Identifying Individual-Level Reponses: Risk and Strategies

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Disclaimer and Disclosure

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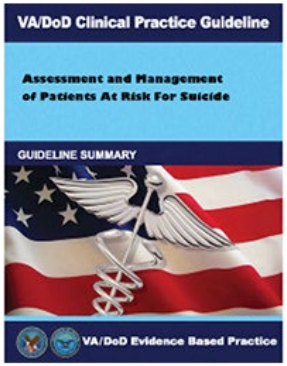
VA DoD Clinical Practice Guidelines (2019)



- 22 Recommendations
- Strength of the recommendations follows the level of evidence
  - 4 domains used to determine strength and direction of the evidence
    - Relative strength (Strong or Weak)
    - Direction (For or Against)
- In many cases, sufficient research has yet to be conducted; thereby highlighting an opportunity to engage in continued rigorous efforts to evaluate practices to augment the existing evidence-base

Screening and Evaluation

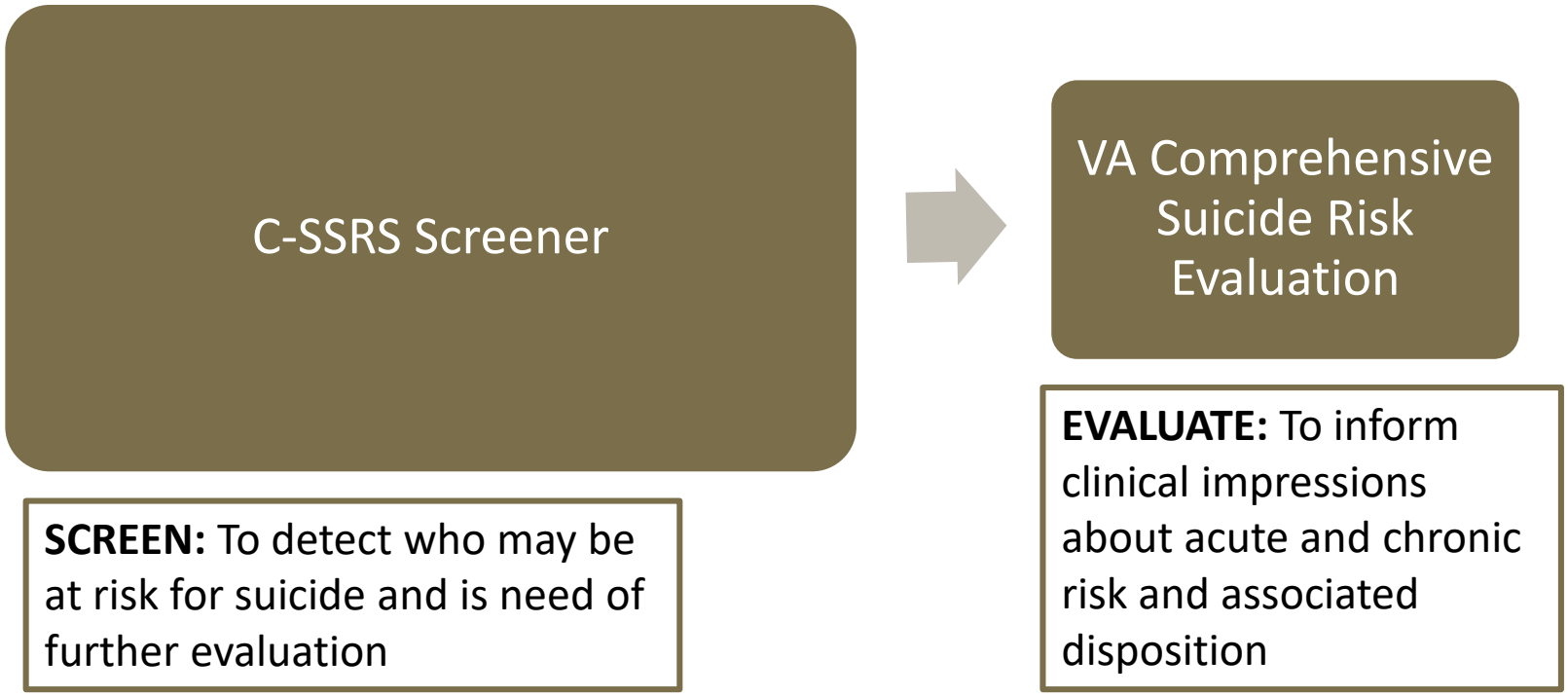
SCREEN: To detect who may be at risk for suicide and is need of further evaluation

EVALUATE: To inform clinical impressions about acute and chronic risk and associated disposition

Screening and Evaluation

Topic	Sub-topic	#	Recommendation	Strength*	Category†
Screening and Evaluation	*a. Screening*	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
		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
	b. Evaluation	3.	We recommend an assessment of risk factors as part of a comprehensive evaluation of suicide risk, including but not limited to: current suicidal ideation, prior suicide attempt(s), current psychiatric conditions (e.g., mood disorders, substance use disorders) or symptoms (e.g., hopelessness, insomnia, and agitation), prior psychiatric hospitalization, recent bio-psychosocial stressors, and the availability of firearms.	Strong for	Reviewed, New-replaced
		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
		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

VA Risk ID: Two-Stage Process



This process is implemented in a clinical setting in which C-SSRS false positives or negatives can be addressed.

What if there are groups of individuals who are more willing to communicate emotional distress online than to adults or healthcare providers?

What if providers don't see patients enough to ask about suicide at the most important time?

What if providers don't feel comfortable asking about suicide?

What if our screening/evaluation tools are neither sensitive nor specific enough to identify risk?

Natural Language Processing of Social Media as Screening for Suicide Risk

Glen Coppersmith, Ryan Leary, Patrick Crutchley and Alex Fine

Qntfy, Boston, MA, USA.

Biomedical Informatics Insights
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SAGE

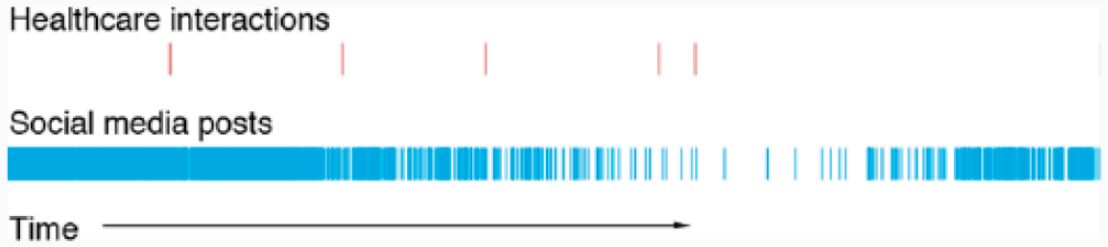

Figure 1. One example: person's interaction with the health care system (in red hashes) and with a social media platform (in blue hashes) over a period of 4 years (*x*-axis, left is earlier in time, right is later in time). Social media provides information in the "clinical whitespace"[15] between interactions with the health care system. Summarized from health record data presented in Padrez et al.[16]

Suicide and Self Injury

Policy Rationale

We care deeply about the safety of the people who use our apps. We regularly consult with experts in suicide and self-injury to help inform our policies and enforcement, and work with organizations around the world to provide assistance to people in distress.

While we do not allow people to intentionally or unintentionally celebrate or promote suicide or self-injury, we do allow people to discuss these topics because we want Facebook to be a space where people can share their experiences, raise awareness about these issues, and seek support from one another.

https://transparency.fb.com/policies/community-standards/suicide-self-injury/

Connecting people in need with resources

When someone is expressing thoughts of suicide, it can be critical to get help as quickly as possible.

Suicide prevention resources have been available on Facebook for more than 10 years. These resources were developed in collaboration with mental health organizations such as Save.org, National Suicide Prevention Lifeline, Forefront and Crisis Text Line, as well as with input from people who have personal experience thinking about or attempting suicide.

If people see someone posting content about suicide, they can report the post and it will be reviewed by trained members of our Community Operations team, who can connect that person with support resources if needed.

In 2017, we began using machine learning in many countries to expand our ability to identify possible suicide or self-injury content and to get timely help to people in need. This technology uses pattern-recognition signals, such as phrases in posts and concerned comments from friends and family, to identify possible suicide or self-injury content. This helps us respond to reports faster.

We use artificial intelligence to prioritize the order in which our team reviews reported posts, videos and live streams. This ensures we can efficiently enforce our policies and get resources to people quickly. It also lets our reviewers to prioritize more urgent posts, allowing them to contact emergency services when members of our community might be at risk of harm. Speed is critical.

In addition to those content-moderation AI tools, we're using automation so the team can more quickly access the appropriate first responders' contact information.

By using technology to prioritize and streamline these reports, we are able to escalate the content to our Community Operations team, who can more quickly decide whether there are policy violations and whether to recommend contacting local emergency responders. We are committed to continuing to invest in technology to better serve our community.

https://www.facebook.com/safety/wellbeing/suicideprevention

In serious cases, where our Community Operations team is concerned about imminent danger of self-harm, Facebook may contact emergency services to conduct a wellness check. Thanks to our technology or as a result of reports from friends and family on Facebook and Instagram, we've helped first responders quickly reach people globally who needed help. We also provide resources and support to the person who flagged the troubling post, including options for them to call or message their distressed friend letting them know they care, or reaching out to another friend or a trained professional at a suicide hotline for support. All of these resources were created in partnership with our clinical and academic partners. In addition, our content-moderation efforts have helped to significantly reduce the amount of harmful content that people are exposed to.

- Time
- Method
- Intent

https://www.facebook.com/safety/wellbeing/suicideprevention

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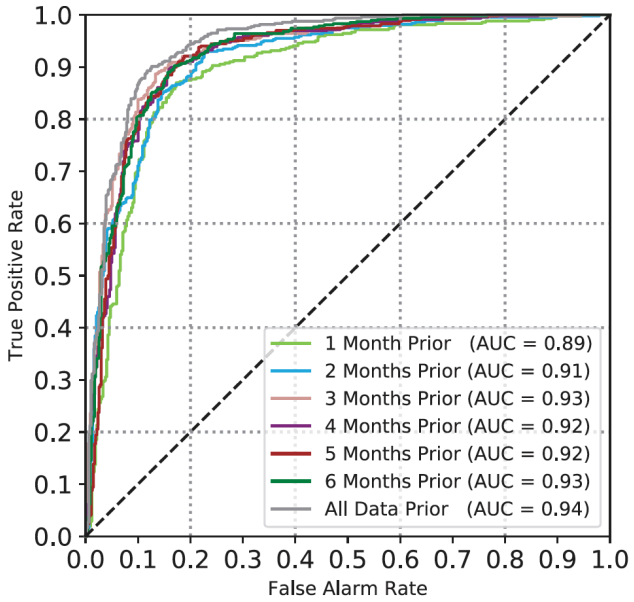


Figure 6. ROC curves for models separating users prior to a suicide attempt from their matched controls. The green line only uses data for the month prior to the suicide attempt to make the classification (30 to 0 days prior), the blue line uses data from 2 months prior (60 to 0 days prior), and so on. The black line indicates performance using all of the data available for that user prior to their attempt. ROC indicates receiver operating characteristic.

Ultimately, we found that performance was roughly comparable if we examined data a few months prior (180 to 90 days prior) to the attempt and excluded data immediately preceding the attempt (90 to 0 days prior). Thus, that suggests that the model is capturing trait-type information (relevant to risk for suicide at some point in time) rather than state-type information (relevant to imminent risk of harm). Thus, that suggests that the model is capturing trait-type information (relevant to risk for suicide at some point in time) rather than state-type information (relevant to imminent risk of harm).

ACUTE Therapeutic Risk Management – *Risk Stratification Table*

ROCKY MOUNTAIN MIRECC

HIGH ACUTE RISK

Essential Features

- **Suicidal ideation with intent to die by suicide**
- **Inability to maintain safety independent external support/help**

Common Warning Signs

- A plan for suicide
- Recent attempt and/or ongoing preparatory behaviors
- Acute major mental illness (e.g., MDD episode, acute mania, acute psychosis, recent/current drug relapse)
- Exacerbation of personality disorder (e.g., increased borderline symptomatology)

Common Risk Factors

- Access to means
- Acute psychosocial stressors (e.g., job loss, relationship dissolution, relapse on alcohol)

Action

Typically requires psychiatric hospitalization to maintain safety and aggressively target modifiable factors.

These individuals need to be directly observed until on a secure unit and kept in an environment with limited access to lethal means (e.g. keep away from sharps, cords/tubing, toxic substances).

During hospitalization co-occurring psychiatric symptoms should also be addressed.

INTERMEDIATE ACUTE RISK

Essential Features

- **Suicidal ideation to die by suicide**
- **Ability to maintain safety, independent of external support/help**

These individuals may present similarly to those at high acute risk, sharing many of the features. The only difference may be lack of intent, based upon 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.

Action

Consider psychiatric hospitalization, if related factors driving risk are responsive to inpatient treatment (e.g. acute psychosis).

Outpatient management of suicidal thoughts and/or behaviors should be intensive and include:

- frequent contact,
- regular re-assessment of risk, and
- a well-articulated safety plan

Mental health treatment should also address co-occurring psychiatric symptoms.

LOW ACUTE RISK

Essential Features

- **No current suicidal intent AND**
- **No specific and current suicidal plan AND**
- **No preparatory behaviors AND**
- **Collective high confidence** (e.g., patient, care provider, family member) in the ability of the patient to independently maintain safety

Individuals may 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 and/or vague, and without any associated preparatory behaviors (e.g., "I'd shoot myself if things got bad enough, but I don't have a gun"). These patients will be capable of engaging appropriate coping strategies, and willing and able to utilize a safety plan in a crisis situation.

Action

Can be managed in primary care.

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

*Overall level of individual risk may be increased or decreased based upon warning signs, risk factors and **protective factors**

CHRONIC Therapeutic Risk Management – *Risk Stratification Table*

ROCKY MOUNTAIN MIRECC

HIGH CHRONIC RISK

Essential Features

Common Warning Sign

- Chronic suicidal ideation

Common Risk Factors

- Chronic major mental illness and/or personality disorder
- History of prior suicide attempt(s)
- History of substance abuse/dependence
- Chronic pain
- Chronic medical condition
- Limited coping skills
- Unstable or turbulent psychosocial status (e.g. unstable housing, erratic relationships, marginal employment)
- Limited ability to identify reasons for living

Action

These individuals are considered to be at chronic risk for becoming acutely suicidal, often in the context of unpredictable situational contingencies (e.g., job loss, loss of relationships, and relapse on drugs).

These individuals typically require:

- routine mental health follow-up
- a well-articulated safety plan, including means safety (e.g., no access to guns, limited medication supply)
- routine suicide risk screening
- coping skills building
- management of co-occurring psychiatric symptoms

INTERMEDIATE CHRONIC RISK

Essential Features

These individuals may feature similar chronicity as those at high chronic risk with respect to psychiatric, substance abuse, medical and painful conditions.

Protective factors, coping skills, reasons for living, and relative psychosocial stability suggest enhanced ability to endure future crisis without resorting to self-directed violence.

Action

These individuals typically require:

- routine mental health care to optimize psychiatric condition and maintain/enhance coping skills and protective factors.
- a well articulated safety plan, including means safety (e.g., no access to guns, limited medication supply)
- management of co-occurring psychiatric symptoms

LOW CHRONIC RISK

Essential Features

These individuals may range from persons with no or little in the way of mental health or substance abuse problems, to persons with significant mental illness that is associated with relatively abundant strengths/resources.

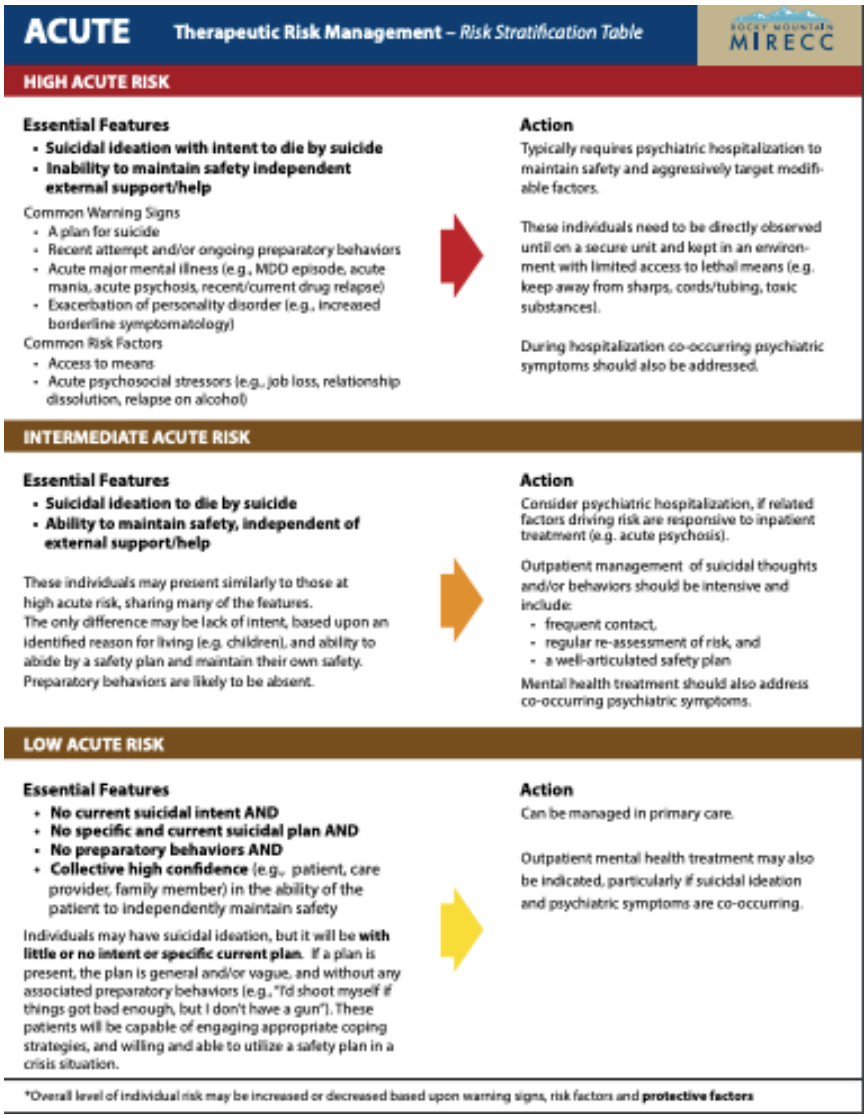
Stressors historically have typically been endured absent suicidal ideation.

The following factors will generally be missing

- history of self-directed violence
- chronic suicidal ideation
- tendency towards being highly impulsive
- risky behaviors
- marginal psychosocial functioning

Action

Appropriate for mental health care on an as needed basis, some may be managed in primary care settings. Others may require mental health follow-up to continue successful treatments.



ACUTE Therapeutic Risk Management – *Risk Stratification Table*

ROCKY MOUNTAIN MIRECC

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During hospitalization co-occurring psychiatric symptoms should also be addressed.

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Can be managed in primary care.

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*Overall level of individual risk may be increased or decreased based upon warning signs, risk factors and **protective factors**

Risk Assessment

How should data regarding between cohort differences, in terms of social media-related behavior, be incorporated?

Older vs. Younger
Geographic Location
Race/Ethnicity/Cultural Background/Language

Ethics

What are the implications of intervening based on limited data?

Can and should data be shared with family members or providers?

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Original Article

Legal, ethical, and wider implications of suicide risk detection systems in social media platforms

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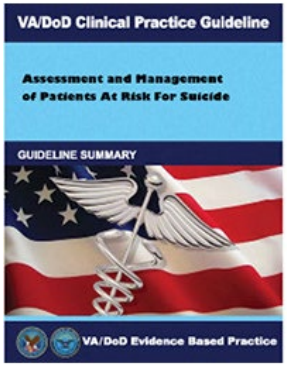

D. Knowledge Gaps and Recommended Research

During the development of the 2019 Suicide Risk CPG, the Work Group identified many topics for future research. Projects to address these topics will lead to stronger evidence to support current recommendations, as well as new evidence to guide future CPGs.

a. Screening for Suicide Risk

We found that there is limited evidence for using universal screening programs to identify individuals at risk for suicide-related behavior. Some evidence supports the use of the PHQ-9 item 9 as a screening instrument to identify patients with elevated suicide risk. Current research needs identified include:

- Assessing and improving temporal accuracy of screening and assessment tools. This includes development and evaluation of screening tools to predict suicide behaviors occurring across various outcome timeframes (e.g., less than one month versus long-term risk)
- Identification of suicide risk subtypes (e.g., acute versus chronic risk)
- Development and testing of strategies to predict and stratify risk that integrate multiple risk prediction methods and data sources, for example combinations of self-report, predictive analytics models which use data from the electronic health record, and/or other data sources
- Further assessment of alternative methods for administering suicide screening questions
- Determination of the appropriate frequency of screening; this topic includes evaluation of whether over-screening has impact on positive and negative predictive value of the instrument, as well as on patient satisfaction, trust, and engagement

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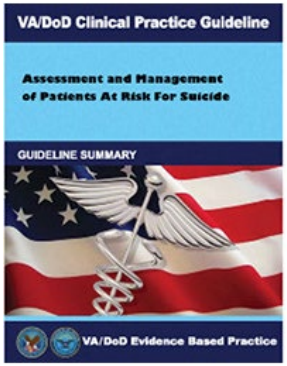

b. Evaluation, Determining Level of Risk, and Relationship to Treatment

There is insufficient evidence to recommend for or against the use of risk stratification methods to determine levels of acute or chronic suicide risk. We suggest that when performing a suicide risk evaluation, multiple instruments or methods be used. Areas for future research include:

- Determination of the extent to which screening leads to comprehensive suicide risk evaluation, treatment referral and engagement, receipt of high-quality treatment, and improvement in health outcomes
- Use of screening and assessment results to stratify risk and determine treatment that is tailored to the predicted level of risk
- The most appropriate setting of care for patients at risk for suicide; this research will require evidence-based risk stratification processes
- Clarify which evidence-based interventions for suicide prevention are most appropriate in which care settings (e.g., inpatient, intensive outpatient, outpatient)

https://www.mirecc.va.gov/visn19/consult/request-a-consult.asp

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