, they do not want the tools to supplant direct contact with providers. There is also potential for some digital tools to produce harm. The Work Group notes the potential for some digital tools to include "harmful" content, which could promote suicidal behavior;(188) thus, providers should review specific apps before recommending them to their patients. Other considerations

regarding the recommendations included limited patient burden, potential for reach, and the Work Group's experience with technology-based interventions.

The Work Group systematically reviewed evidence related to Recommendation 18 (181) and considered the assessment of the evidence put forth in the 2019 Suicide Risk CPG.(182) Therefore, this is a *Reviewed, New-replaced* recommendation. The Work Group's confidence in the quality of the evidence was low. The body of evidence had some limitations, including imprecision and inconsistency in study results, heterogeneity in the interventions tested and populations studied, and risk for bias in study designs.(181, 182) The benefits of a possible reduction of suicidal ideation slightly outweighed the potential harm. Patient values and preferences varied somewhat because some patients prefer additional treatment options but do not want the tools to substitute for direct contact with providers. Thus, the Work Group made the following recommendation: We suggest the use of self-guided digital interventions (app or web) that include, but are not limited to, cognitive behavioral–based therapeutic content for short-term reduction in suicidal ideation.

The Work Group systematically reviewed the evidence related to Recommendation 19.(172, 181, 183-188) Therefore, this is a *Reviewed, New-replaced* recommendation. The Work Group's confidence in the quality of the evidence was very low. The body of evidence had some limitations, including imprecision and inconsistency in study results, heterogeneity in the interventions that were tested and the populations that were studied, and risk for bias in study designs.(172, 181, 183-188). Patient values and preferences varied somewhat because some patients prefer additional treatment options but do not want the tools to substitute for direct contact with providers. Thus, the Work Group made the following recommendation: There is insufficient evidence to recommend for or against the use of standalone or adjunctive technology-based tools (e.g., mobile and web apps, automated telephone-based) to reduce the risk of suicide attempts or suicide.

g. Community-Based Interventions

Recommendation

20. We suggest multi-component community interventions to reduce the risk of suicide. Common components include, but are not limited to: training on mental/behavioral health topics and/or suicide risk factors; local networking and/or community facilitation; and providing mental/behavioral health and/or suicide prevention materials.
    (Weak for | Reviewed, New-replaced)

Discussion

A public health approach to suicide includes both clinical and community-based suicide prevention efforts. Toward this end, in 2018, VA adopted a national strategy for suicide prevention that includes a focus on implementing community strategies, thereby

highlighting the importance of reviewing and incorporating such evidence as part of the CPG.(189) Pertaining to this recommendation, evidence from six cohort/observational studies suggested that multicomponent community-focused interventions reduced the rate of suicide death.(190-194) The study with the strongest evidence (moderate) in support of this recommendation was Knox et al. (2003), a pre-post implementation cohort study.(192) The U.S. Air Force implemented a five-year, multilayered (11-level) intervention aimed at reducing risk and enhancing protective factors. Implementation of the program was associated with a 33% relative risk reduction for suicide death in an ecological data analysis. Additional evidence in support of this recommendation was provided by Székely et al. (2013),(194) a two-year, 4-level intervention program that showed a statistically significant decrease in the suicide rate in the intervention region compared with the country, and by Hegerl et al. (2006), a two-year, 4-level community based-intervention that showed a statistically significant decrease in suicide acts (suicide and suicide attempts) compared with the control region.(191)

Although the multicomponent strategies were implemented among diverse cohorts, such as individuals serving in the U.S. Air Force (192) and older adults living in Japan,(193) closer evaluation of the specific components suggested key common interventional strategies, including training on mental/behavioral health topics, suicide risk factors, or both; local networking, community facilitation, or both; and providing mental/behavioral health or suicide prevention materials, or both. Gatekeeper training was included in many of the multicomponent interventions. The common elements identified in Table 7 were not the only elements included in most of the programs in the evidence base. How the evidence of any effect on suicide would change if the unique components were removed to focus only on the set of common elements is unknown.

Table 7. Interventional Strategies

Component	Székely et al. (2013) (194)	Oyama et al. (2005) (193)	Collings et al. (2018) (190)	Hegerl et al. (2006) (191)	Knox et al. (2003) (192)
Training on Suicide Risk Factors	X (To general practitioners, somewhat focused on depression)	X (Elderly – depression and suicide risks)	X (Lay and professionals)	X (PCP)	X (Leadership)
Workshops on Mental Health Topics/Training	X (To general practitioners)	X (Elderly)	X	X (12 session PCP)	X (Leadership, briefings to commanders)
Local Networking and Advocacy/ Community Facilitators	X		X	X	X (Community Preventive Services)

Component	Székely et al. (2013) (194)	Oyama et al. (2005) (193)	Collings et al. (2018) (190)	Hegerl et al. (2006) (191)	Knox et al. (2003) (192)
Distribution of Materials on Web-Based Resources/ Public Relations Campaign	X		X	X (Health professional, lay public)	X (Community education)
Emergency Cards to High-Risk Individuals	X				
Group Activity Programs/ Self-Help Groups		X (Elderly)		X (Depressed persons, history of SA, relatives)	
Self-Assessment		X (Elderly)			
Screening	X (Encouraged use of BDI – general practitioners)				
Investigative Interview Policy					X
Critical Incident Stress Management					X
Integrated Delivery System (Increase protective factors)					X
Limit Patient Privilege					X
Behavioral Health Survey					X
Suicide and Surveillance System					X

Abbreviations: BDI: Beck Depression Inventory; PCP: primary care provider; SA: sexual assault

There is some variation in patient preferences regarding this intervention. Furthermore, because components of this intervention can be tailored to the needs of specific communities and resources available, such interventions might be more accessible to patients living in underserved areas. These same factors might impact equity and accessibility.

The Work Group systematically reviewed evidence related to this recommendation. (190-194) Therefore, this is a *Reviewed, New-replaced* recommendation. The Work

Group's confidence in the quality of the evidence was very low. The body of evidence had some limitations, including study designs, selection bias, ecological data analysis, confounding, and diverse cohorts and components.(190-194) The benefits of multicomponent community interventions in possibly decreasing death by suicide slightly outweighed the potential harms given no adverse events were reported. Patient values and preferences varied somewhat because some patients prefer other interventions. Thus, the Work Group made the following recommendation: We suggest multi-component community interventions to reduce the risk of suicide. Common components include, but are not limited to: training on mental/behavioral health topics and/or suicide risk factors; local networking and/or community facilitation; and providing mental/behavioral health and/or suicide prevention materials.

Recommendation
21. We suggest reducing access to lethal means to reduce the risk of suicide by firearms, jumping, or medication overdose.
    (Weak for | Reviewed, New-replaced)

Discussion
Access to firearms is a risk factor for death by suicide.(195, 196) Firearms account for 50% of suicide deaths in the United States(197), and approximately 90% of suicide attempts involving firearms result in death.(198) Recent ecological studies have shown that differences in state laws regulating firearms access and higher state-level firearms ownership rates (199) are associated with firearm-related and overall suicide rates, even after accounting for important demographic and geographic factors.(200, 201) Veterans and military Service members are more likely to use firearms as a method for dying by suicide compared with the general population.(202) Military Service members often have ready access to firearms, and Veterans have higher rates of firearm ownership compared with their civilian counterparts.(203)

Observational evidence suggests that reducing access to lethal means decreases the rate of suicide by firearms, jumping, or medication overdose. Swanson et al. (2023) found that firearm divestment, defined as "a cessation of ownership of all handguns a person owns," among owners of a single firearm was associated with a lower rate of suicide death by firearm, provided they did not reacquire a firearm.(107) Findings from other studies observing lethal means restriction of firearms, conducted in a variety of patient populations, are consistent with this finding. Ecological studies by Saadi et al. (2020), Klieve et al. (2009), and Kapusta et al. (2007) found that a decrease in suicide deaths by firearm was associated with the institution of firearm legislation.(204-206) Hawton et al. (2013, 2011) and Morgan et al. (2007) reported similar findings of an association between a decrease in suicide deaths by overdose and the institution of legislation restricting pack sizes of paracetamol.(109-111) Okolie et al. (2020) found a negative association between jumping deaths and the installation of barrier devices.(112) What the impact of means-specific lethal means restriction might have on

other methods of suicide death is unclear. For firearm divestment, Swanson et al. (2023) found an increased risk of suicide due to other causes and an increase in overall suicide,(107) while Saadi et al. (2020) found that increased firearm laws were associated with a decreased total suicide rate.(204) Several other studies included in the systematic evidence review did not evaluate this outcome. Further research is needed in this area.

There is a large variation in patient preferences regarding this intervention. Some patients hold strong beliefs regarding individual autonomy and civil rights, particularly when discussing reducing access to firearms, which might affect the feasibility and acceptability of firearm divestment. Some subgroups, including women, might carry firearms to maintain a sense of safety, and, therefore, reducing access to firearms might present acceptability concerns. Further, there are potential concerns regarding equity and how these interventions are implemented across various populations. Additionally, it was noted that some patients might recommend these interventions to others but not necessarily for themselves. Concerns were also raised regarding the feasibility of widespread barrier device installation to prevent suicide by jumping and the feasibility of medication access restrictions.

The Work Group systematically reviewed evidence related to this recommendation (107, 109-112, 204-206) and considered the assessment of the evidence put forth in the 2019 Suicide Risk CPG.(196) Therefore, this is a *Reviewed, New-replaced* recommendation. The Work Group's confidence in the quality of the evidence was very low. The body of evidence had some limitations, including a preponderance of observational studies, selection bias, confounding, lack of individual-level associations, and wide variation in specific implementation of varied laws and control measures.(107, 109-112, 204-206) The benefits of lethal means restriction in decreasing the risk of suicide by firearms, medication overdose, or jumping outweighed the potential harm of reduction in individual autonomy. Patient values and preferences varied largely because of strong beliefs regarding individual autonomy and civil rights. Thus, the Work Group made the following recommendation: We suggest reducing access to lethal means to reduce the risk of suicide by firearms, jumping, or medication overdose.

Recommendation

22. There is insufficient evidence to recommend for or against the use of targeted messaging to at-risk populations to reduce suicidal ideation and improve help-seeking behavior.
    (Neither for nor against | Reviewed, New-added)

Discussion

Targeted messaging refers to the act of creating a specific message or content for a specific target audience. The Work Group reviewed two relevant studies related to this recommendation, including one SR/MA and one RCT.(207, 208) The SR/MA by

Niederkrotenthaler et. al (2022) summarized findings from eight RCTs that focused on the effects of media stories of hope and recovery on individuals with some degree of vulnerability to suicide,(207) while the RCT by Till et. al (2023) observed the role of the narrative in educative suicide awareness materials.(208)

Niederkrotenthaler et. al (2022) focused on suicidal ideation as the primary outcome and help-seeking attitudes and intentions as the secondary outcomes. Help-seeking behaviors were not observed as an outcome. Participants were randomly assigned to either an intervention or a control group; the control group reviewed a non-suicide-related story, and the intervention group reviewed media stories that focused on suicidal ideation (absent of near-fatal or fatal suicidal behaviors) and personal narratives of hope and recovery. The primary analysis for change in suicidal ideation included six studies in which participants who experienced vulnerability at baseline reviewed a personal narrative of how to cope with a suicidal crisis. The intervention formats varied between newspaper articles, videos, and written text. The intervention group showed a larger reduction (d=-0.22; 95% CI: -0.39–-0.04) in mean suicidal ideation compared with the control group. This effect was attenuated in sensitivity analyses that included all participants irrespective of baseline vulnerability or when the narrative exposure definition was expanded. The analysis for change in help-seeking attitudes and intentions included four studies in which participants who experienced vulnerability at baseline reviewed a personal narrative of how to cope with a suicidal crisis. The intervention formats ranged from a television documentary, a newspaper article, video messages, and written text. No statistically significant differences between the groups (d=0.14; 95% CI: -0.15–0.43) were found.(207)

The double-blinded RCT by Till et. al (2023) examined the effects of educational news articles highlighting the high frequency of suicidal behavior on the outcomes of suicidal ideation, stigmatizing attitudes toward suicidal individuals, attitudes toward suicide prevention, help-seeking intentions, and accessibility of concepts related to suicide and suicide prevention. Additionally, the study compared the effects of educational news articles about suicide prevention (focused on either seeking professional help or conveying the message that everyone can help prevent suicide) with educational news articles focused on the prevalence of suicide. Participants were placed in one of three intervention groups: high-prevalence, professional help, and a control group that reviewed articles unrelated to suicide or mental/behavioral health. No statistically significant differences among groups on relevant outcome measures were found.(208)

There is some variation in patient values and preferences regarding targeted messaging. Evidence from one SR/MA shows that media narratives of hope and recovery from suicidal crises can have a beneficial effect on suicidal ideation in individuals with some vulnerability, but there is insufficient evidence regarding help-seeking attitudes and ideations.(207) Evidence also exists to support that narratives of suicide awareness materials must be carefully selected to avoid unfavorable cognitions that might promote

unwanted perceptions of suicide prevention.(208) Even when at-risk populations were exposed to content, they did not have increased suicidal ideation. The Work Group considered other implications such as equity and acceptability. Targeted messaging can be distributed to a broad audience, and materials can be reused and modified for cultural relevance. However, targeted messaging might not be a standard of care in EDs or high-volume settings.

The Work Group systematically reviewed evidence related to this recommendation.(207, 208) Therefore, this is a *Reviewed, New-added* recommendation. The Work Group's confidence in the quality of the evidence was very low. The body of evidence had some limitations, including a small sample size and methodological limitations.(207, 208) Patient values and preferences varied somewhat because some patients might not want to read articles or content. Thus, the Work Group made the following recommendation: There is insufficient evidence to recommend for or against the use of targeted messaging to at-risk populations to reduce suicidal ideation and improve help-seeking behavior.

Recommendation

23. There is insufficient evidence to recommend for or against standalone gatekeeper training to reduce the risk of suicide.
   (Neither for nor against | Reviewed, Amended)

Discussion

Health care professionals and peers can recognize suicide risk before a suicide attempt occurs. Equipping these peers and personnel with requisite knowledge and skills can facilitate intervention. The integration of gatekeeper training, which emphasizes recognizing early warning signs of suicidal ideation, understanding risk factors, and implementing timely and effective interventions, amplifies the standard of care across the health care spectrum. In addition, it should also be noted that gatekeeper training was a common element in the multicomponent interventions discussed in Recommendation 20.

The current guidance on gatekeeper training remains largely consistent with the 2019 VA/DoD Suicide Risk CPG.[p] There was no evidence of a reduction in suicide risk associated with gatekeeper training. The evidence base now includes a study by Gould et al. (2013) that investigated the effects of Applied Suicide Intervention Skills Training (ASIST).(209) The study found that patients who spoke with ASIST-trained counselors typically felt less agitated, alone, depressed, overwhelmed, and suicidal, and they felt more empowered and hopeful. However, because these outcomes are based on

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[p]   See the 2019 VA/DoD Clinical Practice Guideline for the Assessment and Management of Patients at Risk for Suicide. Available at: https://www.healthquality.va.gov/

subjective self-reports of feeling less suicidal and because there were concerns about selection bias and confounding, the strength of the evidence was categorized as very low.

There is some variation in patient preferences regarding gatekeeper training because this training requires the allocation of resources. After careful consideration, the Work Group determined that the advantages of gatekeeper training are offset by the potential drawbacks, particularly in the absence of robust evidence indicating a reduction in suicide risk through this intervention.

The Work Group systematically reviewed evidence related to this recommendation.(209) Therefore, this is a *Reviewed, Amended* recommendation. The Work Group's confidence in the quality of the evidence was very low. The body of evidence had some limitations, including selection bias and confounding.(209) The benefits of gatekeeper training were balanced with the potential harm of resource use. Patient values and preferences varied somewhat because patients are generally unaware of gatekeeper training. Thus, the Work Group made the following recommendation: There is insufficient evidence to recommend for or against standalone gatekeeper training to reduce the risk of suicide.

Recommendation

24. There is insufficient evidence to recommend for or against crisis lines to reduce suicidal ideation or the risk of suicide attempts or suicide.
    (Neither for nor against | Reviewed, New-added)

Discussion

Evidence of the effectiveness of crisis lines in preventing suicide death or attempt was not identified in the systematic evidence review. One group-randomized study provided very low–quality evidence of a reduction in suicide ideation among callers to a crisis line where the counselor used the ASIST approach instead of standard practices.(209) All study participants used a crisis line. Silent monitors rated change in suicide ideation based on their perception of the caller's mood and the caller's statements. Endorsement of some improvement in suicidal ideation was similar in both groups (84.2% with ASIST; 83.2% without). The treatment groups differed with respect to the amount of reduction, with 59.9% of calls using the ASIST protocol classified as decreasing suicidal ideation *moderately* or *a lot* versus 45.3% of calls using the standard protocol.

There is little variation in patient preferences regarding crisis lines. The patient focus group members indicated their preference for always having anonymous access to the resource and indicated that having staff with a military background fostered a sense of connection. Crisis lines are associated with substantial costs for overhead and personnel, including extensive training.

The Work Group systematically reviewed evidence related to this recommendation.(209) Therefore, this is a *Reviewed, New-added* recommendation. The Work Group's confidence in the quality of the evidence was very low. The body of

evidence had some limitations, including measurement bias and indirectness, because there was no comparison to a group unexposed to the crisis line.(209) The benefits of the crisis line balanced the potential harm, which included overhead and personnel costs. Patient values and preferences were similar because patients prefer having an anonymous resource option. Thus, the Work Group made the following recommendation: There is insufficient evidence to recommend for or against crisis lines to reduce suicidal ideation or the risk of suicide attempts or suicide.

XII. Research Priorities

During the development of the 2024 VA/DoD Suicide Risk CPG, the Work Group identified topics for additional research, including areas requiring stronger evidence to support future recommendations and efforts aimed at exploring new areas to guide forthcoming CPGs.

In general, the Work Group recommends research to advance our understanding of the following:

- Biological pathway, genetic mechanisms, social determinants of health, and environmental variables associated with suicide risk;
- Suicide risk algorithms and other suicide risk assessment and stratification strategies;
- Data from digital technology, including wearable devices, sensors, and mobile phones and text messages in risk assessment and mitigation;
- Role of family members and social supports in preventing suicide as well as evidence-based family/caregiver/couples' interventions for suicide prevention;
- Pharmacotherapy, other medical, psychotherapeutic, and other non-medical interventions for suicide prevention;
- Use of digital tools to aid self-management or as adjuncts to other types of care;
- Implementation of suicide prevention interventions as well as strategies to match patients to interventions to decrease the risk of suicide;
- Adjunctive interventions for suicide prevention, including case management and LMS counseling; and
- Community-based interventions that broadly reduce suicide risk.

Specific recommendations by topic area are as follows.

A. Screening, Assessment, and Risk Stratification
- **Integration of Big Data.** Use large datasets and advanced analytic techniques to identify patterns and predictors of suicide risk, incorporating information from

diverse sources, including patient-generated data, electronic health records, social media, and mobile apps, to identify person-level risk.

- **Machine Learning and Artificial Intelligence.** Develop and validate machine learning and AI algorithms for predicting actionable suicide risk (person-level), considering a wide range of variables and their interactions. Develop corresponding clinical tools to ensure that algorithms can be used to inform decision making at the point of care.

- **Cultural and Social Factors.** Examine the impact of cultural, societal, and environmental factors on suicide risk to tailor risk screening and assessment strategies for members of different populations and demographic groups, with a particular focus on patient preferences, including the exploration of implementing risk identification by novel means and settings.

- **Clinical Algorithms.** Develop evidence-informed clinical algorithms that assist in directing intervention to advance precision medicine approaches to suicide prevention and that seek to prevent or mitigate potential algorithmic bias.

- **Longitudinal Studies.** Conduct longitudinal studies with diverse data demographic data collection to track patients' risk over time, allowing for a better understanding of the dynamic nature of suicide risk and the factors that contribute to changes in risk over time.

- **Natural Language Processing.** Use Natural Language Processing and other tools to develop measurable concepts that can be identified through unstructured progress notes to decrease the burden on patients and providers and to assist in completing survey and interview assessments.

- **Risk Stratification.** Validate risk stratification categories and strategies.

- **Risk Screening Program:** Conduct real-world evaluation of screening programs in terms of decreasing risk for future suicidal behaviors. Determine whether risk algorithms can reduce or eliminate the need for universal risk screening.

B. Suicide Specific Interventions

Within this broad framework for research, the CPG Work Group also recommends advancing the following specific topics regarding suicide prevention interventions.

a. *Psychotherapy and Other Non-medical Interventions for Suicide Prevention:*

- **Effectiveness.** Conduct pragmatic trials to evaluate the effectiveness of different psychotherapies for reducing suicidal mortality. Specific components of psychotherapy and how they are delivered should be clearly specified to ensure replicability.

- **Long-Term Outcomes.** Evaluate the long-term effects of suicide-focused interventions to determine their impact on reducing suicidal behavior beyond the immediate treatment period.

- **Implementation Science and Equity.** Conduct research on the implementation of evidence-based interventions for reducing the risk of suicide attempt in real-world clinical settings to address barriers and to improve equitable access. This approach should include an examination of costs associated with implementation.

- **Precision Medicine Approaches.** Develop and test personalized psychotherapeutic interventions that might involve combinations of multiple interventions, and consider individual risk factors (e.g., mental/behavioral health diagnosis, trauma history, cultural factors, social determinants of health) toward advancing suicide prevention interventions. This approach could address the multiple and varied factors associated with the development of suicide risk and suicidal behavior.

- **Lethal Means Safety Counseling.** Examine the impact of provider- or peer-driven LMS counseling on individual safety behaviors (e.g., use of safe storage mechanism, removal of a weapon from home during times of crisis) and suicide outcomes.

- **Peer Support and Lived Experience.** Explore the role of peer support and individuals with lived experience in the delivery of suicide-specific interventions to enhance acceptability, treatment engagement, and effectiveness.

- **Suicide Prevention Program Effectiveness.** Determine effective components, timing, and modality (e.g., face-to-face versus video and telehealth) of the comprehensive suicide prevention program (enhancement services), including comparator studies to investigate different programmatic approaches (e.g., standard case management versus motivational interview-informed case management).

b. *Pharmacotherapy and Other Medical Interventions for Suicide Prevention*

- **Psychedelic Research.** Explore the role of psychedelic-assisted psychotherapy in the prevention of suicidal behavior. It is recommended that studies determine whether emerging therapies (e.g., methylenedioxymethamphetamine [MDMA], psilocybin) produce a sustained benefit for suicide prevention.

- **Ketamine Research.** Recommend long-term follow-up on ketamine to determine whether it prevents suicide behavior and leads to a sustained benefit.

- **Potential Transdiagnostic Benefits of Pharmacologic Treatments.** Continue to examine whether certain pharmacologic treatments might have suicide prevention benefits beyond their immediate treatment symptom targets.

C. Psychiatric Hospitalization and Post-Acute Care

- **Psychiatric Hospitalization.** Develop Clinical Decision Support tools to help providers make decisions about when to hospitalize a patient at risk for suicide.

- **Alternatives to Psychiatric Hospitalization.** Evaluate the effectiveness of different interventions, such as crisis stabilization units, partial hospitalization programs, and intensive outpatient treatment in reducing suicidal behavior and decreasing the need for inpatient hospitalization.

- **Post-Psychiatric Hospitalization.** Explore the role of in-person and virtual strategies to engage patients in care post-psychiatric hospitalization.

D. Technology-Based Modalities

- **Technology and Digital Platforms.** Examine the use of digital platforms and mobile apps to enhance the delivery and accessibility of suicide-focused evidence-based and informed interventions (e.g., CBT for suicide prevention).

- **Ecological Momentary Assessment and Ecological Momentary Intervention.** Determine whether ecological momentary assessment and ecological momentary intervention improve important suicide prevention outcomes including suicide death and attempts.

E. Community-Based Interventions

Most Veterans who die by suicide are not receiving VA care, thus the need for community-based suicide prevention interventions. There continues to be limited evidence for other public health and community-based interventions, including gatekeeper training, targeted media campaigns, and 24/7 crisis lines. More research is needed on these programs' effects on suicide rates, particularly those tailored to Service member and Veteran populations. Given that many of these programs and interventions are delivered concurrently as part of a multifaceted suicide prevention approach, research in this area requires careful methodological approaches to examine the potential synergistic effects of combining multiple strategies. Research is also needed to understand the impact of universal or selective application of specific LMS interventions (e.g., blister packaging medication, distribution of gun locks, other safe storage mechanisms) on suicide attempts and death by suicide.

The following areas were identified as priorities for future research for community-based interventions:

- **Lethal Means Safety.** Conduct research to determine the effectiveness of community-based interventions designed to promote firearm LMS, including distribution of storage devices and public service announcements.

- **Crisis Line.** Conduct a broad evaluation of 988 to identify the amount of change in suicide and suicide attempt risk that can be attributed to the program.

- **Gatekeeper Training.** Conduct a broad evaluation of gatekeeper training and tailored education programs (e.g., VA S.A.V.E. [Signs, Ask, Validate, Encourage] Training, ASIST, and Question, Persuade, and Refer [QPR]) and public health campaigns (including social media campaigns) to determine whether these community-based, educational interventions lead to a reduction in suicide deaths or attempts.

- **Multifaceted Approaches.** Make further efforts to explore the impact of specific components of multifaceted approaches.

Appendix A: Guideline Development Methodology

A. Developing Key Questions to Guide the Systematic Evidence Review

To guide this CPG's systematic evidence review, the Work Group drafted 12 KQs on clinical topics of the highest priority for the VA and DoD populations. The KQs followed the population, intervention, comparison, outcome, timing, and setting (PICOTS) framework, as established by the Agency for Healthcare Research and Quality (AHRQ). Table A-1 lists and describes the PICOTS elements.

Table A-1. PICOTS (210)

PICOTS Element	Description
Population or Patients	Patients of interest. It includes the condition or conditions, populations or sub-populations, disease severity or stage, co-occurring conditions and other patient characteristics or demographics.
Intervention or Exposure	Treatment (e.g., drug, surgery, lifestyle changes), approach (e.g., doses, frequency, methods of administering treatments), or diagnostic or screening test or both used with the patient or population.
Comparator	Treatment or treatments (e.g., placebo, different drugs) or approach or approaches (e.g., different dose, different frequency, standard of care) being compared with the intervention or exposure of interest described above.
Outcomes	Results of interest (e.g., mortality, morbidity, QoL, complications). Outcomes can include short, intermediate, and long-term outcomes.
Timing, if Applicable	Duration or follow-up of interest for the particular patient intervention and outcome to occur (or not occur).
Setting, if Applicable	Setting or context of interest. Setting can be a location (e.g., primary, specialty, inpatient care) or a type of practice.

Abbreviation: PICOTS: population, intervention, comparison, outcome, timing and setting; QoL: quality of life

Because of resource constraints, all KQs of interest to the Work Group could not be included in the systematic evidence review. Thus, the Work Group selected the 12 highest priority KQs for inclusion (see Table A-2).

Using the GRADE approach, the Work Group rated each outcome on a 1-9 scale (7-9, critical for decision making; 4-6, important, but not critical, for decision making; and 1-3, of limited importance for decision making). Critical and important outcomes were included in the evidence review (see Outcomes); however, only critical outcomes were used to determine the overall quality of evidence (see Determining Recommendation Strength and Direction).

a. Populations

The KQs are specific to adults 18 years or older who may be at risk of suicide.

b. Interventions and Comparators

KQs	Interventions	Comparators
1	Suicide risk clinical screening programs, including: • Universal screening • One step screening (suicide only) • Indicated or selective clinical screening • Two-step clinical screening (suicide and depression) • Predictive modeling facilitating screening • Kaiser intervention • Reach Vet	No clinical screening for suicide risk
2	Validated screening tools that include items related to suicide or wish to die, examples include: • Patient Health Questionnaire-9 (PHQ-9) • Columbia Suicide Severity Rating Scale (C-SSRS) • Assessment of 5-step Evaluation and Triage (SAFE-T) • Computer adaptive testing • Ask Suicide Screening Questions (ASQ)	Validated reference standard (e.g., established suicide screening instrument)
3	Individuals with addressable and non-addressable factors, including: • Acute physiologic stressors (e.g., sleep deprivation) • Chronic physical health conditions • Demographic factors (e.g., sexual orientation, or sex identity, race, age, income, housing) • Transition from DoD to VA care • Social connectedness/isolation/ostracism to include presence/absence of unit cohesion/community support • Resilience • Care engagement • Responsibility for others • Faith beliefs and/or participation in a faith community • Social determinants of health (Healthy People definition)	Individuals without the factors
4	Methods aimed at stratifying risk of suicide behavior and suicide, including: • Columbia Suicide Severity Rating Scale (C-SSRS) • Phoenix – collection of tools • REACH VET • Unstructured clinical assessments • Predictive analytics tools – prior clinical data • Longitudinal assessment (e.g., pre-assessment through lifecycle of service to transition/post-separation to Veteran status) of suicide risk/attempts/death	No stratification or usual care; alternative risk stratification approach; electronic health record (EHR) data and predictive modeling; structured assessment tools

KQs	Interventions	Comparators
5	Psychotherapy interventions, including: • Cognitive behavioral therapy (CBT) • Dialectical behavior therapy (DBT) • CBT for suicide prevention (CBT-SP) • Problem-solving therapy (PST) • Collaborative assessment and management of suicidality (CAMS) • Mindfulness (e.g., mindfulness-based CBT, mindfulness-based stress reduction therapy) • Brief CBT (BCBT) • Acceptance and commitment therapy (ACT) • Attempted Suicide Short Intervention Program (ASSIP) • Anxiety sensitivity therapy • Behavioral activation • Brief teachable moment therapy, interoceptive therapy	No intervention (e.g., waitlist)
6	Psychotherapy interventions, including: • Cognitive behavioral therapy (CBT) • Dialectical behavior therapy (DBT) • CBT for suicide prevention (CBT-SP) • Problem-solving therapy (PST) • Collaborative assessment and management of suicidality (CAMS) • Mindfulness (e.g., mindfulness-based CBT, mindfulness-based stress reduction therapy) • Brief CBT (BCBT) • Acceptance and commitment therapy (ACT) • Attempted Suicide Short Intervention Program (ASSIP) • Anxiety sensitivity therapy • Behavioral activation • Brief teachable moment therapy, interoceptive therapy	Another psychotherapy from the same list

KQs	Interventions	Comparators
7	Suicide prevention enhanced care strategies, including: • Home visits • Coping skills training • Caring contacts • Care environment changes • Safety planning • Crisis response planning • Restriction of lethal means/lethal means safety counseling • Brief suicide risk behavioral interventions (World Health Organization brief intervention and contact (WHO-BIC)) • Neurostimulation (repetitive transcranial magnetic stimulation (rTMS), deep brain stimulation (DBS), electroconvulsive therapy (ECT), Alpha-Stim) • World Health Organization Brief Intervention and Contact to prevent suicide (WHO-BIC) • Care management • Care coordination/collaborative care models • Substance use-specific treatment • Intensive mental/behavioral health intensive case management • VA high-risk flag program • Other provider training	No intervention (e.g., waitlist)
8	Pharmacological interventions, including: • Anti-depressants/anxiety medications • Lithium • Antipsychotics • Ketamine/esketamine • Naloxone • Psychedelics • Cannabis	Placebo or no treatment
9	Pharmacological interventions, including: • Anti-depressants/anxiety medications • Lithium • Antipsychotics • Ketamine/esketamine • Naloxone • Psychedelics • Cannabis	Another listed pharmacological intervention
10	A pharmacological intervention (listed in KQ 8) in combination with a psychotherapy intervention (listed in KQ 5) or enhanced care strategy (listed in KQ 7).	Pharmacological intervention alone; sychotherapy/behaviorally based intervention alone

KQs	Interventions	Comparators
11	Technology-based interventions, including: • Telehealth/telemedicine interventions (videoconference, telephone, computer-based) • Web-based interventions • Apps	Care without the use of technology-based interventions
12	Community-based interventions, examples include: • Peer to peer programs • Family, caregiver, and patient education programs • Crisis lines • Safe messaging • Stigma reduction programs • Gatekeeper training (increased awareness, ability to identify warning signs, suicide prevention competencies)	Usual clinical care or no community-based interventions

c. Outcomes

KQ(s)	Critical Outcomes	Important Outcomes
1, 12	• Suicide deaths • Suicide attempts	• Health system utilization/hospital readmission (post-discharge treatment engagement, treatment engagement/withdrawal) • Harms (adverse events) • Help seeking behavior (e.g., contact with Crisis Line) • Other suicide-related behavior (including suicidal ideation [with or without hospitalization]) • Cost/benefit
2	• Suicide deaths • Suicide attempts • Positive predictive value • Negative predictive value • Sensitivity • Specificity	• Suicidal ideation (with or without hospitalization)
3	• Suicide deaths • Suicide attempts	• Other suicide-related behavior (including suicidal ideation [with or without hospitalization]) • Health system utilization/hospital readmission (post-discharge treatment engagement, treatment engagement/withdrawal) • Help seeking behavior (e.g., contact with Crisis Line)

KQ(s)	Critical Outcomes	Important Outcomes
4	• Suicide deaths • Suicide attempts	• Other suicide-related behavior (including suicidal ideation [with or without hospitalization]) • Harms (adverse effects) • Health system utilization/hospital readmission (post-discharge treatment engagement, treatment engagement/withdrawal) • Quality of life (including health status)
5, 6, 7, 8, 9, 10, 11	• Suicide deaths • Suicide attempts	• Harms (adverse effects) • Quality of life (including health status) • Other suicide-related behavior (including suicidal ideation [with or without hospitalization]) • Functional status • Health system utilization/hospital readmission (post-discharge treatment engagement, treatment engagement/withdrawal)

B. Conducting the Systematic Review

Based on the Work Group's decisions regarding the CPG's scope, KQs, and PICOTS statements, the Lewin Team produced a systematic evidence review protocol before conducting the review. The protocol detailed the KQs, PICOTS criteria, methodology to be used during the systematic evidence review, and the inclusion and exclusion criteria to be applied to each potential study, including study type and sample size. The Work Group reviewed and approved the protocol.

Figure A-1 below outlines the systematic evidence review's screening process (see also the General Criteria for Inclusion in Systematic Review). In addition, Table A-2 indicates the number of studies that addressed each of the questions.

Figure A-1. Study Flow Diagram

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┌─────────────────────────┐      ┌──────────────────────────────────────────┐
│ 8,300 Citations         │      │ 372 Duplicates Removed                     │
│ Identified by Searches  │─────▶│ 2,892 Excluded at the Title Level          │
└─────────────────────────┘      │ Excluded citations were off-topic, not     │
             │                    │ published in English, or published prior   │
             ▼                    │ to inclusion date.                         │
                                  └──────────────────────────────────────────┘

      ◇ 5,036 Abstracts          ┌──────────────────────────────────────────┐
        Reviewed         ───────▶│ 3,857 Citations Excluded at the Abstract   │
                                  │ Level                                      │
             │                    │ Citations excluded were unlikely to meet   │
             ▼                    │ study design criteria, had less than 10    │
                                  │ patients/arm, were not a full-length SR or │
                                  │ study, were completely off topic.          │
                                  └──────────────────────────────────────────┘
```

721 Citations Excluded at 1st Pass Full-Article Level
158 no outcomes of interest
121 no intervention/comparison of interest
116 study did not meet study design criteria
69 not a full-length SR or clinical study
54 fewer than 10 patients/arm
39 population not of interest
37 relevant review with no data to extract
36 not conducted in "very high" HDI country
34 SR with no risk of bias assessment
9 study included in SR
9 old publication date/SR search date
9 completely off topic
7 individual trial addressing KQ3
4 fewer than 85% of patients who meet population criteria
1 does not meet minimum follow-up
18 other

◇ 1,179 Full-Length Articles Reviewed

339 Citations Excluded at 2nd Pass Full-Article Level
80 not an intervention or comparator of interest
55 not a population of interest
42 not an outcome of interest
40 relevant SR or study with no usable data
23 superseded by more recent/comprehensive review
23 included in an existing review
8 sample size too small
68 other

◇ 458 Articles Reviewed

119 included studies

Abbreviations: KQ: key question; HDI: human development index; SR: systematic review

Alternative Text Description of Study Flow Diagram

Figure A-1. Study Flow Diagram is a flow chart with nine labeled boxes linked by arrows that describe the literature review inclusion-exclusion process. Arrows point down to boxes that describe the next literature review step and arrows point right to boxes that describe the excluded citations at each step (including the reasons for exclusion and the numbers of excluded citations).

1. Box 1: 8,300 citations identified by searches.
    a. Right to Box 2: 372 duplicates removed. 2,892 excluded at the title level. Excluded citations were off-topic, not published in English, or published prior to inclusion date.
    b. Down to Box 3.
2. Box 3: 5,036 abstracts reviewed.
    a. Right to Box 4: 3,857 citations excluded at the abstract level. Citations excluded were unlikely to meet study design criteria, had less than 10 patients/arm, were not a full-length SR or study, were completely off topic.
    b. Down to Box 5.
3. Box 5: 1,179 full-length articles reviewed.
    a. Right to Box 6: 721 citations excluded at 1st pass full-article level.
        i. 158 no outcomes of interest.
        ii. 121 no interventions/comparison of interest.
        iii. 116 study did not meet study design criteria.
        iv. 69 not a full-length SR or clinical study.
        v. 54 fewer than 10 patients/arm.
        vi. 39 population not of interest.
        vii. 37 relevant review with no data to extract.
        viii. 36 not conducted in "very high" HDI country.
        ix. 34 SR with no risk of bias assessment.
        x. 9 study included in SR.
        xi. 9 old publication date/SR search date.
        xii. 9 completely off topic.
        xiii. 7 individual trial addressing KQ3.
        xiv. 4 fewer than 85% of patients who meet population criteria.
        xv. 1 does not meet minimum follow-up.
        xvi. 18 other.

b. Down to Box 7.

4. Box 7: 458 articles reviewed.

    a. Right to Box 8: 339 citations excluded at 2nd pass full-article level.

        i. 80 not an intervention or comparator of interest.

        ii. 55 not a population of interest.

        iii. 42 not an outcome of interest.

        iv. 40 relevant SR or study with no usable data.

        v. 23 superseded by more recent/comprehensive review.

        vi. 2 included in an existing review.

        vii. 8 sample size too small.

        viii. 68 other.

    b. Down to Box 9.

5. Box 9: 119 included studies.

Table A-2. Evidence Base for KQs

KQ Number	KQ	Number and Study Type
KQ1	In adults, do clinical screening programs to detect suicide risk improve outcomes?	RCT: 1 Cohort studies: 7
KQ2	In adults, what is the validity of screening instruments used in the health care setting to screen for suicide risk?	SRs: 2 Observational studies: 19
KQ3	In adults at risk for suicide, what factors are associated with suicidal behavior?	SRs: 11 Cohort/case control studies: 10
KQ4	What methods are effective in clinical settings to stratify the risk of suicide behavior and suicide?	Observational studies: 2
KQ5	For adults at risk for suicide, what psychotherapies improve outcomes?	SRs: 4 RCTs: 10
KQ6	For adults at risk of suicide, what is the comparative effectiveness of psychotherapies for improving outcomes?	RCTs: 4
KQ7	For adults at risk for suicide, what suicide prevention enhanced care strategies improve outcomes?	SR: 1 RCTs: 7
KQ8	For adults at risk for suicide, what is the effectiveness of pharmacological interventions for improving outcomes?	SRs: 5 RCTs: 3
KQ9	For adults at risk for suicide, what is the comparative effectiveness of pharmacological interventions for improving outcomes?	SRs: 2

KQ Number	KQ	Number and Study Type
KQ10	For adults at risk for suicide, what is the effectiveness of pharmacological interventions combined with a psychotherapy or suicide prevention enhanced care strategy for improving outcomes?	RCT: 1
KQ11	In adults at risk of suicide, what is the effectiveness of technology-based interventions (video telehealth, telephone-based, apps, web-based interventions) compared to care without the use of technology-based interventions?	SRs: 3 RCTs: 5
KQ12	What is the effectiveness of community-based interventions to support either individual-level risk or to support population level risk reduction, or both?	SR: 1 RCTs: 5 Cohort trials: 16
	Total Evidence Base	**119 studies**

Abbreviations: KQ: key question; RCT: randomized controlled trial; SR: systematic review

a. *General Criteria for Inclusion in Systematic Evidence Review*

- Clinical studies or SRs published on or after April 1, 2018, to March 15, 2023. If multiple systematic reviews addressed a key question, we selected the most recent and/or comprehensive review. Systematic reviews were supplemented with clinical studies published after the systematic review.

- Studies must have been published in English.

- Publication must have been a full clinical study or systematic review; abstracts alone were not included. Similarly, letters, editorials, and other publications that are not full-length clinical studies were not accepted as evidence.

- Systematic reviews must have searched MEDLINE or EMBASE for eligible publications, performed a risk of bias assessment of included studies, and assessed the quality of evidence using a recognizable rating system, such as GRADE or something compatible (e.g., the one used by the Evidence-based Practice Centers of the AHRQ). If an existing review did not assess the overall quality of the evidence, evidence from the review must have been reported in a manner that allowed us to use the GRADE approach to judge the overall risk of bias, consistency, directness, and precision of evidence. We did not use an existing review as evidence if we were not able to assess the overall quality of the evidence in the review.

- Intervention studies assessed pharmacologic or non-pharmacologic treatment, care management approach, or community-based interventions and were a prospective, RCT with an independent control group. Crossover trials were not included.

- Study must have enrolled at least 20 patients (10 per study group) unless otherwise noted (see Key Question Specific Criteria for Inclusion in Systematic Evidence Review below)

- Study must have enrolled at least 85% of patients who meet the study population criteria: adults aged 18 years or older who might be at risk of suicide.

- Study must have reported on at least one outcome of interest.

b. Key Question Specific Criteria for Inclusion in Systematic Evidence Review

- KQ 1, systematic reviews or best evidence studies that evaluated the efficacy of different screening programs.

- For KQ 2, systematic reviews of acceptable study designs and studies that prospectively compared a suicide screening instrument to a valid reference standard (an established suicide screening instrument) and reported on the diagnostic characteristics of the screening instrument (e.g., sensitivity, specificity, repeatability).

- For KQ 3, due to the volume of studies that were being screened at the abstract level that address key question, the Work Group agreed to only include systematic reviews. In the case that the systematic reviews do not adequately cover listed risk factors, we considered bringing in individual comparative observational studies to provide evidence for those risk factors. Included systematic reviews or large observational trials (>10,000) that focused on physical health conditions or social determinants of health as risk factors. Excluded systematic reviews or studies that looked at risk factors within specific populations (or subpopulations), except for deployed military populations (wartime cohorts, etc.). Considered studies of military/Veteran populations with fewer than 10,000 participants if the study considered a unique risk factor.

- For KQ 4, systematic reviews or best evidence studies that evaluated the use of the following examples to stratify patients according to risk of suicide: suicide risk screening instruments, structured or unstructured clinical assessment, or predictive analytic tools. Excluded cross-sectional studies and SRs of primarily cross-sectional studies (studies without an independent control group).

- For KQs 5-11, systematic reviews of acceptable study designs and randomized controlled trials.

- For KQ 12, large cohort trials (sample: 500+) for lethal means restriction (searches particularly as it pertains to gun safety, gun diversion, etc.) Targeted search for the following interventions and systematic reviews for additional evidence that met all other inclusion criteria of the systematic evidence review:
    - Restriction of lethal means (Zalsman et al. [2016])

- ◆ Gatekeeper training (Zalsman et al. [2016], Isaac et al. [2009], Mann et al. [2005], Matthieu et al. [2008])
- ◆ Crisis line management (Hoffberg et al. [2019])
- ◆ Multidimensional community-based program (Knox et al. [2003], Collings et al. [2018], Hegerl et al. [2008])
- ◆ Safe messaging (Zalsman et al. [2016], Mann et al. [2005])

c. *Literature Search Strategy*

Information regarding the bibliographic databases, date limits, and platform, provider, or both can be found in Table A-3. See Appendix G for additional information on the search strategies, including topic-specific search terms and search strategies.

Table A-3. Bibliographic Database Information

Name		Date Limits	Platform/Provider
Bibliographic Databases	Embase (Excerpta Medica)	April 1, 2018, through March 15, 2023	Elsevier
	MEDLINE	April 1, 2018, through March 15, 2023	OVID
	PubMed (In-process, Publisher, and PubMedNotMedline records)	March 15, 2022, through March 15, 2023	National Library of Medicine (NLM)
	PsycInfo	April 1, 2018, through March 15, 2023	OVID
	PTSDpubs	April 1, 2018, through March 15, 2023	ProQuest
Grey Literature	Agency for Healthcare Research and Quality (AHRQ)	April 1, 2018, through March 15, 2023	AHRQ
	U.S. Department of Veterans Affairs (VA) Evidence Synthesis Program	April 1, 2018, through March 15, 2023	VA

d. *Rating the Quality of Individual Studies and the Body of Evidence*

The Lewin Team assessed the methodological risk of bias of individual diagnostic, observational, and interventional studies using the U.S. Preventive Services Task Force (USPSTF) method. Each study is assigned a rating of *Good*, *Fair*, or *Poor* based on a set of criteria that vary depending on study design. Detailed lists of criteria and definitions appear in Appendix VI of the USPSTF procedure manual.([211])

Next, the Lewin Team assessed the overall quality of the body of evidence for each critical and important outcome using the GRADE approach. This approach considers the following factors: overall study quality (or overall risk of bias or study limitations), consistency of evidence, directness of evidence, and precision of evidence. The overall quality of the body of evidence is rated as *High*, *Moderate*, *Low*, and *Very Low*.

C.   Developing Evidence-Based Recommendations

In consultation with the VA Office of Quality and Patient Safety and the Clinical Quality Improvement Program, DHA, the Lewin Team convened a four-day in-person recommendation development meeting from August 14–17, to develop this CPG's evidence-based recommendations. Two weeks before the meeting, the Lewin Team finalized the systematic evidence review and distributed the report to the Work Group; findings were also presented during the recommendation development meeting.

Led by the Champions, the Work Group interpreted the systematic evidence review's findings and developed this CPG's recommendations. The strength and direction of each recommendation were determined by assessing the quality of the overall evidence base, the associated benefits and harms, patient values and preferences, and other implications (see Determining Recommendation Strength and Direction).

a. Determining Recommendation Strength and Direction

Per GRADE, each recommendation's strength and direction is determined by the following four domains.[20] Information on each domain, questions to consider, and the resulting judgment can be found in Table A-4.

1. Confidence in the Quality of the Evidence

Confidence in the quality of the evidence reflects the quality of the body of evidence supporting a recommendation (see Rating the Quality of Individual Studies and the Body of Evidence). The options for this domain include *High*, *Moderate*, *Low*, or *Very Low*. These four ratings are a direct reflection of the GRADE ratings for each relevant critical outcome in the evidence review (see Outcomes). Per GRADE, if the quality of evidence differs across the relevant critical outcomes, the lowest quality of evidence for any of the critical outcomes determines the overall quality of the evidence for a recommendation.[2, 22]

The recommendation strength generally aligns with the confidence in the quality of evidence. For example, *Strong* recommendations are typically supported by *High* or *Moderate* quality evidence. However, GRADE permits *Low* or *Very Low* quality evidence to support a *Strong* recommendation in certain instances (e.g., life-threatening situation).[20]

2. Balance of Desirable and Undesirable Outcomes

The balance of desirable and undesirable outcomes (i.e., benefits and harms) refers to the relative magnitudes or tradeoffs of anticipated benefits (e.g., increased longevity, reduced morbidity, improved QoL, decreased resource use) and harms (e.g., decreased longevity, increased complications, impaired QoL). The options for this domain include *benefits outweigh harms/burdens*, *benefits slightly outweigh harms/burdens*, *benefits and harms/burdens are balanced*, *harms/burdens slightly outweigh benefits*, and *harms/burdens outweigh benefits*. This domain assumes most providers will offer

patients an intervention if its advantages exceed the harms. The Work Group's understanding of the benefits and harms associated with the recommendation influenced the recommendation's strength and direction.

3. Patient Values and Preferences

Patient values and preferences is an overarching term that includes patients' perspectives, beliefs, expectations, and goals for health and life as they might apply to the intervention's potential benefits, harms, costs, limitations, and inconvenience. The options for this domain include *similar values*, *some variation*, and *large variation*. For instance, there might be *some variation* in patient values and preferences for a recommendation on the use of acupuncture because some patients might dislike needles. When patient values seem homogeneous, this domain might increase the recommendation's strength. Alternatively, when patient values seem heterogeneous, this domain might decrease a recommendation's strength. As part of this domain, the Work Group considered the findings from the patient focus group carried out as part of this CPG update (see Appendix B).

4. Other Implications

Other implications encompass the potential consequences or other impacts that might affect the strength or direction of the recommendation. The options for this domain, for example, include resource use, equity, acceptability, feasibility, and subgroup considerations. The following are example implications related to equity and subgroup considerations, respectively: some of the indicated population might be geographically remote from an intervention (e.g., complex radiological equipment); a drug might be contraindicated in a subgroup of patients.

Table A-4. GRADE Evidence to Recommendation Framework

Decision Domain	Questions to Consider	Judgment
Confidence in the quality of the evidence	• Among the designated critical outcomes, what is the lowest quality of relevant evidence? • How likely is further research to change the confidence in the estimate of effect?	• High • Moderate • Low • Very Low
Balance of desirable and undesirable outcomes	• What is the magnitude of the anticipated desirable outcomes? • What is the magnitude of the anticipated undesirable outcomes? • Given the best estimate of typical values and preferences, are you confident that benefits outweigh harms/burdens or vice versa?	• Benefits outweigh harms/ burdens • Benefits slightly outweigh harms/burdens • Benefits and harms/ burdens are balanced • Harms/burdens slightly outweigh benefits • Harms/burdens outweigh benefits

Decision Domain	Questions to Consider	Judgment
Patient values and preferences	• What are the patients' values and preferences? • Are values and preferences similar across the target population? • Are you confident about typical values and preferences?	• Similar values • Some variation • Large variation
Other implications (e.g., resource use, equity, acceptability, feasibility, subgroup considerations)	• What are the costs per resource unit? • Is this intervention generally available? • What is the variability in resource requirements across the target population and settings? • Are the resources worth the expected net benefit from the recommendation? • Is this intervention and its effects worth withdrawing or not allocating resources from other interventions?	Various considerations

b. Recommendation Categorization

A summary of the recommendation categories and definitions is available in Table 3.

1. Categorizing Recommendations with an Updated Review of the Evidence

Reviewed refers to recommendations on topics included in this CPG's systematic evidence review. *Reviewed*, *New-added* recommendations are original, new recommendations (i.e., not included in the previous CPG). These recommendations are based entirely on evidence included in the current CPG's systematic evidence review.

Reviewed, *New-replaced* recommendations were in the previous CPG but revised based on the updated evidence review. These recommendations may have clinically relevant edits. *Reviewed*, *Not changed* recommendations were carried forward from the previous CPG unchanged. *Reviewed*, *Amended* recommendations were carried forward from the previous CPG with a nominal change. This allowed for the recommendation language to reflect GRADE approach and any other not clinically meaningful edits deemed necessary. These recommendations can be based on a combination of evidence included in the current CPG's systematic evidence review and the evidence base that supported the recommendation in the previous CPG.

Reviewed, *Deleted* refers to recommendations from the previous CPG that were deleted after a review of the evidence. This may occur if the evidence supporting the recommendation is outdated (e.g., there is no longer a basis to recommend use of an intervention and/or new evidence suggests a shift in care), rendering the recommendation obsolete.

2. Categorizing Recommendations without an Updated Review of the Evidence

There were also cases in which it was necessary to carry forward recommendations from the previous CPG without an updated review of the evidence. Given time and resource constraints, the systematic evidence review carried out for this CPG update could not cover all available evidence on headache; therefore, its KQs focused on new or updated research or areas not covered in the previous CPG.

For areas in which the relevant evidence was not changed and for which recommendations made in the previous CPG were still relevant, recommendations could have been carried forward to the updated CPG without an updated review of the evidence. The evidence supporting these recommendations was thus also carried forward from the previous CPG. These recommendations were categorized as *Not reviewed*. If evidence had not been reviewed, recommendations could have been categorized as *Not changed*, *Amended*, or *Deleted*. *Not reviewed*, *Not changed* recommendations were carried forward from the previous CPG unchanged. *Not reviewed*, *Amended* recommendations were carried forward from the previous CPG with a nominal change. *Not reviewed*, *Deleted* recommendations were determined by the Work Group to not be relevant. A recommendation may not be relevant if it, for example, pertained to a topic (e.g., population, care setting, treatment) outside of the updated CPG's scope or if it was determined to be common practice.

The recommendation categories for the current CPG are noted in the Recommendations. The recommendation categories from the 2019 VA/DoD Suicide Risk CPG are noted in Appendix E.

D.   Drafting and Finalizing the Guideline

The Work Group wrote, reviewed, and edited three drafts of the CPG using an iterative review process to solicit feedback on and make revisions to the CPG. The first and second drafts were posted online for 20 and 14 business days, respectively, for the Work Group to provide feedback. Draft 3 was made available for a 14-day peer review and comment (see External Peer Review). The Work Group reviewed all feedback submitted during each review period and made appropriate revisions to the CPG. Following the Draft 3 review and comment period, the Work Group reviewed external feedback and created a final draft of the CPG. The Champions then presented the CPG to the VA/DoD EBPWG for approval. The Work Group considered the VA/DoD EBPWG's feedback and revised the CPG, as appropriate, to create the final version. To accompany the CPG, the Work Group produced toolkit products, including a provider summary, pocket card. and patient summary. The VA/DoD EBPWG approved the final CPG and toolkit products in April 2024.

Appendix B: Patient Focus Group Methods and Findings

A. Methods

Members of the Suicide Prevention Research Impact Network Veteran Engagement Council (SPRINT VEC) patient engagement group were invited to share their perspectives on suicide risk care in the VA or DoD health care system or both. This preexisting group (n=16), which has regular meetings, comprised patients, caregivers, researchers, and providers. Participant groups were not mutually exclusive (i.e., a participant could have been a provider and a patient). Of the 16 participants, 15 were Veterans, 11 identified as patients or patients and providers, 1 identified as a caregiver, and 4 identified as a researcher or advocate. Of the 11 patients or patients and providers, 1 was a woman and 10 were men. All patients described receiving care in the VA system, some or all of whom also described their experiences receiving care in the DoD system. Participants were not considered to be a representative sample of VA and DoD patients with suicide risk. However, the patient engagement group brought diverse perspectives likely to be relevant and informative in the guideline development process.

B. Patient Focus Group Findings

a. *Participants noted the importance of continuity of care and the desire for consistent care options across treatment facilities.*

- Participants noted that provider turnover affected continuity of care.
- Participants indicated that variation in care (e.g., access, quality) often depends on where (e.g., geographical location, setting) a patient receives care.

b. *Participants value coordination of care among their health care providers. They prefer collaborative care models of health care that integrate their treatment based on their individual goals.*

- Participants emphasized the need for coordinated care between their primary care providers and specialists.
- Participants prefer face-to-face conversations and frequent engagement with their providers.
- Participants value collaborative treatment planning with their providers.

c. *Participants expressed a desire for a wider range of effective treatment options (including a wider range of psychotherapies, pharmacotherapies, and VA's Whole Health program).*

- Participants emphasized the importance of providing alternatives to CBT.
- Participants stated that some medications (e.g., antidepressants, psychotropics, pain medication) increased their suicidality.
- Participants noted that a holistic approach to health (e.g., VA's Whole Health program) helps them focus on recovery and gives them a sense of purpose.

d. Participants emphasized the importance of peer-support and therapy groups because they increase opportunities for social interaction and sharing of lessons learned and they have positive health and social benefits.

- Participants noted that group therapy and support groups offer activities, social connection, and community that provide them with a mission and a purpose.

e. Participants emphasized the importance of including family and caregivers in treatment planning and progress assessments.

- Participants emphasized that caregivers could offer providers a greater understanding of a patient's condition and can support their treatment journey.

f. Other Considerations

- Participants expressed their dislike for screening.

- Participants noted the need for more culturally competent care and diversity of providers.

- Participants noted the value of community-based programs and the Governor's Challenge.

Appendix C: Self-Directed Violence Classification System

Type	Sub-Type	Definition	Modifiers	Terms
Thoughts	*Non-suicidal Self-Directed Violence Ideation*	Self-reported thoughts regarding a person's desire to engage in self-inflicted potentially injurious behavior There is no evidence of suicidal intent. For example, persons engage in Non-suicidal SDV Ideation to attain some other end (e.g., to seek help, regulate negative mood, punish others, receive attention).	NA	• Non-suicidal SDV Ideation
	Suicidal Ideation	Thoughts of engaging in suicide-related behavior For example, intrusive thoughts of suicide without the wish to die would be classified as Suicidal Ideation, without Intent.	**Suicidal Intent** • Without • Undetermined • With	• Suicidal Ideation, without Suicidal Intent • Suicidal Ideation, with Undetermined Suicidal Intent • Suicidal Ideation, with Suicidal Intent
Behaviors	*Preparatory*	Acts or preparation toward engaging in SDV but before potential for injury has begun Preparation can include anything beyond a verbalization or thought, such as assembling a method (e.g., buying a gun, collecting pills) or preparing for one's death by suicide (e.g., writing a suicide note, giving things away). For example, hoarding medication for the purpose of overdosing would be classified as Suicidal SDV, Preparatory.	**Suicidal Intent** • Without • Undetermined • With	• Non-suicidal SDV, Preparatory • Undetermined SDV, Preparatory • Suicidal SDV, Preparatory
	Non-suicidal Self-Directed Violence	Behavior that is self-directed and deliberately results in injury or the potential for injury to oneself There is no evidence, whether implicit or explicit, of suicidal intent. For example, persons engage in Non-suicidal SDV to attain some other end (e.g., to seek help, regulate negative mood, punish others, receive attention).	**Injury** • Without • With • Fatal Interrupted by Self or Other	• Non-suicidal SDV, without Injury • Non-suicidal SDV, without Injury, Interrupted by Self or Other • Non-suicidal SDV, with Injury • Non-suicidal SDV, with Injury, Interrupted by Self or Other • Non-suicidal SDV, Fatal

Type	Sub-Type	Definition	Modifiers	Terms
Behaviors (cont.)	*Undetermined Self-Directed Violence*	Behavior that is self-directed and deliberately results in injury or the potential for injury to oneself Suicidal intent is unclear based on the available evidence. For example, the person is unable to admit positively to the intent to die (e.g., unconsciousness, incapacitation, intoxication, acute psychosis, disorientation, death); or the person is reluctant to admit positively to the intent to die for other or unknown reasons.	**Injury** • Without • With • Fatal Interrupted by Self or Other	• Undetermined SDV, without Injury • Undetermined SDV, without Injury, Interrupted by Self or Other • Undetermined SDV, with Injury • Undetermined SDV, with Injury, Interrupted by Self or Other • Undetermined SDV, Fatal
	Suicidal Self-Directed Violence	Behavior that is self-directed and deliberately results in injury or the potential for injury to oneself There is evidence, whether implicit or explicit, of suicidal intent. For example, a person with the wish to die cutting her wrists with a knife would be classified as Suicide Attempt, with Injury.	**Injury** • Without • With • Fatal Interrupted by Self or Other	• Suicide Attempt, without Injury • Suicide Attempt, without Injury, Interrupted by Self or Other • Suicide Attempt, with Injury • Suicide Attempt, with Injury, Interrupted by Self or Other • Suicide

Abbreviations: SDV: self-directed violence

Source: Rocky Mountain MIRECC; developed in collaboration with the CDC. Available at:
https://www.mirecc.va.gov/visn19/clinical/nomenclature.asp

Key Terms
• *SDV:* Behavior that is self-directed and deliberately results in injury or the potential for injury to oneself.
• *Suicidal Intent:* There is past or present evidence (implicit or explicit) that an individual wishes to die, means to kill oneself, and understands the probable consequences of his/her/their actions or potential actions. Suicidal intent can be determined retrospectively and in the absence of suicidal behavior.
• *Physical Injury:* A (suspected) bodily lesion resulting from acute overexposure to energy (this can be mechanical, thermal, electrical, chemical, or radiant) interacting with the body in amounts or rates that exceed the threshold of physiological tolerance. In some cases, an injury results from an insufficiency of vital elements, such as oxygen. Acute poisonings and toxic effects, including overdoses of substances and wrong substances given or taken in error are included, as are adverse effects and complications of therapeutic surgical and medical care. Psychological injury is excluded in this context.
• *Interrupted by Self or Other:* A person takes steps to injure self but is stopped by self/another person before fatal injury. The interruption might occur at any point.
• *Suicide Attempt:* A non-fatal self-inflicted potentially injurious behavior with any intent to die as a result of the behavior.
• *Suicide:* Death caused by self-inflicted injurious behavior with any intent to die as a result of the behavior.

Abbreviations: SDV: self-directed violence

Source: Rocky Mountain MIRECC; developed in collaboration with the CDC. Available at:
https://www.mirecc.va.gov/visn19/clinical/nomenclature.asp

Appendix D: Evidence Table

Table E-1. 2024 Suicide Risk Evidence Table[a,b,c,d,e,f]

#	Recommendation	2019 Strength of Recommendation	Evidence	2024 Strength of Recommendation	2024 Recommendation Category
1.	There is insufficient evidence to recommend for or against suicide risk screening programs to reduce the risk of suicide or suicide attempts.	NA	(58-66)	Neither for nor against	Reviewed, New-added

2.	When selecting a screening tool, we suggest the use of a validated measure to identify patients at risk for suicide-related behavior. Tools with evidence and support of use, by population, include the following.
	
	• General population
	  ♦ Columbia Suicide Severity Rating Scale Screener
	  ♦ Suicide Cognition Scale – Revised
	  ♦ Patient Health Questionnaire-9
	• Populations at increased risk
	  ♦ Beck Suicide Intent Scale/Beck Scale for Suicidal Ideation
	  ♦ Columbia Suicide Severity Rating Scale Screener
		Weak for
		
		Weak for (PHQ-9)
			(67-69, 71-77)
			Additional References
			(78-86)
				Weak for	Reviewed, New-replaced

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a   2019 CPG Recommendation # column: This indicates the recommendation number of the recommendation in the 2019 VA/DoD Suicide Risk CPG.

b   2019 CPG Recommendation Text column: This contains the wording of each recommendation from the 2019 VA/DoD Suicide Risk CPG.

c   2019 CPG Strength of Recommendation column: The 2019 VA/DoD Suicide Risk CPG used the GRADE approach to determine the strength of each recommendation.

d   2019 CPG Recommendation Category column: This is the recommendation category assigned during the development of the 2019 VA/DoD Suicide Risk CPG. Refer to the Recommendation Categorization section for more information on the description of the categorization process and the definition of each category.

e   2019 CPG Recommendation Category column: This is the recommendation category assigned during the development of the 2024 VA/DoD Suicide Risk CPG. Refer to the Recommendation Categorization section for more information on the description of the categorization process and the definition of each category.

f   2019 CPG Recommendation # column: For recommendations that were carried forward to the 2019 VA/DoD Suicide Risk CPG, this column indicates the new recommendation(s) to which they correspond.

#	Recommendation	2019 Strength of Recommendation	Evidence	2024 Strength of Recommendation	2024 Recommendation Category
3.	When performing a suicide risk assessment, we suggest including, but not limited to, factors (see Table 6) within the following domains. • Self-directed violence, thoughts, and behaviors • Current psychiatric conditions and current or past mental/behavioral health treatment • Psychiatric symptoms • Social determinants of health and adverse life events • Availability of lethal means • Physical health conditions • Demographic characteristics	Strong for	(87-105, 107-114) **Additional References** (106, 115)	Weak for	Reviewed, Amended
4.	While risk stratification is an expected component of routine care, there is insufficient evidence to recommend for or against the use of a specific tool or method to determine the level of suicide risk.	NA	(68)	Neither for nor against	Reviewed, New-added
5.	We suggest cognitive behavioral therapy–based psychotherapy focused on suicide prevention to reduce the risk of suicide attempts in patients with a history of suicidal behavior within the past six months.	Strong for	(116-123)	Weak for	Reviewed, New-replaced
6.	We suggest offering cognitive behavioral therapy (including problem solving–based psychotherapies) focused on suicide prevention to reduce suicidal ideation for patients with a history of self-directed violence.	NA	(121, 124-132)	Weak for	Reviewed, New-replaced
7.	There is insufficient evidence to recommend for or against completing a crisis response plan or safety planning intervention to reduce the risk of suicide attempts in patients with recent suicidal ideation, a lifetime history of suicide attempts, or both.	Neither for nor against	(133)	Neither for nor against	Reviewed, New-replaced

#	Recommendation	2019 Strength of Recommendation	Evidence	2024 Strength of Recommendation	2024 Recommendation Category
8.	There is insufficient evidence to recommend for or against Collaborative Assessment and Management of Suicidality to reduce suicidal ideation.	NA	(121, 135-141) **Additional Reference** (134)	Neither for nor against	Reviewed, New-added
9.	There is insufficient evidence to recommend for or against offering dialectical behavior therapy to reduce suicidal ideation and the risk of suicide attempts or suicide.	NA	(121, 142, 143) **Additional References** (144, 145)	Neither for nor against	Reviewed, New-replaced
10.	There is insufficient evidence to recommend for or against peer-to-peer programs to reduce suicidal ideation.	NA	(146-148)	Neither for nor against	Reviewed, New-added
11.	We suggest clozapine to reduce the risk of suicide attempts for patients with schizophrenia or schizoaffective disorder and either suicidal ideation or a history of suicide attempt(s).	Weak for	(149, 150) **Additional References** (151-157)	Weak for	Reviewed, Amended
12.	We suggest offering ketamine infusion as an adjunctive treatment for short-term reduction in suicidal ideation in patients with the presence of suicidal ideation and major depressive disorder.	Weak for	(158-160)	Weak for	Reviewed, Not-changed
13.	There is insufficient evidence to recommend for or against ketamine infusions or esketamine to reduce the risk of suicide or suicide attempts.	NA	(161, 162)	Neither for nor against	Reviewed, New-added
14.	There is insufficient evidence to recommend for or against lithium to reduce the risk of suicide or suicide attempts for patients with mood disorders.	Weak for	(163-165)	Neither for nor against	Reviewed, New-replaced
15.	There is insufficient evidence to recommend for or against repetitive transcranial magnetic stimulation to reduce the risk of suicide or suicide attempts.	NA	(167) **Additional References** (166, 168, 169)	Neither for nor against	Reviewed, New-added

#	Recommendation	2019 Strength of Recommendation	Evidence	2024 Strength of Recommendation	2024 Recommendation Category
16.	We suggest sending patients periodic caring communications (e.g., postal mail, text messages), in addition to usual care, for 12 months following hospitalization related to suicide risk to reduce the risk of suicide attempts.	Weak for	(170-172) **Additional References** (10, 174, 175)	Weak for	Reviewed, New-replaced
17.	There is insufficient evidence to recommend for or against offering brief contact interventions (e.g., telephonic interventions, crisis cards, World Health Organization Brief Intervention and Contact treatment modality) in addition to usual care following discharge from the emergency department to reduce the risk of suicide attempts.	Neither for nor against	(176-180)	Neither for nor against	Reviewed, New-replaced
18.	We suggest the use of self-guided digital interventions (app or web) that include, but are not limited to, cognitive behavioral–based therapeutic content for short-term reduction in suicidal ideation.	Neither for nor against	(181, 182) **Additional Reference** (212)	Weak for	Reviewed, New-replaced
19.	There is insufficient evidence to recommend for or against the use of standalone or adjunctive technology-based tools (e.g., mobile and web apps, automated telephone-based) to reduce the risk of suicide attempts or suicide.	Neither for nor against	(172, 181, 183-188) **Additional Reference** (212)	Neither for nor against	Reviewed, New-replaced
20.	We suggest multi-component community interventions to reduce the risk of suicide. Common components include, but are not limited to: training on mental/behavioral health topics and/or suicide risk factors; local networking and/or community facilitation; and providing mental/behavioral health and/or suicide prevention materials.	Neither for nor against (targeting patients at risk for suicide) Neither for nor against (to reduce population-level suicide rates)	(190-194) **Additional Reference** (189)	Weak for	Reviewed, New-replaced

#	Recommendation	2019 Strength of Recommendation	Evidence	2024 Strength of Recommendation	2024 Recommendation Category
21.	We suggest reducing access to lethal means to reduce the risk of suicide by firearms, jumping, or medication overdose.	Weak for	(107, 109-112, 196, 204-206) **Additional References** (195, 197-203)	Weak for	Reviewed, New-replaced
22.	There is insufficient evidence to recommend for or against the use of targeted messaging to at-risk populations to reduce suicidal ideation and improve help-seeking behavior.	NA	(207, 208)	Neither for nor against	Reviewed, New-added
23.	There is insufficient evidence to recommend for or against standalone gatekeeper training to reduce the risk of suicide	Neither for nor against	(209)	Neither for nor against	Reviewed, Amended
24.	There is insufficient evidence to recommend for or against crisis lines to reduce suicidal ideation or the risk of suicide attempts or suicide.	NA	(209)	Neither for nor against	Reviewed, New-added

Appendix E: 2019 Recommendation Categorization Table

Table F-1. 2019 VA/DoD Suicide Risk CPG Recommendation Categorization Table[a,b,c,d,e,f]

2019 CPG Recommendation #	2019 CPG Recommendation Text	2019 CPG Strength of Recommendation	2019 CPG Recommendation Category	2024 CPG Recommendation Category	2024 CPG Recommendation #
1.	With regard to universal screening, we suggest the use of a validated screening tool to identify individuals at risk for suicide-related behavior.	Weak for	Reviewed, New-added	Reviewed, New-replaced	2
2.	With regard to selecting a universal screening tool, we suggest the use of the Patient Health Questionnaire-9 item 9, to identify suicide risk.	Weak for	Reviewed, New-added	Reviewed, New-replaced	2
3.	We recommend an assessment of risk factors as part of a comprehensive evaluation of suicide risk, including but not limited to: current suicide ideation, prior suicide attempt(s), current psychiatric conditions (e.g., mood disorders, substance use disorders) or symptoms (e.g., hopelessness, insomnia, and agitations), prior psychiatric hospitalization, recent bio-psychosocial stressors, and the availability of firearms.	Strong for	Reviewed, New-replaced	Reviewed, Amended	3
4.	When evaluating suicide risk, we suggest against the use of a single instrument or method (e.g., structured clinical interview, self-report measures, or predictive analytic models).	Weak against	Reviewed, Amended	Not reviewed, Deleted	NA

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a   2019 CPG Recommendation # column: This indicates the recommendation number of the recommendation in the 2019 VA/DoD Suicide Risk CPG.

b   2019 CPG Recommendation Text column: This contains the wording of each recommendation from the 2019 VA/DoD Suicide Risk CPG.

c   2019 CPG Strength of Recommendation column: The 2019 VA/DoD Suicide Risk CPG used the GRADE approach to determine the strength of each recommendation.

d   2019 CPG Recommendation Category column: This is the recommendation category assigned during the development of the 2019 VA/DoD Suicide Risk CPG. Refer to the Recommendation Categorization section for more information on the description of the categorization process and the definition of each category.

e   2024 CPG Recommendation Category column: This is the recommendation category assigned during the development of the 2024 VA/DoD Suicide Risk CPG. Refer to the Recommendation Categorization section for more information on the description of the categorization process and the definition of each category.

f   2024 CPG Recommendation # column: For recommendations that were carried forward to the 2019 VA/DoD Suicide Risk CPG, this column indicates the new recommendation(s) to which they correspond.

2019 CPG Recommendation #	2019 CPG Recommendation Text	2019 CPG Strength of Recommendation	2019 CPG Recommendation Category	2024 CPG Recommendation Category	2024 CPG Recommendation #
5.	While it is an expected standard of care, there is insufficient evidence to recommend for or against the use of risk stratification to determine the level of suicide risk.	Neither for nor against	Reviewed, New-replaced	Not reviewed, Deleted	NA
6.	We recommend using cognitive behavioral therapy-based interventions focused on suicide prevention for patients with a recent history of self-directed violence to reduce incidents of future self-directed violence.	Strong for	Reviewed, New-added	Not reviewed, Deleted	NA
7.	We suggest offering Dialectical Behavioral Therapy to individuals with borderline personality disorder and recent self-directed violence.	Weak for	Reviewed, New-replaced	Not reviewed, Deleted	NA
8.	We suggest completing a crisis response plan for individuals with suicidal ideation and/or a lifetime history of suicide attempts.	Weak for	Reviewed, New-replaced	Reviewed, New-replaced	5
9.	We suggest offering problem-solving based psychotherapies to: a. Patients with a history of more than one incident of self-directed violence to reduce repeat incidents of such behaviors b. Patients with a history of recent self-directed violence to reduce suicidal ideation c. Patients with hopelessness and a history of moderate to severe traumatic brain injury.	Weak for	Reviewed, New-replaced	Reviewed, New-replaced	6
10.	In patients with the presence of suicidal ideation and major depressive disorder, we suggest offering ketamine infusion as an adjunctive treatment for short-term reduction in suicidal ideation.	Weak for	Reviewed, New-added	Reviewed, Not changed	12
11.	We suggest offering lithium alone (among patients with bipolar disorder) or in combination with another psychotropic agent (among patients with unipolar depression or bipolar disorder) to decrease the risk of death by suicide in patients with mood disorders.	Weak for	Reviewed, New-replaced	Reviewed, New-replaced	14

2019 CPG Recommendation #	2019 CPG Recommendation Text	2019 CPG Strength of Recommendation	2019 CPG Recommendation Category	2024 CPG Recommendation Category	2024 CPG Recommendation #
12.	We suggest offering clozapine to decrease the risk of death by suicide in patients with schizophrenia or schizoaffective disorder and either suicidal ideation or a history of suicide attempt(s).	Weak for	Reviewed, Amended	Reviewed, Amended	11
13.	We suggest sending periodic caring communications (e.g., postcards) for 12-24 months in addition to usual care after psychiatric hospitalization for suicidal ideation or a suicide attempt.	Weak for	Reviewed, New-replaced	Reviewed, New-replaced	16
14.	We suggest offering a home visit to support reengagement in outpatient care among patients not presenting for outpatient care following hospitalization for a suicide attempt.	Weak for	Reviewed, Amended	Not reviewed, Deleted	NA
15.	We suggest offering the World Health Organization Brief Intervention and Contact treatment modality following presentation to the emergency department for suicide attempt, in addition to standard care.	Neither for nor against	Reviewed, New-added	Reviewed, New-replaced	17
16.	There is insufficient evidence to recommend for or against technology-based behavioral health treatment modalities for individuals with suicidal ideation. These include self-directed digital delivery of treatment protocols with minimal or no provider interaction (e.g., compact disc, web-based), and provider-delivered virtual treatment.	Neither for nor against	Reviewed, New-replaced	Reviewed, New-replaced	18
17.	There is insufficient evidence to recommend for or against the use of technology-based adjuncts (e.g., web or telephone applications) to routine suicide prevention treatment for individuals with suicidal ideation.	Neither for nor against	Reviewed, New-replaced	Reviewed, New-replaced	19
18.	We suggest reducing access to lethal means to decrease suicide rates at the population level.	Weak for	Reviewed, New-added	Reviewed, New-replaced	21
19.	There is insufficient evidence to recommend for or against community-based interventions targeting patients at risk for suicide.	Neither for nor against	Reviewed, New-added	Reviewed, New-replaced	20

2019 CPG Recommendation #	2019 CPG Recommendation Text	2019 CPG Strength of Recommendation	2019 CPG Recommendation Category	2024 CPG Recommendation Category	2024 CPG Recommendation #
20.	There is insufficient evidence to recommend for or against community-based interventions to reduce population-level suicide rates.	Neither for nor against	Reviewed, New-added	Reviewed, New-replaced	20
21.	There is insufficient evidence to recommend for or against gatekeeper training alone to reduce population-level suicide rates.	Neither for nor against	Reviewed, New-added	Reviewed, Amended	23
22.	There is insufficient evidence to recommend for or against buddy support programs to prevent suicide, suicide attempts, or suicidal ideation.	Neither for nor against	Reviewed, New-added	Not reviewed, Deleted	NA

Appendix F: Participant List

Nazanin Bahraini, PhD
Director of Research, Rocky Mountain
Mental Illness Research Education
and Clinical Center for Suicide
Prevention (MIRECC)
Aurora, Colorado

Candice Bodie, LCSW
Suicide Prevention Collaborations
Programs Manager, VISN 21
Las Vegas, Nevada

Lisa A. Brenner, PhD, ABPP
Director, Rocky Mountain Mental Illness
Research Education and Clinical
Center for Suicide Prevention
(MIRECC)
Aurora, Colorado

**COL Vincent Capaldi, ScM, MD,
DFAPA, FAASM, FACP**
Vice Chair, Department of Psychiatry
(Research)
Program Director, Combined Internal
Medicine/Psychiatry Residency –
Uniformed Services University of the
Health Sciences School of Medicine
Walter Reed Army Institute of Research
Bethesda, Maryland

Joseph Constans, PhD
Senior Program Manager, Office of
Research & Development
New Orleans, Louisiana

Steven K. Dobscha, MD
Director, VA Health Services Research
& Development (HSR&D) Center to
Improve Veteran Involvement in Care
(CIVIC) & VA HSR&D Suicide
Prevention Impact Network
Portland, Oregon

**Matthew A. Fuller, PharmD, FASHP,
BCPP**
National PBM Clinical Pharmacy
Program Manager – Psychiatry and
Geriatrics
VHA Pharmacy Benefits Management
Service (12 PBM), U.S. Department of
Veterans Affairs
Washington, DC

Stephanie Gamble, PhD
Director, VISN 2 Center of Excellence
for Suicide Prevention
Canandaigua, New York

Svetlana Kahle, PsyD
DHA Primary Care Behavioral Health
(PCBH) Program Manager
Licensed Clinical Psychologist, Medical
Affairs/Clinical Support Division
DHA Headquarters
Falls Church, Virginia

Vanessa Kirkwood, PharmD
Clinical Pharmacist
Byrd CTMC & Night Stalker Clinic
Fort Campbell, Kentucky

LCDR Adrienne Manasco, PsyD
Clinical Psychologist, Behavioral Health
Solution Owner, Health Informatics,
DHA Headquarters
Falls Church, Virginia

Bridget Matarazzo, PsyD
Director of Clinical Services, Rocky
Mountain Mental Illness Research
Education and Clinical Center for
Suicide Prevention (MIRECC)
Aurora, Colorado

Kate McGraw, PhD
Chief, Psychological Health Center of
　Excellence (PHCoE)
Silver Spring, Maryland

**Ronald Nardi, MSN, PMHCNS-BC,
　APRN**
Mental Health Clinical Nurse Specialist,
Sierra Nevada VA Health Care System
Psychiatry/Primary Care Mental Health
　Integration
Reno, Nevada

MAJ Kendra Parker-Pitts, MD
Emergency Physician
Brigade Surgeon, 2nd Armored Brigade,
　3rd Infantry Division
Fort Stewart, Georgia

**CAPT Kenneth Richter Jr., DO, CPE,
　FAPA**
Director for Mental Health Policy &
　Oversight Health Services
Policy & Oversight Office of the
　Assistant Secretary of Defense
for Health Affairs
DHA Headquarters
Falls Church, Virginia

LCDR Eric J. Serpico, DO
Assistant Professor, Department of
　Psychiatry
Associate Program Director of the
　National Capital Consortium's Military
　Psychiatry Residency
Uniformed Services University of the
　Health Sciences School of Medicine
Bethesda, Maryland

Derek J. Smolenski, PhD, MPH
Epidemiologist, Surveillance,
　Psychological Health Center of
　Excellence (PHCoE)
Research and Engineering Directorate,
　DHA
Tacoma, Washington

Jennifer Tucker, PhD
Suicidologist, Research Psychologist
　Program Manager
Suicide Prevention and Intervention
　Program
Falls Church, Virginia

Edgar Villarreal, PhD
National Clinical Director for Suicide
　Prevention
Office of Mental Health & Suicide
　Prevention
Denver, Colorado

**COL Scott Williams, MD, FACP,
　FAASM, DFAPA**
Director, Center for Military Psychiatry
　and Neuroscience
Walter Reed Army Institute of Research
Bethesda, Maryland

Appendix G: Literature Review Search Terms and Strategy

Table H-1. MEDLINE and PsycINFO in Ovid Syntax

KQ	Set #	Description	Strategy
KQ 1, KQ 2	#1	Suicide	self-injurious behavior/ or self mutilation/ or suicidal ideation/ or exp suicide/ or suicide prevention/ or suicidology/ or (automutilat* or "self destruct*" or "self directed violence" or "self harm*" or "self immolat*" or "self inflicted" or "self injur*" or "self mutilat*" or "self wounding" or suicid*).ti.
	#2	Screening - General	mass screening/ or screening/ or screening tests/ or (assess* or detect* or evaluat* or instrument* or interview* or measur* or (predict* adj3 (analytic* or model* or program*)) or questionnaire* or scale* or screen* or surveil* or tool*).ti.
	#3	Screening – Specific Instruments	("1 step" or "2 step" or "ask suicide screening" or "ask suicide screening questionnaire" or asq or cssrs or "c ssrs" or "clinical assessment interview*" or "clinical screen*" or "columbia suicide severity rating scale" or "computer* adaptive test*" or "ec ssrs" or phq9 or "phq-9" or "one step" or "patient health questionnaire" or rdoc or "reach vet" or "research domain criteria framework" or "structured assess*" or "suicide assessment five-step evaluation and triage" or "safe-t" or "two step" or "universal screen*" or "unstructured assess*" or "zero suicide").ab,ti.
KQ 3, KQ 4	#4	Risk	*at risk populations/ or *protective factors/ or *risk assessment/ or *risk factors/ or AI.ti. or "artificial intelligence".ti. or "event report*".ti. or (longitudinal* adj3 assess*).ti. or "machine learning".ti. or "natural language process*".ti. or predict*.ti. or protect*.ti. or ((risk*) adj3 (algorithm* or assess* or biomarker* or calculat* or categor* or characteristic* or classif* or define or defining or evaluat* or factor* or increase* or index or indices or marker* or prioritiz* or profile* or reduc* or score* or stratif* or tier*)).ti. or "social determinant*".ti. or "warning sign*".ti.
	#5	Combine Concepts	1 and (2 or 3 or 4)

KQ	Set #	Description	Strategy
KQ 5, KQ 6	#6	Suicide	self-injurious behavior/ or self mutilation/ or suicidal ideation/ or exp suicide/ or suicide prevention/ or suicidology/ or (automutilat* or "self destruct*" or "self directed violence" or "self harm*" or "self immolat*" or "self inflicted" or "self injur*" or "self mutilat*" or "self wounding" or suicid*).ab,ti.
	#7	Psychotherapeutic Interventions	acceptance and commitment therapy/ or behavior therapy/ or behavioral activation system/ or exp cognitive behavior therapy/ or exp cognitive behavioral therapy/ or exp cognitive therapy/ or exp dialectical behavior therapy/ or exp mindfulness/ or mindfulness-based interventions/ or exp psychotherapy/ or ("acceptance and commitment therapy" or "anxiety sensitivity" or bcbt or "bcbt sp" or "behavio?ral activation" or cams or cbt or "cbt-sp" or "collaborative assessment and management of suicidality" or dbt or "dialectic* behav*" or interoceptive or mindful* or pst or psychotherap* or "teachable moment brief intervention" or ((behavio?r* or cognitiv* or "problem solving") adj3 (counsel* or intervention* or psychol* or psychotherap* or therap* or treatment*))).ab,ti.
KQ 7	#8	Enhanced Care Strategies	exp brain stimulation/ or exp coping behavior/ or exp deep brain stimulation/ or electric stimulation therapy/ or exp electrical stimulation/ or electroconvulsive shock therapy/ or electroconvulsive therapy/ or house calls/ or exp nerve stimulation/ or exp "substance use treatment"/ or suicide prevention/ or exp transcranial magnetic stimulation/ or ((alcohol* or drug* or substance*) adj3 (abuse* or misus* or use*) adj3 treatment*).ab,ti. or ("alpha stim" or alphastim or "attempted suicide short intervention program" or assip or (brief* adj3 intervention*) or (care adj3 (change* or coordinat* or environment* or manage* or plan*)) or "caring communication*" or "caring contact*" or "case manage*" or ((cope or coping) adj3 (skill* or train*)) or (crisis adj3 (plan* or respons*)) or dbs or "deep brain stimulat*" or electroconvulsiv* or (firearm* adj3 (access* or restrict*)) or (gun* adj3 (access* or restrict*)) or "high-risk flag program" or ((home* or house*) adj3 (call* or care or caring or visit*)) or hrsprf or "hrs-prf" or ("lethal means" adj3 (access* or counsel* or restrict* or safety)) or neurostimulat* or "patient record flag" or (provider* adj3 (educat* or train*)) or rtms or (safety adj3 plan*) or (suicid* adj3 prevent*) or "transcranial magnetic stimulat*" or "who-bic").ab,ti.

KQ	Set #	Description	Strategy
KQ 8, KQ 9	#9	Pharmacological Interventions	dt.fs. or anti-anxiety agents/ or exp antidepressive agents/ or exp antidepressant drugs/ or exp cannabis/ or exp drug therapy/ or "hypnotics and sedatives"/ or ketamine/ or exp lithium/ or medical marijuana/ or naloxone/ or exp neuroleptic drugs/ or exp sedatives/ or ((("anti anxiety" or antianxiety or "anti depress*" or antidepress* or "anti psychotic*" or antipsychotic* or hypnotic* or neuroleptic* or psychedelic* or sedative*) adj3 (agent* or drug* or medication* or medicine* or pharmaceutical*)) or cannabi* or (drug* adj2 (therap* or treatment*)) or esketamine or ketamine or lithium or marijuana or naloxone or pharmacological* or pharmacotherap* or "pharmaco-therap*").ab,ti.
KQ 10	N/A	***Please refer to search strategies for KQs 5-9***	
KQ 11	#10	Technology-based Interventions	exp cell phone/ or exp computers, handheld/ or computer applications/ or computer-assisted therapy/ or computer software/ or Digital Interventions/ or exp electronic communication/ or Electronic Mail/ or exp internet/ or mobile applications/ or exp mobile devices/ or online therapy/ or remote consultation/ or software/ or teleconsultation/ or exp telemedicine/ or exp telephone/ or exp Videoconferencing/ or video-based interventions/ or web based intervention/ or avatar*.ti. or ((distance or mobile or remote or tele or virtual) adj3 (care or counseling or counselor* or consult* or health or medical or medicine or monitor* or psychiatr* or psycholog* or psychotherap* or therapy or visit*)).ti. or android*.ti. or app.ti. or apps.ti. or asynchronous*.ti. or automat*.ti. or chat*.ti. or cellphone*.ti. or "computer based".ti. or cyber*.ti. or digital.ti. or "e health*".ti. or " e mail*".ti. or ehealth*.ti. or email*.ti. or "e therapy".ti. or etherapy.ti. or facebook.ti. or "face tim*".ti. or facetim*.ti. or instagram*.ti. or internet.ti. or ipad.ti. or iphone.ti. or "lap top*".ti. or laptop*.ti. or "m health*".ti. or mhealth*.ti. or ((mobil* or portab*) adj1 (computer* or device* or health or tablet*)).ti. or "on line".ti. or online.ti. or phone.ti. or phones.ti. or podcast*.ti. or samsung.ti. or "short messag* service*".ti. or smartphone*.ti. or ((sms or text) adj2 messag*).ab,ti. or (social adj1 (media or network* or platform*)).ti. or software.ti. or "store and forward".ti. or synchronous*.ti. or teams.ti. or technolog*.ti. or tele.ti. or teleconsult*.ti. or telecounsel*.ti. or telehealth*.ti. or telemed*.ti. or telemonitor*.ti. or telephone*.ti. or telepsych*.ti. or telerehab*.ti. or teletherapy.ti. or televisit*.ti. or texting*.ti. or "tik tok*".ti. or tiktok*.ti. or tweet*.ti. or twitter*.ti. or video*.ti. or "virtual reality".ti. or web.ti. or website*.ti. or zoom.ti.

KQ	Set #	Description	Strategy
KQ 12	#11	Community-based Interventions	exp community mental health services/ or exp community services/ or exp crisis intervention services/ or "family intervention"/ or family support/ or exp Group Psychotherapy/ or health education/ or health promotion/ or "parent training"/ or social stigma/ or exp social support/ or exp stigma/ or exp support groups/ or (((caregiver* or communit* or families or family or group* or mutual* or parent* or patient* or peer* or spous*) adj2 (aid or assist* or counsel* or education* or help* or intervention* or led or program* or resource* or support* or therap*)) or (crisis adj3 (hotline* or line*)) or (("gate keeper*" or gatekeeper*) adj3 (education* or train*)) or "peer to peer" or postcard* or "safe messag*" or (stigma* adj2 reduc*) or (suicid* adj3 hotline*)).ab,ti.
Combine concepts & apply study type limits	#12	Combine population & KQs 5-12 interventions	6 and (7 or 8 or 9 or 10 or 11)
	#13	KQs 5-12 Systematic Reviews	12 and ((((meta analysis OR systematic review).pt. OR cochrane*.jn. OR systematic.ti. OR (cochrane* OR meta analy* OR metaanaly* OR (search* AND (cinahl* OR databases OR ebsco* OR embase* OR psychinfo* OR psycinfo* OR science direct* OR sciencedirect* OR scopus* OR systematic* OR "web of knowledge*" OR "web of science*")) OR (review* ADJ3 systematic*) OR (systematic* ADJ3 review*)).ti,ab.) NOT ((protocol ADJ3 review) OR review protocol OR scoping review).ti.) or (((meta analysis OR systematic review).md. OR meta analysis/ OR systematic review/ OR systematic.ti. OR (cochrane* OR meta analy* OR metaanaly* OR (search* AND (cinahl* OR databases OR ebsco* OR embase* OR psychinfo* OR psycinfo* OR science direct* OR sciencedirect* OR scopus* OR systematic* OR "web of knowledge*" OR "web of science*")) OR (review* ADJ3 systematic*) OR (systematic* ADJ3 review*)).ti,ab.) NOT ((protocol ADJ3 review) OR review protocol OR scoping review).ti.))
	#14	KQs 5-12 RCTs	12 and ((random allocation/ or randomized controlled trial.pt. or (phase 3 or phase iii or random* or RCT).ti,ab.) or (exp randomized controlled trials/ or random sampling/ or (phase 3 or phase iii or random* or RCT).ti,ab.))
	#15	Combine results for all KQs	5 or 13 or 14
	#16	Limit to items published 2018 - 2023	limit 15 to yr="2018 - 2023"
	#17	Limit to results added to the database between April 1, 2018 and March 15, 2023	limit 16 to up=20180401-20230315

KQ	Set #	Description	Strategy
Combine concepts & apply study type limits (continued)	#18	Remove out of scope publication types	17 not ((case reports or clinical conference or comment or congress or editorial or letter or news).pt. or (case report or comment* or editorial or letter or news).ti. or ((protocol and (study or trial)) not ("therapy protocol*" or "treatment protocol*")).ti. or ((chapter or "column/opinion" or "comment/reply" or dissertation or editorial or letter or review-book).dt. or (book or encyclopedia or "dissertation abstract").pt. or ("case report" or comment* or editorial or letter or news).ti. or ((protocol and (study or trial)) not ("therapy protocol*" or "treatment protocol*")).ti.))
	#19	Remove out of scope age ranges	18 not ((adolescen* or babies or baby or boy* or child* or girl* or infancy or infant* or juvenile* or neonat* or newborn* or nurser* or paediatric* or pediatric* or preschool* or "school age*" or schoolchildren* or teen* or toddler* or youth*).ti. not (adult*.ti,ab. or father*.ti. or matern*.ti,ab. or men.ti,ab. or mother*.ti. or parent*.ti. or patern*.ti,ab. or women.ti,ab.))
	#20	English language limit	limit 19 to english language
	#21	Remove duplicates	remove duplicates from 20

Table H-2. EMBASE

KQ	Set #	Description	Strategy
KQ 1, KQ 2	#1	Suicide	'automutilation'/exp OR 'suicidal behavior'/exp OR 'suicide prevention'/exp OR automutilat*:ti OR 'self destruct*':ti OR 'self directed violence':ti OR 'self harm*':ti OR 'self immolat*':ti OR 'self inflicted':ti OR 'self injur*':ti OR 'self mutilat*':ti OR 'self wounding':ti OR suicid*:ti
	#2	Screening - General	'screening'/exp OR assess*:ti OR detect*:ti OR interview*:ti OR instrument*:ti OR measur*:ti OR ((predict* NEAR/3 (analytic* OR model* OR program*)):ti) OR questionnaire*:ti OR scale*:ti OR screen*:ti OR surveil*:ti OR tool*:ti
	#3	Screening – Specific Instruments	1 step':ab,ti OR '2 step':ab,ti OR 'ask suicide screening':ab,ti OR 'ask suicide screening questionnaire':ab,ti OR asq:ab,ti OR cssrs:ab,ti OR 'c ssrs':ab,ti OR 'clinical assessment interview*':ab,ti OR 'clinical screen*':ab,ti OR 'columbia suicide severity rating scale':ab,ti OR 'computer* adaptive test*':ab,ti OR 'ec ssrs':ab,ti OR phq9:ab,ti OR 'phq-9':ab,ti OR 'one step':ab,ti OR 'patient health questionnaire':ab,ti OR rdoc:ab,ti OR 'reach vet':ab,ti OR 'research domain criteria framework':ab,ti OR 'structured assessment*':ab,ti OR 'suicide assessment five-step evaluation and triage':ab,ti OR 'safe-t':ab,ti OR 'two step':ab,ti OR 'universal screen*':ab,ti OR 'unstructured assessment*':ab,ti OR 'zero suicide':ab,ti

KQ	Set #	Description	Strategy
KQ 3, KQ 4	#4	Risk Evaluation	'protection'/exp/mj OR 'risk assessment'/exp/mj OR 'risk factor'/exp/mj OR ai:ti OR 'artificial intelligence':ti OR 'event report*':ti OR ((longitudinal* NEAR/3 assess*):ti) OR 'machine learning':ti OR 'natural language process*':ab,ti OR predict*:ti OR protect*:ti OR ((risk* NEAR/3 (algorithm* OR assess* OR biomarker* OR calculat* OR categor* OR characteristic* OR classif* OR define OR defining OR evaluat* OR factor* OR increase* OR index OR indices OR marker* OR prioritiz* OR profile* OR reduc* OR score* OR stratif* OR suicid* OR tier*)):ti) OR 'warning sign*':ti
	#5	Combine Concepts	#1 AND (#2 OR #3 OR #4)
KQ 5, KQ 6	#6	Suicide	'automutilation'/exp OR 'suicidal behavior'/exp OR 'suicide prevention'/exp OR automutilat*:ab,ti OR 'self destruct*':ab,ti OR 'self directed violence':ab,ti OR 'self harm*':ab,ti OR 'self immolat*':ab,ti OR 'self inflicted':ab,ti OR 'self injur*':ab,ti OR 'self mutilat*':ab,ti OR 'self wounding':ab,ti OR suicid*:ab,ti
	#7	Psychotherapeutic Interventions	'cognitive therapy'/exp OR 'mindfulness'/exp OR 'psychotherapy'/exp OR 'acceptance and commitment therap*':ab,ti OR 'anxiety sensitivity':ab,ti OR bcbt:ab,ti OR 'bcbt sp':ab,ti OR 'behavioral activation':ab,ti OR 'behavioural activation':ab,ti OR cams:ab,ti OR cbt:ab,ti OR 'cbt-sp':ab,ti OR 'collaborative assessment and management of suicidality':ab,ti OR dbt:ab,ti OR 'dialectic* behavior*':ab,ti OR 'dialectic* behaviour*':ab,ti OR interoceptive:ab,ti OR mindful*:ab,ti OR pst:ab,ti OR psychotherap*:ab,ti OR 'teachable moment brief intervention':ti,ab OR (((behavior* OR behaviour* OR cognitiv* OR 'problem solving') NEAR/3 (counsel* OR intervention* OR psychol* OR psychotherap* OR therap* OR treatment*)):ab,ti)

KQ	Set #	Description	Strategy
KQ 7	#8	Enhanced Care Strategies	'brain depth stimulation'/exp OR 'care behavior'/de OR 'coping behavior'/exp OR 'drug dependence treatment'/exp OR 'electrotherapy'/exp OR 'home visit'/de OR 'suicide prevention'/exp OR 'transcranial magnetic stimulation'/exp OR (((alcohol* OR drug* OR substance*) NEAR/3 (abuse* OR misus* OR use*) NEAR/3 treatment*):ab,ti) OR 'alpha stim':ab,ti OR alphastim:ab,ti OR 'attempted suicide short intervention program':ab,ti OR assip:ab,ti OR ((brief* NEAR/3 intervention*):ab,ti) OR ((care NEAR/3 (change* OR coordinat* OR environment* OR manage* OR plan*)):ab,ti) OR 'caring communication*':ab,ti OR 'caring contact*':ab,ti OR 'case manage*':ab,ti OR (((cope OR coping) NEAR/3 (skill* OR train*)):ab,ti) OR ((crisis NEAR/3 (plan* OR respons*)):ab,ti) OR dbs:ab,ti OR 'deep brain stimulat*':ab,ti OR electroconvulsiv*:ab,ti OR ((firearm* NEAR/3 (access* OR restrict*)):ab,ti) OR ((gun* NEAR/3 (access* OR restrict*)):ab,ti) OR 'high-risk flag program':ab,ti OR (((home* OR house*) NEAR/3 (call* OR care OR caring OR visit*)):ab,ti) OR hrsprf:ab,ti OR 'hrs-prf':ab,ti OR (('lethal means' NEAR/3 (access* OR counsel* OR restrict* OR safety)):ab,ti) OR neurostimulat*:ab,ti OR 'patient record flag':ab,ti OR ((provider* NEAR/3 (educat* OR train*)):ab,ti) OR rtms:ab,ti OR ((safety NEAR/3 plan*):ab,ti) OR ((suicid* NEAR/3 prevent*):ab,ti) OR 'transcranial magnetic stimulat*':ab,ti OR 'who-bic':ab,ti
KQ 8, KQ 9	#9	Pharmacological Interventions	'antidepressant agent'/exp OR 'anxiolytic agent'/exp OR 'cannabis'/exp OR 'drug therapy'/exp OR 'hypnotic sedative agent'/exp OR 'ketamine'/exp OR 'lithium'/exp OR 'medical cannabis'/exp OR 'naloxone'/exp OR 'neuroleptic agent'/exp OR 'sedative agent'/exp OR ((('anti anxiety' OR antianxiety OR 'anti depress*' OR antidepress* OR 'anti psychotic*' OR antipsychotic* OR hypnotic* OR neuroleptic* OR psychedelic* OR sedative*) NEAR/3 (agent* OR drug* OR medication* OR medicine* OR pharmaceutical*)):ab,ti) OR cannabi*:ab,ti OR ((drug* NEAR/2 (therap* OR treatment*)):ab,ti) OR esketamine:ab,ti OR ketamine:ab,ti OR lithium:ab,ti OR marijuana:ab,ti OR naloxone:ab,ti OR pharmacological*:ab,ti OR pharmacotherap*:ab,ti OR 'pharmaco-therap*':ab,ti
KQ 10	N/A	***Please refer to search strategies for KQs 5-9***	

KQ	Set #	Description	Strategy
KQ 11	#10	Technology-based Interventions	'e-mail'/de OR 'e therapy'/de OR 'internet'/de OR 'mobile application'/exp OR 'mobile phone'/exp OR 'podcast'/de OR 'self care'/exp OR 'self-care software'/exp OR 'short message service'/de OR 'social media'/de OR 'tablet computer'/de OR 'teleconsultation'/exp OR 'telehealth'/de OR 'telemedicine'/de OR 'telemonitoring'/de OR 'telephone'/de OR 'telepsychiatry'/de OR 'telepsychology'/de OR 'telepsychotherapy'/de OR 'teletherapy'/de OR 'text messaging'/de OR 'web-based intervention'/de OR 'wireless communication'/de OR 'video consultation'/de OR 'videoconferencing'/de OR avatar*:ti OR (((distance OR mobile OR remote OR tele OR virtual) NEAR/3 (care OR counseling OR counselor* OR consult* OR health OR medical OR medicine OR monitor* OR psychiatr* OR psycholog* OR psychotherap* OR therapy OR visit*)):ti) OR android*:ti OR app:ti OR apps:ti OR asynchronous*:ti OR automat*:ti OR chat*:ti OR cellphone*:ti OR 'computer based':ti OR cyber*:ti OR digital:ti OR 'e health*':ti OR ehealth*:ti OR 'e mail*':ab,ti OR email*:ab,kw OR 'e therapy':ti OR etherapy:ti OR facebook:ti OR 'face tim*':ti OR facetim*:ti OR instagram*:ti OR internet:ti OR ipad:ti OR iphone:ti OR 'lap top*':ti OR laptop*:ti OR 'm health*':ti OR mhealth*:ti OR (((mobil* OR portab*) NEXT/1 (computer* OR device* OR health OR tablet*)):ti) OR 'on line':ti OR online:ti OR phone:ti OR phones:ti OR podcast*:ti OR samsung:ti OR 'short messag* service*':ti OR smartphone*:ti OR (((sms OR text) NEXT/2 messag*):ti) OR ((social NEXT/1 (media OR network* OR platform*)):ti) OR software:ti OR 'store and forward':ti OR synchronous*:ti OR teams:ti OR technolog*:ti OR tele:ti OR teleconsult*:ti OR telecounsel*:ti OR telehealth*:ti OR telemed*:ti OR telemonitor*:ti OR telephone*:ti OR telepsych*:ti OR telerehab* OR teletherapy:ti OR televisit*:ti OR texting*:ti OR 'tik tok*':ti OR tiktok* OR tweet*:ti OR twitter*:ti OR video*:ti OR 'virtual reality':ab,ti OR web:ti OR website*:ti OR zoom:ti
KQ 12	#11	Community-based Interventions	'caregiver support'/de OR 'community care'/exp OR 'crisis intervention'/exp OR 'family support'/exp OR 'group therapy'/exp OR 'health education'/exp OR 'health promotion'/exp OR 'parent counseling'/de OR 'social care'/exp OR 'social stigma'/exp OR 'stigma'/exp OR 'support group'/exp OR (((caregiver* OR communit* OR families OR family OR group* OR mutual* OR parent* OR patient* OR peer* OR spous*) NEAR/2 (aid OR assist* OR counsel* OR education* OR help* OR intervention* OR led OR program* OR resource* OR support* OR therap*)):ab,ti) OR ((crisis NEAR/3 (hotline* OR line*)):ab,ti) OR ((('gate keeper*' OR gatekeeper*) NEAR/3 (education* OR train*)):ab,ti) OR 'peer to peer':ab,ti OR postcard*:ab,ti OR 'safe messag*':ab,ti OR ((stigma* NEAR/3 reduc*):ab,ti) OR ((suicid* NEAR/3 hotline*):ab,ti)

KQ	Set #	Description	Strategy
Combine concepts & apply study type limits	#12	Combine population & KQs 5-12 interventions	#6 AND (#7 OR #8 OR #9 OR #10 OR #11)
	#13	KQs 5-12 Systematic Reviews	#12 AND (('meta analysis'/exp OR 'systematic review'/de OR cochrane:jt OR [cochrane review]/lim OR systematic*:ti OR (cochrane* OR metaanaly* OR 'meta analy*' OR (search* AND (cinahl* OR databases OR ebsco* OR embase* OR psychinfo* OR psycinfo* OR 'science direct*' OR sciencedirect* OR scopus* OR systematic* OR 'web of knowledge*' OR 'web of science')) OR (systematic* NEAR/3 review*)):ti,ab) NOT ((protocol NEXT/3 review) OR 'review protocol' OR 'scoping review'):ti)
	#14	KQs 5-12 RCTs	#12 AND ('random sample'/de OR 'randomization'/de OR 'randomized controlled trial'/exp OR 'phase 3':ti,ab OR 'phase iii':ti,ab OR random*:ti,ab OR RCT:ti,ab)
	#15	Combine results for all KQs	#5 OR #13 OR #14
	#16	Date Limit	#15 AND [2018-2023]/py AND [1-04-2018]/sd NOT [15-03-2023]/sd
	#17	Remove out of scope publication types	#16 NOT ('book'/de OR 'case report'/de OR 'conference paper'/exp OR 'editorial'/de OR 'letter'/de OR (book OR chapter OR conference OR editorial OR letter):it OR [conference abstract]/lim OR [conference paper]/lim OR [conference review]/lim OR [editorial]/lim OR [letter]/lim OR (abstract OR annual OR conference OR congress OR meeting OR proceedings OR sessions OR symposium):nc OR ((book NOT series) OR 'conference proceeding'):pt OR ('case report' OR comment* OR editorial OR letter OR news):ti OR ((protocol AND (study OR trial)) NOT ('therapy protocol*' OR 'treatment protocol*')):ti)
	#18	Remove out of scope age ranges	#17 NOT ((adolescen* OR babies OR baby OR boy* OR child* OR girl* OR infancy OR infant* OR juvenile* OR neonat* OR newborn* OR nurser* OR paediatric* OR pediatric* OR preschool* OR "school age*" OR schoolchildren* OR teen* OR toddler* OR youth*):ti NOT (adult*:ti,ab OR father*:ti OR matern*:ti,ab OR men:ti,ab OR mother*:ti OR parent*:ti OR patern*:ti,ab OR women:ti,ab))
	#19	English language limit	#18 AND [english]/lim
	#20	EMBASE only records	#19 AND [embase]/lim NOT ([embase]/lim AND [medline]/lim)

Table H-3. PubMed in PubMed Syntax

KQ	Set #	Description	Strategy
KQs 1-4	#1	Suicide	automutilat*[TI] OR "self destruct*"[TI] OR "self directed violence"[TI] OR "self harm*"[TI] OR "self immolat*"[TI] OR "self inflicted"[TI] OR "self injur*"[TI] OR "self mutilat*"[TI] OR "self wound*"[TI] OR suicid*[TI]
	#2	Screening - General	(assess*[TI] OR detect*[TI] OR evaluat*[TI] OR instrument*[TI] OR interview*[TI] OR measur*[TI] OR (predict*[TI] AND (analytic*[TI] OR model*[TI] OR program*[TI])) OR questionnaire*[TI] OR scale*[TI] OR screen*[TI] OR surveil*[TI] OR tool*[TI])
	#3	Screening – Specific Instruments	"1 step"[TIAB] OR "2 step"[TIAB] OR "ask suicide screening questions"[TIAB] OR "ask suicide screening"[TIAB] OR asq[TIAB] OR cssrs[TIAB] OR "c ssrs"[TIAB] OR "clinical assessment interview*"[TIAB] OR "clinical screen*"[TIAB] OR "columbia suicide severity rating scale"[TIAB] OR "computer* adaptive test*"[TIAB] OR "ec ssrs"[TIAB] OR phq9[TIAB] OR "phq-9"[TIAB] OR "one step"[TIAB] OR "patient health questionnaire"[TIAB] OR rdoc[TIAB] OR "reach vet"[TIAB] OR "research domain criteria framework"[TIAB] OR "structured assess*"[TIAB] OR "suicide assessment five-step evaluation and triage"[TIAB] OR "safe-t"[TIAB] OR "two step"[TIAB] OR "universal screen*"[TIAB] OR "unstructured assess*"[TIAB] OR "zero suicide"[TIAB]
	#4	Risk Evaluation	AI[TI] OR "artificial intelligence"[TI] OR "co morbid*"[TI] OR comorbid*[TI] OR "event report*"[TI] OR (longitudinal*[TI] AND assess*[TI]) OR "machine learning"[TI] OR "natural language process*"[TI] OR predict*[TI] OR protect*[TI] OR ((risk*[TI]) AND (algorithm*[TI] OR assess*[TI] OR biomarker*[TI] OR calculat*[TI] OR categor*[TI] OR characteristic*[TI] OR classif*[TI] OR define*[TI] OR defining[TI] OR evaluat*[TI] OR factor*[TI] OR increase*[TI] OR index[TI] OR indices[TI] OR marker*[TI] OR prioritiz*[TI] OR profile*[TI] OR reduc*[TI] OR score*[TI] OR stratif*[TI] OR suicid*[TI] OR tier*[TI])) OR "social determinant*"[TI] OR "warning sign*"[TI]
	#5	Combine Concepts	#1 AND (#2 OR #3 OR #4)
KQs 5-12	#6	Suicide	automutilat*[TIAB] OR "self destruct*"[TIAB] OR "self directed violence"[TIAB] OR "self harm*"[TIAB] OR "self immolat*"[TIAB] OR "self inflicted"[TIAB] OR "self injur*"[TIAB] OR "self mutilat*"[TIAB] OR "self wound*"[TIAB] OR suicid*[TIAB]

KQ	Set #	Description	Strategy
KQs 5-12 (cont.)	#7	Psychotherapeutic Interventions	"acceptance and commitment therapy"[TIAB] OR "anxiety sensitivity"[TIAB] OR BCBT[TIAB] OR "BCBT SP"[TIAB] OR "behavioral activation"[TIAB] OR "behavioural activation"[TIAB] OR CAMS[TIAB] OR CBT[TIAB] OR "CBTSP"[TIAB] OR "Collaborative Assessment and Management of Suicidality"[TIAB] OR dbt[TIAB] OR "dialectic* behav*"[TIAB] OR interoceptive[TIAB] OR mindful[TIAB] OR PST[TIAB] OR psychotherapeutic[TIAB] OR psychotherapist[TIAB] OR psychotherapy[TIAB] OR "teachable moment brief intervention"[TIAB] OR ((behavior*[TIAB] OR behaviour*[TIAB] OR cognitiv*[TIAB] OR "problem solving"[TIAB]) AND (counsel*[TIAB] OR intervention*[TIAB] OR psychol*[TIAB] OR psychotherap*[TIAB] OR therap*[TIAB] OR treatment*[TIAB]))
	#8	Enhanced Care Strategies	((alcohol*[TIAB] OR drug*[TIAB] OR substance*[TIAB]) AND (abuse*[TIAB] OR misus*[TIAB] OR use[TIAB] OR usage[TIAB]) AND treatment*[TIAB]) OR "alpha stim"[TIAB] OR alphastim[TIAB] OR "attempted suicide short intervention program"[TIAB] OR assip[TIAB] OR (brief*[TIAB] AND intervention*[TIAB]) OR (care[TIAB] AND (change*[TIAB] OR coordinat*[TIAB] OR environment*[TIAB] OR manage*[TIAB] OR plan*[TIAB])) OR "caring communication*"[TIAB] OR "caring contact*"[TIAB] OR "case manage*"[TIAB] OR ((cope[TIAB] OR coping[TIAB]) AND (skill*[TIAB] OR train*[TIAB])) OR (crisis[TIAB] AND (plan*[TIAB] OR respons*[TIAB])) OR dbs[TIAB] OR "deep brain stimulat*"[TIAB] OR electroconvulsiv*[TIAB] OR (firearm*[TIAB] AND (access*[TIAB] OR restrict*[TIAB])) OR (gun*[TIAB] AND (access*[TIAB] OR restrict*[TIAB])) OR "high-risk flag program"[TIAB] OR ((home*[TIAB] OR house*[TIAB]) AND (call*[TIAB] OR care[TIAB] OR caring[TIAB] OR visit*[TIAB])) OR hrsprf[TIAB] OR "hrs-prf"[TIAB] OR ("lethal means"[TIAB] AND (access*[TIAB] OR counsel*[TIAB] OR restrict*[TIAB] OR safety[TIAB])) OR neurostimulat*[TIAB] OR "patient record flag"[TIAB] OR (provider*[TIAB] AND (educat*[TIAB] OR train*[TIAB])) OR rtms[TIAB] OR (safety[TIAB] AND plan*[TIAB]) OR (suicid*[TIAB] AND prevent*[TIAB]) OR "transcranial magnetic stimulat*"[TIAB] OR "who-bic"[TIAB]

KQ	Set #	Description	Strategy
KQs 5-12 (cont.)	#9	Pharmacological Interventions	(("anti anxiety"[TIAB] OR antianxiety[TIAB] OR "anti depress*"[TIAB] OR antidepress*[TIAB] OR hypnotic*[TIAB] OR psychedelic*[TIAB] OR sedative*[TIAB]) AND (agent*[TIAB] OR drug*[TIAB] OR medication*[TIAB] OR medicine*[TIAB] OR pharmaceutical*[TIAB])) OR cannabi*[TIAB] OR (drug*[TIAB] AND (therap*[TIAB] OR treatment*[TIAB])) OR esketamine[TIAB] OR ketamine[TIAB] OR lithium[TIAB] OR marijuana[TIAB] OR naloxone[TIAB] OR pharmacological*[TIAB] OR pharmacotherap*[TIAB] OR "pharmaco-therap*"[TIAB]
	#10	Technology-based Interventions	avatar*[TI] OR ((distance[TI] OR mobile[TI] OR remote[TI] OR tele[TI] OR virtual[TI]) AND (care[TI] OR counseling[TI] OR counselor*[TI] OR consult*[TI] OR health[TI] OR medical[TI] OR medicine[TI] OR monitor*[TI] OR psychiatr*[TI] OR psycholog*[TI] OR psychotherap*[TI] OR therapy[TI] OR visit*[TI])) OR android*[TI] OR app[TI] OR apps[TI] OR asynchronous*[TI] OR automat*[TI] OR chat*[TI] OR cellphone*[TI] OR "computer based"[TI] OR cyber*[TI] OR digital[TI] OR "e health*"[TI] OR " e mail*"[TI] OR ehealth*[TI] OR email*[TI] OR "e therapy"[TI] OR etherapy[TI] OR facebook[TI] OR "face tim*"[TI] OR facetim*[TI] OR instagram*[TI] OR internet[TI] OR ipad[TI] OR iphone[TI] OR "lap top*"[TI] OR laptop*[TI] OR "m health*"[TI] OR mhealth*[TI] OR ((mobil*[TI] OR portab*[TI]) AND (computer*[TI] OR device*[TI] OR health[TI] OR tablet*[TI])) OR "on line"[TI] OR online[TI] OR phone[TI] OR phones[TI] OR podcast*[TI] OR samsung[TI] OR "short messag* service*"[TI] OR smartphone*[TI] OR ((sms[TI] OR text[TI]) AND messag*[TI]) OR (social[TI] AND (media[TI] OR network*[TI] OR platform*[TI])) OR software[TI] OR "store and forward"[TI] OR synchronous*[TI] OR teams[TI] OR technolog*[TI] OR tele[TI] OR teleconsult*[TI] OR telecounsel*[TI] OR telehealth*[TI] OR telemed*[TI] OR telemonitor*[TI] OR telephone*[TI] OR telepsych*[TI] OR telerehab*[TI] OR teletherapy[TI] OR televisit*[TI] OR texting*[TI] OR "tik tok*"[TI] OR tiktok*[TI] OR tweet*[TI] OR twitter*[TI] OR video*[TI] OR "virtual reality"[TI] OR web[TI] OR website*[TI] OR zoom[TI]
	#11	Community-based Interventions	((((caregiver*[TIAB] OR communit*[TIAB] OR families[TIAB] OR family[TIAB] OR group*[TIAB] OR mutual*[TIAB] OR parent*[TIAB] OR patient*[TIAB] OR peer*[TIAB] OR spous*[TIAB]) AND (aid[TIAB] OR assist*[TIAB] OR counsel*[TIAB] OR education*[TIAB] OR help*[TIAB] OR intervention*[TIAB] OR led[TIAB] OR program*[TIAB] OR resource*[TIAB] OR support*[TIAB] OR therap*[TIAB])) OR (crisis[TIAB] AND (hotline*[TIAB] OR line*[TIAB])) OR (("gate keeper*"[TIAB] OR gatekeeper*[TIAB]) AND (education*[TIAB] OR train*[TIAB])) OR "peer to peer"[TIAB] OR postcard*[TIAB] OR "safe messag*"[TIAB] OR (stigma*[TIAB] AND reduc*[TIAB]) OR (suicid*[TIAB] AND hotline*[TIAB]))

KQ	Set #	Description	Strategy
Combine concepts & apply study type limits	#12	Combine population & KQs 5-12 interventions	#6 AND (#7 OR #8 OR #9 OR #10 OR #11)
	#13	KQs 5-12 Systematic Reviews	#12 AND (("cochrane database syst rev"[ta] OR systematic*[ti] OR cochrane*[tiab] OR "meta analy*"[tiab] OR metaanaly*[tiab] OR (search*[tiab] AND (cinahl*[tiab] OR databases[tiab] OR ebsco*[tiab] OR embase*[tiab] OR psychinfo*[tiab] OR psycinfo*[tiab] OR "science direct*"[tiab] OR sciencedirect*[tiab] OR scopus*[tiab] OR systematic*[tiab] OR "web of knowledge*"[tiab] OR "web of science*"[tiab])) OR (systematic*[tiab] AND review*[tiab])) NOT ((protocol[ti] AND review[ti]) OR "review protocol"[ti] OR "scoping review"[ti]))
	#14	KQs 5-12 RCTs	#12 AND ("phase 3"(213) OR "phase iii"(213) OR random*(213) OR RCT(213))
	#15	Combine results for all KQs	#5 OR #13 OR #14
	#16	In process records	#15 AND (inprocess[SB] OR publisher[SB] or pubmednotmedline[SB])
	#17	Remove out of scope publication types	#16 NOT (booksdocs[Filter] OR "case report"[ti] OR comment*[ti] OR editorial[ti] OR letter[ti] OR news[ti] OR ((protocol[ti] AND (study[ti] OR trial[ti])) NOT ("therapy protocol*"[ti] OR "treatment protocol*"[ti])))
	#18	Remove out of scope age ranges	#17 NOT ((adolescen*[ti] OR babies[ti] OR baby[ti] OR boy[ti] OR boys[ti] OR child*[ti] OR girl*[ti] OR infancy[ti] OR infant*[ti] OR juvenile*[ti] OR neonat*[ti] OR newborn*[ti] OR nurser*[ti] OR paediatric*[ti] OR pediatric*[ti] OR preschool*[ti] OR "school age*"[ti] OR schoolchildren*[ti] OR teen*[ti] OR toddler*[ti] OR youth*[ti]) NOT (adult*[tiab] OR father*[ti] OR matern*[tiab] OR men[tiab] OR mother*[ti] OR parent*[ti] OR patern*[tiab] OR women[tiab]))
	#19	Date range limit	#18 AND (2022:2023[pdat]) AND (("2022/03/15"[Date - Create] : "2023/03/15"[Date - Create]))

Table H-4. PTSDpubs in ProQuest Syntax

Set #	Description	Strategy
S1	Suicide	SUBJECT(Suicide) OR ABSTRACT,TITLE(automutilat*) OR ABSTRACT,TITLE("self destruct*") OR ABSTRACT,TITLE("self directed violence") OR ABSTRACT,TITLE("self harm*") OR ABSTRACT,TITLE("self immolat*") OR ABSTRACT,TITLE("self inflicted") OR ABSTRACT,TITLE("self injur*") OR ABSTRACT,TITLE("self mutilat*") OR ABSTRACT,TITLE("self wounding") OR ABSTRACT,TITLE(suicid*)
S2	Peer reviewed publications	Limit to: Peer reviewed
S3	Date limit	Limit to 2018-04-01 - 2023-03-15

Appendix H: Alternative Text Descriptions of Algorithm

The following outline narratively describes the Assessment and Management of Patients at Risk for Suicide Algorithm. An explanation of the purpose of the algorithm and description of the various shapes used within the algorithm can be found in the Algorithm section. The sidebars referenced within this outline can also be found in the Algorithm section.

Module A: Identification of Patients at Acute Risk for Suicide

1. Module A of the algorithm begins with two rounded rectangles, Box 1 and Box 2. Box 1: "Patient presents with warning signs (may have suicidal ideation with or without intent or recent self-directed violence; see **Sidebar 1**)."

2. Box 2: "Patient presents in context where suicide risk screening occurs."

    a. Boxes 1 and 2 connect to Box 3, in the shape of a rectangle: "Screen for current suicide risk using validated tool (see **Recommendation 2**) or **Continue to Module B** to complete suicide risk assessment."

3. Box 3 connects to Box 4, in the shape of a hexagon: "Does the patient screen positive for and/or endorse suicidal ideation?"

    a. If the answer to Box 4 is No, then Box 5, in the shape of a rectangle: "Continue routine management of care and presenting concerns. Build protective factors (see **Sidebar 2**). Consider referral to mental/behavioral health."

    b. If the answer to Box 4 is Yes, then Box 6, in the shape of an oval: "Continue to **Module B: Assessment, Box 7**"

Module B: Comprehensive Suicide Risk Assessment by Provider

1. Module B of the algorithm begins with Box 7, a rounded rectangle: "Patient identified from **Module A**"

2. Box 7 connects to Box 8, a rectangle: "Complete a suicide risk assessment (see **Sidebar 2**; see **Routine Care section**)."

3. Box 8 connects to Box 9, a hexagon: "Is this patient at HIGH ACUTE RISK for suicide (see **Sidebar 3a**)?

    Core Features*

    - Suicidal ideation with intent to die by suicide AND

    - Inability to maintain safety independently without external help or support"

        a. If the answer to Box 9 is Yes, then Box 10, an oval: "Continue **to Module C: Management, Box 15**"

        b. If the answer to Box 9 is No, then Box 11, a hexagon: "Is this patient at INTERMEDIATE ACUTE RISK for suicide (see **Sidebar 3a**)?

            Core Features*

            - May present similarly to those at high acute risk, but lack intent to act on suicidal ideation and have the ability to maintain safety independently"

4. If the answer to Box 11 is Yes, then Box 12, an oval: "Continue to **Module C: Management, Box 24**"

5. If the answer to Box 11 is No, then Box 13, a rounded rectangle: "Patient identified to be at LOW ACUTE RISK for suicide (see **Sidebar 3a**)

    Core Features*

    - No current suicidal intent AND

    - No specific and current suicidal plan AND

    - No recent preparatory behaviors AND

    - Collective high confidence (e.g., patient, care provide, family member) in the ability of the patient to independently maintain safety"

6. Box 13 connects to Box 14, an oval: "**Continue to Module C: Management, Box 29**"

* Source: Rocky Mountain MIRECC Therapeutic Risk Management – Risk Stratification Table. The 2024 Suicide Risk CPG's systematic evidence review did not identify evidence to recommend one risk assessment or stratification tool over another. This tool, which is based on best practices, is included as an example. Available at: https://www.mirecc.va.gov/visn19/trm/

Module C: Management of Patients at Acute Risk for Suicide

1. Module C of the algorithm begins with three boxes, Box 15, Box 24, and Box 29, in the shape of rounded rectangles.

    a. Box 15: "Patient at HIGH ACUTE RISK for suicide"

    b. Box 24: "Patient at INTERMEDIATE ACUTE RISK for suicide"

    c. Box 29: "Patient at LOW ACUTE RISK for suicide"

2. Box 15 connects to Box 16, a rectangle: "Directly observe patients and keep them in an environment with limited access to lethal means (e.g., keep away from sharps, cords or tubing, toxic substances) until they are transferred to a safe environment or are no longer at high acute risk."

3. Box 16 connects to Box 17, a hexagon: "Is psychiatric hospitalization feasible and indicated to maintain safety?"

    a. If the answer to Box 17 is Yes, then Box 18, a rectangle, "Follow local procedures for hospitalization, which may include the need for involuntary hospitalization."

    b. If the answer to Box 17 is No, then Box 20, a rectangle: "Continue to ensure patient safety in care setting; target modifiable risk and protective factors as is feasible (see **Sidebar 4**)."

4. Box 18 connects to Box 19, a rectangle: "During hospitalization target modifiable risk and protective factors (see **Sidebar 4**). Initiate evidence-based treatment to reduce suicide risk and co-occurring conditions (see **Sidebar 5**)."

5. Box 19 and Box 20 connect to Box 21, a hexagon: "Has the patient's risk for suicide decreased to intermediate or low?"

    a. If the answer to Box 21 is Yes, then Box 22, an oval: "If the patient was hospitalized and is to be discharged, consider intervention in **Sidebar 5**. Return to **Module B: Comprehensive Suicide Risk Assessment**"

    b. If the answer to Box 21 is No, then Box 23, an oval: "Continue to implement risk mitigation strategies noted in **Box 20**"

6. Box 24, back at the beginning of Module C, a rounded rectangle: "Patient at INTERMEDIATE ACUTE RISK for suicide"

7. Box 24 connects to Box 25, a hexagon: "Is the patient able to independently maintain safety AND do the benefits of outpatient management outweigh the risks of hospitalization?"

    a. If the answer to Box 25 is Yes, then Box 26, a rectangle: "Provide enhanced care management, which should include:

    - Frequent contact,

    - Re-assessment of risk (see **Sidebar 3b**)

- Development or update of safety plan, and

- Lethal means safety counseling

Outpatient care should address the factors contributing to elevation in acute risk (e.g., exacerbation of symptoms, housing concerns) and modifiable risk factors (see **Sidebars 4 and 5**).

For individuals being discharged from acute care settings (see **Sidebar 5)**.”

b. If the answer to Box 25 is No, then Box 18, a rectangle: “Follow local procedures for hospitalization, which may include the need for involuntary hospitalization.”

8. Box 26 connects to Box 27, a hexagon: “Has the patient’s acute risk for suicide decreased to low?”

a. If the answer to Box 27 is Yes, then Box 28, an oval: “Continue to **Module C: Management, Box 29**”

b. If the answer to Box 27 is No, then Box 24, a rounded rectangle: “Patient at INTERMEDIATE ACUTE RISK for suicide”

9. Box 29, back at the beginning of Module C, a rounded rectangle: “Patient at LOW ACUTE RISK for suicide”

10. Box 29 connects to Box 30, a rectangle: “Focus care on mitigation of **CHRONIC RISK** through enhancing protective factors and reducing modifiable risk factors (see **Sidebars 3b and 4**).

Consider upstream suicide prevention, health promotion interventions, and applicable resources (e.g., financial, housing).

Consider interventions outlined in **Sidebar 5**.

Outpatient mental/behavioral health treatment may be indicated, particularly if suicidal ideation and psychiatric symptoms are co-occurring

Risk should be re-assessed per clinical judgement.”

11. Box 30 connects to Box 31, an oval: “Continue **Management per Box 30**”

Appendix I: Abbreviations

Abbreviation	Definition
AHRQ	Agency for Healthcare Research and Quality
AI	artificial intelligence
ASIST	Applied Suicide Intervention Skills Training
BDI	Beck Depression Inventory
BIC	brief intervention and contact
BPD	borderline personality disorder
BSSI	Beck Scale for Suicidal Ideation
BSSI-C	Beck Scale for Suicidal Ideation-Current
CAMS	Collaborative Assessment and Management of Suicidality
CARF	Commission on Accreditation of Rehabilitation Facilities
CBT	cognitive behavioral therapy
CDC	Centers for Disease Control and Prevention
COI	conflict of interest
COPD	chronic obstructive pulmonary disease
CPG	clinical practice guideline
CRP	Crisis Response Planning
C-SSRS	Columbia Suicide Severity Rating Scale
DBT	dialectical behavior therapy
DHA	Defense Health Agency
DoD	Department of Defense
DoDI	Department of Defense Instructions
EBPWG	Evidence-Based Practice Work Group
ED	Emergency department
EMI	ecological momentary intervention
ETAU	enhanced treatment as usual
FAIR	Findable, Accessible, Interoperable, Reusable
FDA	Federal Drug Administration
GRADE	Grading of Recommendations Assessment, Development, and Evaluation
KQ	key question
LMS	lethal means safety
MA	meta-analysis
MDD	major depressive disorder
MIRECC	Mental Illness, Research, Education, and Clinical Center

Abbreviation	Definition
NAM	National Academy of Medicine
NICE	National Institute for Health and Care Excellence
OR	odds ratio
OUD	opioid use disorder
PHQ-9	Patient Health Questionnaire-9
PICOTS	population, intervention, comparison, outcome, timing, and setting
PST	problem-solving therapy
PTSD	posttraumatic stress disorder
P2P	peer-to-peer
QoL	quality of life
RCT	randomized controlled trial
REACH VET	Recovery Engagement and Coordination for Health-Veterans Enhanced Treatment
REMS	Risk Evaluation and Mitigation Strategy
RDoC	Research Domain Criteria
rTMS	repetitive transcranial magnetic stimulation
SDV	self-directed violence
SES	socioeconomic status
SPI	Safety Planning Intervention
SR	systematic review
SSF	Suicide Status Form
SUD	substance use disorder
TAPS	Tragedy Assistance Program for Survivors
TAU	treatment as usual
TBI	traumatic brain injury
TJC	The Joint Commission
U.S.	United States
USPSTF	U.S. Preventive Services Task Force
VA	Department of Veterans Affairs
VHA	Veterans Health Administration
VSAIL	Vanderbilt Suicide Attempt and Ideation Likelihood
WHO	World Health Organization

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