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**Implementation of the Columbia-Suicide Severity Rating Scale at an Outpatient Mental Health
Practice to Increase Provider Confidence in Identifying Suicide Risk**

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Abstract

Introduction: The purpose of this evidence-based Doctor of Nursing Practice project was to implement the Columbia-Suicide Severity Rating Scale (C-SSRS) as part of routine patient assessment at an outpatient mental health practice to increase the likelihood of identifying clients at risk for suicidal behavior and increase provider confidence in screening for suicidal behavior. The study site is a Southern California-based outpatient mental health practice that employs a variety of clinicians, including psychiatric-mental health nurse practitioners, to provide mental health care to clients across the lifespan.

Background: Approximately 57% of individuals who die by suicide had at least one contact with mental health providers during their lifetime, and 21% had contact within 1 month of dying. Early detection of suicidal ideation and behavior is key to reducing the occurrence of suicide in patients receiving mental health care. Traditionally, mental health clinicians use a variety of techniques to assess for the presence of suicidal ideation, but comprehensive suicide assessments should also determine whether an individual has intent or a plan to attempt suicide, as well as whether any suicide attempts have been made previously. The C-SSRS has been proven to be an effective tool to reliably screen for suicide risk in a variety of patient populations, with a focus on stratifying risk based on a number of contributing client factors, including previous suicidal behavior, current intent to commit suicide, and the presence of a method and/or plan for suicide.

Methods: A small outpatient mental health practice in La Jolla, California was partnered with for this implementation project. From 12/5/2022-2/5/2023, all new patients at the practice received an online version of the C-SSRS to complete prior to their initial evaluation. Those who screened positive for any degree of suicide risk continued to complete the C-SSRS prior to each subsequent visit. Data collected from this intervention period were compared to data collected via chart review for all new patient intakes that occurred over a 2-month preintervention period in fall 2022 to compare and contrast suicide screening rates and processes, as well as to identify themes in suicide assessment between the two samples. Providers at the practice also completed a modified version of the Zero Suicide Workforce Survey prior to receiving a recorded presentation on the C-SSRS and project overview; these providers then completed the same survey at the end of the intervention phase to assess for changes in their confidence in assessing for suicidal behavior.

Results: Adding the C-SSRS to new patient intake forms resulted in increased screening for suicidal ideation for new patients and improvements in suicide risk stratification. Providers also reported increased confidence in assessing and treating suicidal behavior. Qualitative evaluation led to identification of several opportunities to improve provider workflows in assessing, documenting, and treating suicide risk in the course of routine outpatient treatment.

Evaluation: Implementation of suicide screening with the C-SSRS at the project site led to an increase in suicide risk identification and elevated provider confidence in assessing for suicide risk factors. Accurate and standardized suicide screening is the first step in preventing suicide in outpatient settings. Future projects should be implemented to develop treatment protocols based on identified suicide risk levels and standardize documentation of completed suicide risk assessments.

Keywords: Suicide, Suicide Screening, Columbia-Suicide Severity Rating Scale, Provider Confidence.

Implementation of the Columbia-Suicide Severity Rating Scale at an Outpatient Mental Health Practice to Increase Provider Confidence in Identifying Suicide Risk

Background and Significance of Problem

Suicide pervades every demographic, age group, culture, and population across the world. In the United States, deaths by suicide have increased more than 30% since 2000, and suicide is one of the leading causes of death among adolescents and young adults (Hedegaard et al., 2018). Suicide is often discussed in the context of mental health, and mental health providers are expected to assess for suicidal thoughts or behavior as part of routine care (Silverman et al., 2015); despite this expectation, 21% of individuals who die by suicide have seen a mental health care provider in the last month, and 10% have seen a provider in the week leading up to death (Stene-Larsen & Reneflot, 2019). Assessment of suicidal thoughts and behavior is complicated by the fact there are no universal criteria defining suicidality (Harmer et al., 2022). A myriad of suicide screening and assessment tools have been developed, but identifying and treating suicidal behavior ultimately relies on clinician judgment (Silverman et al., 2015).

Because assessment and treatment of suicide require training and clinical experience, individual health care practice settings must define guidelines for management of suicide that fit their specific population's needs and providers' skills and training. These guidelines should be evidence-based and standardized to reduce the risk of clinician bias that regularly occurs in suicide assessment (Greist et al., 2014). For this evidence-based practice (EBP) project, a Southern California-based outpatient mental health practice was partnered with to standardize suicide screening practices among clinicians. Prior to this project, no standardized suicide screening guidelines existed at the project site, leading to variations among providers in the assessment and treatment of suicide. Key stakeholders at the project site expressed interest in identifying an evidence-based intervention for suicide screening that could be implemented without significant workflow burden to providers.

Literature Review

PICO Question

Once a clinical problem has been identified, it is beneficial to use a PICO question to clarify the focus of an evidence-based practice change (Brown & Ecoff, 2011). Development of this project began with formulating the following PICO question: In outpatient mental health settings, does the use of the Columbia-Suicide Severity Rating Scale (C-SSRS) to screen for suicide risk, compared to the standard of care, lead to increased provider confidence in identifying suicidal behavior and increased frequency of suicide screening at initial visits?

Literature Selection

Given the multi-faceted nature of this project, a broad literature review was conducted to identify current research on suicide and its effects within the U.S. healthcare system, evidence-supported suicide screening and assessment tools, and tools for assessing provider confidence in addressing suicide in outpatient settings. Databases searched include PubMed, CINAHL, The Cochrane Database of Systematic Reviews, and Ovid. Initial database queries included various combinations of the following search terms: *Columbia suicide severity rating scale, outpatient, practice, clinic, mental health, psychiatry, suicide risk, confidence, provider, suicide, screening, and assessment*. Article titles and abstracts were screened for relevance to the practice project. Further literature was identified via backward and forward reference searching of the relevant articles identified during the initial review.

Suicide Screening and Assessment

Just as there is no universally accepted definition of suicidal ideation and behavior, there is no universally accepted approach to suicide screening and assessment (Runeson et al., 2017). A comprehensive suicide risk assessment typically begins with screening the client for suicide risk factors; those who screen positive for suicide risk require further assessment to identify specific thoughts and behaviors which may precipitate a suicide attempt (Harmer et al., 2022). According to Harmer et al

(2022), simply asking about the presence of suicidal thoughts is not an adequate suicide assessment, as up to 75% of individuals who have died by suicide denied suicidal ideation prior to death. Suicide screening and assessment tools may be used to identify thoughts and behaviors commonly associated with suicide risk, but Silverman et al. (2015) affirmed a trained clinician's judgment is required to fully identify an individual's risk for suicide. This is further supported by Runeson et al. (2017), who noted no individual suicide assessment tool has displayed an adequate degree of sensitivity and specificity to definitively identify individuals at risk for suicide. Ryan and Oquendo (2020) claimed, "Suicide risk assessment remains a high-stakes component of the psychiatric evaluation and can lead to overly restrictive management in the name of prevention or to inadequate intervention because of poor appreciation of the severity of risk" (p.88), summarizing the challenge providers face when treating individuals who may be suicidal.

Ethical Issues in Suicide Research

One of the key issues preventing the development of highly specific and sensitive suicide assessment tools is the lack of consensus regarding how to research suicidal behavior ethically. Thorell et al. (2019) addressed the low accuracy of most suicide screening tools that were identified by Runeson et al. (2017) and others by describing the paradoxes surrounding suicide screening research; they noted current ethical guidelines in research settings require individuals who are identified as high-risk for suicide to be emergently treated to prevent death or serious injury. When new suicide screening tools are developed, individuals who screen positive for suicide risk on the new tool are pulled from the study and diverted to treatment, thereby impairing the validity of the tool and confounding the results of the study; while this is a reasonable intervention given the severity of suicidal behaviors, it inherently impedes the accuracy of any tool developed to assess for suicide risk (Thorell et al., 2019). Nugent et al. (2019) further discussed the ethical issues facing suicide researchers, attesting current ethical guidelines have not only impeded meaningful research on suicide but may be limiting access to care for individuals

at risk for suicide. Overall, the current body of research on suicide screening and assessment likely undervalues the benefit of standardized suicide assessment tools.

The Columbia-Suicide Severity Rating Scale

Despite the difficulty in validating suicide assessment tools, the C-SSRS has been validated and widely adopted throughout the U.S. healthcare system, likely in part due to the Joint Commission's recommendation for its use in general healthcare settings (Joint Commission, 2018). The C-SSRS was designed to assess suicidal ideation and suicidal behavior as separate domains and includes a stratification of the severity of these symptoms (Posner et al., 2011). Multiple versions of the C-SSRS have been created, with variations based on symptom timeframe (e.g., lifetime, recent, since last health care visit), health care setting, and use by clinicians or laypersons and patients (i.e., self-report; The Columbia Lighthouse Project, n.d.). The C-SSRS has been validated in multiple treatment settings (Posner et al., 2011) and maintained validity when filled out by patients electronically without clinician administration— in fact, provider bias was reduced when the tool was used in this manner, leading to increased accuracy (Greist et al., 2014).

While the C-SSRS has been validated for use in outpatient settings, it cannot replace a trained provider's suicide risk assessment. Simpson et al. (2020) found suicide screening with the C-SSRS did not identify a small number of emergency department patients who later died by suicide, particularly in those patients who did not receive psychiatric evaluation. Giddens et al. (2014) also asserted use of the C-SSRS for suicide screening may lead to false negatives given the tool's stepwise approach to suicide screening does not test for all combinations of suicidal ideation, intent, preparatory acts, or planning; for example, an individual may intend to kill themselves at a later date but deny suicidal ideation on assessment prior to that time (this behavior has been observed anecdotally in individuals planning to die once life insurance coverage is active). In this case, the C-SSRS would not be sensitive to the patient's future suicide risk without the presence of suicidal ideation at the time of screening. These drawbacks to

using the C-SSRS for suicide screening emphasize its role within a comprehensive suicide risk assessment by a trained provider. Despite these limitations, the C-SSRS may be used as part of a comprehensive suicide assessment and treatment protocol, but it is also reliable when used as a suicide screening tool prior to a trained provider's suicide risk assessment (Joint Commission, 2018). Due to its ease of use and ability to be completed by patients prior to meeting with a provider, the C-SSRS is a reasonable tool to use in outpatient mental health settings to support standardized suicide screening.

Provider Confidence in Suicide Screening

Throughout the literature on suicide, the need for assessment by trained providers is affirmed (Harmer et al., 2022; Ryan & Oquendo, 2020; Silverman et al., 2015). While suicidal behavior is often linked to the presence of a mental health disorder, many individuals who die by suicide do not have a diagnosed psychiatric illness (Nugent et al., 2019), and 44% of those individuals will see a primary health provider in the month before death (Stene-Larsen & Reneflot, 2019). Despite suicide's prevalence throughout the U.S. healthcare system, only one-third of healthcare providers reported having an adequate knowledge of suicide risk factors, and only 35.5% of providers reported using a standardized tool to screen or assess for suicide (Harmer et al., 2022). Fortunately, Wakai et al. (2020) observed brief suicide prevention training increased providers' self-reported confidence and skill level in assessing and treating suicide. In outpatient mental health care settings, providers who report higher levels of confidence in suicide assessment and treatment were more likely to use evidence-based practices for preventing suicide (Loparo et al., 2019). Both Loparo et al. (2019) and Wakai et al. (2020) used the Zero Suicide Workforce Survey (ZSWS) to assess clinicians' knowledge and confidence in suicide prevention. The ZSWS was developed to assist organizations in assessing providers' training in suicide prevention and identifying opportunities for improving suicide treatment (Zero Suicide, n.d.). In addition, the ZSWS is designed to be adapted to an organization's specific assessment needs, and its suicide skills confidence subscale has been shown to have good reliability ($\alpha=0.84$; Wakai et al., 2020). With its

adaptability and demonstrated reliability, the ZSWS can be easily modified by individual organizations to assess provider confidence in assessing and treating suicide, which is particularly useful in outpatient mental health settings where suicide assessment is part of routine psychiatric evaluation (Silverman et al., 2015).

Purpose

Two primary goals were developed for this project to address suicide screening and provider confidence. The first goal of this project was to increase the frequency of standardized suicide screening during initial patient visits at the project site, as initial suicide screening is both useful for suicide prevention and establishes a baseline measure of suicidality prior to beginning treatment. A secondary goal was to increase follow-up suicide screening rates for individuals who screened positive for suicide risk during the initial visit, which would help trend suicide risk over time and ensure changes in suicidal behavior are not missed between visits.

The second overarching goal for this project was to increase provider confidence in identifying patients at risk for suicide, which is important given the high rate of mental health visits prior to suicide in at-risk individuals (Stene-Larsen & Reneflot, 2019). Secondary goals included increasing provider knowledge related to suicide assessment and treatment and improving providers' familiarity with suicide treatment policies at the project site. These two primary goals were developed to guide the formation of evidence-based treatments and outcome measurements during project implementation.

Project Implementation

Evidence-Based Intervention

To support the goal of increasing suicide screening for all new patients at the project site, the C-SSRS lifetime/recent form (see Appendix A) was added to the site's electronic health record (EHR) and sent to all new clients prior to their first visit. The use of this form in a digital, patient-facing format is supported by Greist et al. (2014). Providers were instructed to review the completed C-SSRS as part of

the initial assessment, and office staff were alerted to send clients a follow-up C-SSRS prior to future visits if the initial screening demonstrated any degree of suicide risk.

To address the second primary goal of increasing provider confidence in suicide screening and assessment, clinicians at the project site reviewed a recorded presentation on suicide screening and the use of the C-SSRS to stratify suicide risk. This presentation was developed by the authors and was made available to providers once they completed a baseline confidence survey. The ZSWS was used for this purpose and was limited to sections three and four of the original survey (see Appendix B), which is consistent with its intended use and modifiable format (Zero Suicide, n.d.). Providers reviewed the recorded presentation prior to implementing the C-SSRS at the project site to increase their familiarity with the tool. Following the completion of the intervention phase, providers again completed the ZSWS to compare pre and postintervention confidence levels.

Evidence-Based Practice Model

The San Diego 8As EBP model (Brown & Ecoff, 2011) was used when developing this evidence-based implementation project. This model was chosen for its clear and concise steps that guide EBP identification, implementation, and dissemination, making it ideal for creating and sustaining change in a variety of practice settings.

Practice Change Process

The implementation phase of this project was developed with collaboration from key stakeholders at the project site. The University of San Diego's institutional review board evaluated and approved the project in October 2022 prior to any data collection or intervention. Following completion of the intervention phase, project outcomes were evaluated, and relevant findings were disseminated to site stakeholders.

Goal 1: Increasing Suicide Screening Rates

The C-SSRS lifetime/recent screening form was added to the project site's EHR, and all new patients from December 5th, 2022–February 5th, 2023, received this form as part of their online patient intake documentation. Those new patients who screened positive for having low, moderate, or high suicide risk completed another C-SSRS form prior to each follow-up visit to identify changes in suicide risk between visits; the follow-up C-SSRS form specifically screened for suicide risk factors that were present in the time since the patient's last visit. Chart auditing was completed during the timeframe to identify new patients; a total of 165 patient charts were audited during the intervention phase, with one additional chart excluded due to privacy concerns. For comparison, the charts for all new patients from October 1st–November 3th, 2022, were audited to identify changes in suicide screening and assessment rates; 127 new patients were seen during this timeframe, and chart audits were completed for all of them without exclusion. These two sample pools were evaluated to compare suicide screening rates, provider trends in suicide prevention and treatment, and any notable patient outcomes associated with suicide assessment and treatment.

Goal 2: Improving Provider Confidence

Four providers comprised the treatment team at the project site during the intervention period. In November 2022, providers received the modified ZSWS via anonymous online survey. Once completed, these providers individually reviewed the recorded presentation on the planned intervention, which was delivered via email. In February 2023, following the completion of the intervention phase, providers again received the modified ZSWS via anonymous online survey to compare with the preintervention survey; three additional questions were added to the survey to garner feedback on the intervention and query provider interest in continuing with the intervention if supported by project findings. Due to unforeseen time limitations, only three providers completed the

postintervention survey. These two survey samples were evaluated to identify any changes in self-reported confidence regarding suicide assessment and treatment.

Project Evaluation

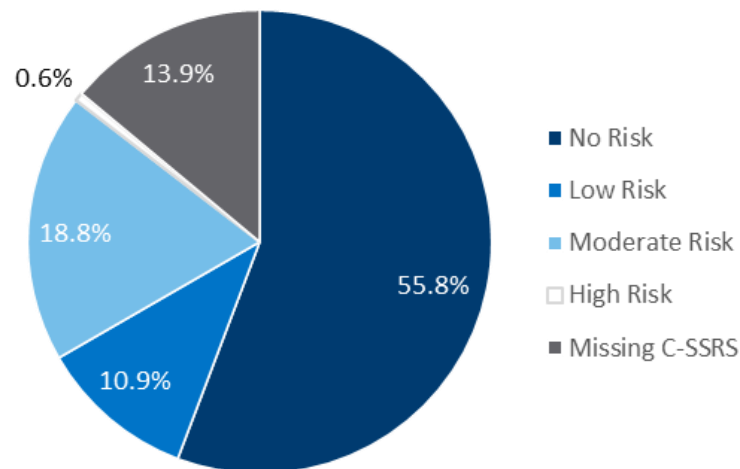
Outcome 1: Suicide Screening

When comparing the intervention sample ($n = 165$) with the preintervention sample ($n = 127$), a notable difference was identified in how suicide assessments were performed. Prior to the intervention, no standardized suicide screening method was used, leading to wide variation in how providers assessed and rated an individual's suicide risk. By comparison, 86.1% of the intervention group completed the C-SSRS as part of the new patient intake documentation. Notably, providers were not required to change their assessment and documentation of a patient's suicide risk level based on the C-SSRS screening; in 56.7% of patients, the C-SSRS and provider-documented risk level were congruent. Two common patterns were identified in the cases where the C-SSRS and provider-document risk level differed, often leading the provider to rate the patient as having lower risk for suicidal behavior than the C-SSRS. First, many providers did not increase a patient's suicide risk level when a history of attempted suicide or preparatory acts to complete suicide were reported; this is concerning because a history of attempted suicide is the strongest risk factor for future suicidal behavior (Nugent et al., 2019). Second, providers frequently rated an individual as having no suicide risk based on a single denial of suicidal ideation during the treatment session despite screening positive for recent suicidal ideation on the C-SSRS; Silverman et al. (2015) asserted assessing for suicidal ideation must include a review of recent ideation, as suicidal ideation often fluctuates daily for individuals at risk for suicide. Based on C-SSRS screening results, 30.3% of patients in the intervention sample reported some degree of suicide risk, compared to 7.1% of preintervention patients who had any degree of provider-documented suicide risk. However, in the intervention sample, only 7.3% of patients were documented as having any degree of suicide risk by providers. This discrepancy highlights the increased rate of identified suicide risk associated with C-SSRS

screening that would otherwise be missed by providers at the project site with the current standard of care. Figure 1 shows the C-SSRS identified suicide risk level for the intervention sample; due to the lack of standardized risk assessment at the project site, data analysis was unable to be performed for provider risk assessments.

Figure 1

Percentage of Patients Identified by C-SSRS Risk Category (n = 165)



Note. Only includes initial patient C-SSRS data. Data from follow-up C-SSRS screenings not included.

While patients with reported suicide risk factors were typically scored as higher risk via the C-SSRS than the provider's risk assessment, there were a few notable cases in which the provider rated the patient as higher risk than the C-SSRS. In one case, a new patient inaccurately completed the C-SSRS, leading to missed risk suicide risk factors and moderate suicide risk with the tool; the provider was able to identify suicidal behaviors that placed the patient at high risk for suicide and intervened appropriately. In other cases, provider assessment led to a nuanced risk assessment that led to a decreased risk level. For example, one patient reported a previous suicide attempt in the context of

specific stressors; the C-SSRS identified the patient as having moderate suicide risk based on this fact, but the provider accurately identified the context of the previous suicide attempt (which had occurred many years prior to the visit) and the patient's complete lack of suicide risk factors in their recent history. In this case, the provider documented the patient as having no current suicide risk, which was a more accurate rating than the C-SSRS-identified rating. In another case, the patient had inadvertently reported previous suicidal behavior on the C-SSRS after mis-clicking an option on the online form; the patient had no risk factors on assessment, and the provider confirmed the patient had never engaged in suicidal behavior. The provider accurately documented the patient had no current suicide risk based on this assessment. In each of these cases, the provider reviewed the C-SSRS and used it as part of a comprehensive suicide risk assessment, leading to more accurate risk stratification for the patient. When used in this manner, the C-SSRS appeared to be a useful tool to complement the clinician's suicide risk evaluation. Notably, no attempted or completed suicides were documented in either of the patient samples.

Outcome 2: Provider Confidence

Pre ($n = 4$) and postintervention ($n = 3$) ZSWS results were reviewed to identify any changes in provider confidence regarding suicide assessment and treatment at the project site. Table 1 lists an average of each provider response to individual ZSWS items.

Table 1

Provider Responses to ZSWS

Zero Suicide Workforce Survey Question	PreInterv -ention ($n = 4$)*	PostInter -vention ($n = 3$)*	Change
I have the knowledge and training needed to recognize when an individual may be at elevated risk for suicide.	4.50	4.67	+0.17
I am knowledgeable about warning signs for suicide.	4.50	4.67	+0.17
I know what organizational procedures to follow when I suspect that an individual may be at elevated risk for suicide.	4.25	4.67	+0.42

Zero Suicide Workforce Survey Question	PreInterv -ention (n = 4)*	PostInter -vention (n = 3)*	Change
I am confident in my ability to respond when I suspect an individual may be at elevated risk for suicide.	4.50	4.67	+0.17
I am comfortable asking individuals direct and open questions about suicidal thoughts and behaviors.	4.75	5.00	+0.25
I have the knowledge and skills needed to screen individuals for suicide risk.	4.50	5.00	+0.50
I know our organizational procedures for screening individuals for suicide risk.	4.25	5.00	+0.75
I am confident in my ability to screen individuals for suicide risk.	4.50	5.00	+0.50
I am comfortable screening individuals for suicide risk.	4.50	5.00	+0.50
I have the knowledge and skills needed to conduct a suicide risk assessment.	4.50	5.00	+0.50
I am knowledgeable about risk factors for suicide.	4.50	5.00	+0.50
I obtain information about risk and protective factors when conducting suicide risk assessments.	4.50	5.00	+0.50
I assess the individual's access to lethal means as part of a suicide risk assessment.	4.50	5.00	+0.50
I assess the individual's suicide plans and intentions as part of a suicide risk assessment.	4.50	5.00	+0.50
I know what organizational procedures exist regarding suicide risk assessments.	4.00	5.00	+1.00
I am confident in my ability to conduct a suicide risk assessment.	4.50	5.00	+0.50
I am comfortable conducting a suicide risk assessment.	4.50	5.00	+0.50
I know the clinical workflow to follow when a suicide risk assessment indicates the individual needs additional clinical care.	4.25	5.00	+0.75

Note. Provider responses were collected on a Likert scale consisting of the following:

1. *Strongly Disagree*
2. *Disagree*
3. *Neutral*
4. *Agree*
5. *Strongly Agree*

* Mean provider response

Overall, providers reported increased confidence and knowledge about screening individuals for suicide and performing a comprehensive suicide risk assessment after the intervention was completed. Providers also reported increased knowledge about what steps to take when an individual demonstrates an increased risk for suicide; as this EBP project did not address suicide treatment and prevention, more information is needed to understand why this reported change occurred. Overall, providers appeared to have grown more confident in screening for suicide, completing a suicide risk assessment, and

intervening when necessary for those at risk for suicide, though the low sample size precluded any meaningful statistical analysis.

Implementation Process Review

Several process issues were identified when evaluating project outcomes. 13.9% of new patients did not receive an initial C-SSRS during the intervention period. This is similar to the 16.5% of patients in the preintervention sample who did not receive the Patient Health Questionnaire-9, which is included as part of new patient intakes at the project site. Further assessment is needed to identify why routine intake documentation is missed at the site. In the case of the C-SSRS, part of the explanation is explained by the fact no new patients received an initial C-SSRS on the first day of the intervention period; omitting this first day leads to an omission rate of 11.8%, which is a mild improvement from the preintervention sample.

No meaningful data were collected on suicide risk trends in follow-up patients who screened positive on the initial visit C-SSRS because only one of 30 qualifying follow-up patients was screened. Follow-up assessment forms must be manually sent to patients through the site's EHR system, and there was no clear method to flag patients for follow-up screening. This loss of follow-up likely occurred because providers and office staff typically do not manually send individual clients screening forms as part of their standard workflow.

In addition, chart auditing revealed the initial C-SSRS was not reviewed prior to the visit for some patients, meaning it would not have been used as part of the provider's suicide risk assessment. Because of the modular nature of the site's EHR, there was no requirement for or verification of providers reviewing the C-SSRS prior to the initial visit. This could be addressed by adding a section to the site's suicide risk documentation template attesting the provider has reviewed the C-SSRS during their assessment. In a number of cases, providers manually documented their review of the C-SSRS in the risk assessment section of the psychiatric assessment; it would be possible to add this as a selectable

option for future documentation purposes, thereby reducing provider burden to verify review of the screening tool.

Sustainability Plan

Project outcomes and results were presented to key stakeholders at the project site on April 7th, 2023. After reviewing the collected data, further assessment and intervention was recommended to sustain practice changes at the site, including modifying EHR templates to standardize risk assessment documentation among providers and reviewing current organizational policies on suicide to ensure uniform assessment and treatment when suicide risk factors are present in a new patient. The project site would benefit from future EBP projects to pilot the proposed practice changes.

Cost-Benefit Analysis

No costs were associated with this EBP project. The C-SSRS and ZSWS are both free to use and modify (The Columbia Lighthouse Project, n.d.; Zero Suicide, n.d.) and the authors added the C-SSRS forms to the EHR at no cost to the project site. In contrast, multiple benefits were associated with this project beyond increased provider confidence in suicide prevention. Suicide screening with the C-SSRS could reduce legal liability for the project site by ensuring all patients received standardized screening with a validated tool, though the legal benefit is questionable if there is no verification providers have reviewed the tool. Furthermore, suicide screening could lead to earlier recognition and treatment for at-risk patients. Shepard et al. (2016) estimated an economic cost of \$1.3 million for each death by suicide in the United States, which includes healthcare-related costs. Reducing morbidity and mortality related to suicidal behavior would reduce the financial burden patients, their families, and the healthcare system experience because of these behaviors. These financial benefits occur alongside the preservation of life and improved treatment outcomes associated with early recognition and treatment of suicidal behavior (Harmer et al., 2022).

Discussion

This EBP project achieved its two primary goals of increasing standardized suicide screening rates and improving provider confidence in suicide risk assessment at the project site. The C-SSRS was useful for identifying suicide risk factors that were otherwise missed during routine psychiatric assessment, which could lead to earlier intervention and improved outcomes for suicidal patients. Patients screened with the C-SSRS had higher rates of suicide risk than those in the comparison group; this is a positive finding and suggests patients at risk for suicide may be missed during routine assessment with the current standard of care. As mentioned previously, comprehensive suicide risk assessments require clinician judgment in addition to careful risk factor identification, but standardized suicide screening could improve identification of at-risk patients who might be missed due to provider bias, lack of time, or any number of other contributing factors. The increased provider confidence at the project site will also likely lead to higher quality suicide risk assessments and treatment in the future (Loparo et al., 2019). By combining standardized screening with assessment by competent and confident clinicians, patients at the project site will likely experience fewer episodes of untreated suicidal behavior and will receive treatment sooner than they would with the current standard of care. Future projects could be implemented to track changes in patient outcomes over time that are related to the interventions implemented during this project.

Strengths and Limitations

The primary strengths of this project include its low cost, easily implemented intervention, and minimal interruption to provider workflow. Both the C-SSRS and ZSWS are free to use and can be adapted to the needs of individual mental health practices. Once added to the site's EHR, the C-SSRS was easily administered to new patients and did not disrupt the intake process, and providers were able to use the screening results as part of their usual suicide assessment practices. This flexibility minimized interruption to provider workflow, which made it easier to sustain the practice change.

Several limitations to the project were identified, warranting further practice changes to improve outcomes and project sustainability. For example, the lack of follow-up screening for patients who screened positive for suicide risk was likely the result of EHR limitations, and the follow-up process could be clarified to ensure additional screening is performed as appropriate. Though providers received a recorded presentation on the project and an introduction to using the C-SSRS, more education could have been performed to increase providers' knowledge of best practices for suicide risk assessments and the benefit of standardized screening for suicide in outpatient settings. Additional education may have increased providers' use of the C-SSRS as part of their risk assessment and led to more congruence between risk levels identified by the C-SSRS and those documented by providers. Moreover, after reviewing the education providers received, it was discovered the C-SSRS form referred to in the education materials differed slightly from the one implemented in the EHR, which may have led to confusion among providers about the risk levels identified by the EHR version of the tool. Finally, the small sample size diminished the clinical significance of outcomes measured; a longer intervention phase may have led to specific cases in which imminent suicidal behavior was detected and treated due to use of the C-SSRS. These limitations are representative of the small scope of this practice change project and could be addressed by future projects at the project site to track patient outcomes.

Implications for Clinical Practice

When used as part of a comprehensive suicide risk assessment by a trained provider, standardized suicide screening tools can reduce liability by ensuring common risk factors are identified early in treatment. However, suicide assessment does not ensure treatment, and future projects should be implemented to ensure a uniform and robust intervention occurs when suicidal patients are identified. For health care settings where no suicide screening tools are currently used, the C-SSRS can be easily and inexpensively implemented. More research is needed to improve the efficacy of suicide treatment and prevention in the United States, and increasing suicide screening rates and provider

confidence when performing suicide risk assessments could be one component of a larger plan to address suicide in outpatient settings.

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Appendix A

C-SSRS Form Used at Project Site

The following form was formatted for use with the project site’s digital EHR system, but no changes were made to the content of the tool.

COLUMBIA-SUICIDE SEVERITY RATING SCALE

Screen Version – Lifetime/Recent

	Past Month		Lifetime (Worst Point)	
	YES	NO	YES	NO
Answer each question below:				
1) <u>Have you wished you were dead or wished you could go to sleep and not wake up?</u>				
2) <u>Have you actually had any thoughts of killing yourself?</u>				
If you answered YES to 2, answer questions 3, 4, 5, and 6. If you answered NO to 2, go directly to question 6.				
3) <u>Have you been thinking about how you might do this?</u> E.g. “I thought about taking an overdose but I never made a specific plan as to when where or how I would actually do it....and I would never go through with it.”				
4) <u>Have you had these thoughts and had some intention of acting on them?</u> As opposed to “I have the thoughts but I definitely will not do anything about them.”				
5) <u>Have you started to work out or worked out the details of how to kill yourself? Did you intend to carry out this plan?</u>				

How long ago did the Worst Point occur?

6) <u>Have you ever done anything, started to do anything, or prepared to do anything to end your life?</u> Examples: Collected pills, obtained a gun, gave away valuables, wrote a will or suicide note, took out pills but didn’t swallow any, held a gun but changed your mind or it was grabbed from your hand, went to the roof but didn’t jump; or actually took pills, tried to shoot yourself, cut yourself, tried to hang yourself, etc. If YES, answer: <u>Was this within the past 3 months?</u>	YES	NO

Appendix B

Adapted ZSWS Used at Project Site

The *Zero Suicide Workforce Survey* is freely available and can be modified as needed based on study outcomes to be measured. The following questions were adapted from sections three and four of the original survey and made available via an anonymous online survey.

Zero Suicide Workforce Survey, Student-Modified Version

Section 1. Recognizing When Individuals May Be at Risk for Suicide

We are interested in learning about your knowledge and comfort related to recognizing when an individual may be at elevated risk for suicide.

Please indicate how much you disagree or agree with each of the following statements.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
20. I have the knowledge and training needed to <i>recognize</i> when an individual may be at elevated risk for suicide.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. I am knowledgeable about warning signs for suicide.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. I know what organizational procedures to follow when I suspect that an individual may be at elevated risk for suicide.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. I am confident in my ability to respond when I suspect an individual may be at elevated risk for suicide.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. I am comfortable asking individuals direct and open questions about suicidal thoughts and behaviors.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

25. Have you ever received training on how to recognize the warning signs that an individual may be at elevated risk for suicide?..... No Yes

26. Has your current organization provided you with training on how to recognize the warning signs that an individual may be at elevated risk for suicide?..... No Yes

Section 2. Screening and Assessing Individuals for Suicide Risk

These next questions are about screening individuals who may be at elevated risk for suicide.

27. Which of the following groups do you primarily work with?

- Children
- Adolescents
- Adults
- Elderly

28. Are you responsible for conducting screenings for suicide risk? No Yes

Please indicate how much you disagree or agree with each of the following statements.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
29. I have the knowledge and skills needed to screen individuals for suicide risk.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30. I know our organizational procedures for screening individuals for suicide risk.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31. I am confident in my ability to screen individuals for suicide risk.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32. I am comfortable screening individuals for suicide risk.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Individuals who screen positive for suicide risk should be assessed to inform clinical decision making. This is sometimes referred to as a suicide risk assessment.

33. Are you responsible for conducting suicide risk assessments for individuals who screen positive for suicide risk? No Yes

Please indicate how much you disagree or agree with each of the following statements.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
34. I have the knowledge and skills needed to conduct a suicide risk assessment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35. I am knowledgeable about risk factors for suicide.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36. I obtain information about risk and protective factors when conducting suicide risk assessments.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
37. I assess the individual's access to lethal means as part of a suicide risk assessment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
38. I assess the individual's suicide plans and intentions as part of a suicide risk assessment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
39. I know what organizational procedures exist regarding suicide risk assessments.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
40. I am confident in my ability to conduct a suicide risk assessment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
41. I am comfortable conducting a suicide risk assessment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
42. I know the clinical workflow to follow when a suicide risk assessment indicates the individual needs additional clinical care.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>