Benefits and Drawbacks of Universal Suicide Screening

The Controversies in Psychiatric Services column aims to highlight differing viewpoints on topics relevant to psychiatric services that have generated a debate or divide in opinion. For this column, the editorial team chose to focus on the issue of universal suicide screening, asking authors to respond to the following statement:

> Universal suicide screening in *all* settings that see behavioral health patients, *including* nonbehavioral health general hospital settings, is the best approach to address suicide risk in the population.

Even though there is little debate that suicide represents a worsening national epidemic in need of increased attention, there is debate whether universal screening represents the best path forward compared with targeted assessments. Goldstein Grumet and Boudreaux lay out a clear argument for universal screening across all health care settings for several reasons; most important, screening should cast as wide a net as possible to proactively identify at-risk individuals, because many at-risk individuals are not in regular contact with behavioral health specialists. However, Bryan, Allen, and Hoge argue for targeted suicide screening to decrease the number of false positives and to ensure that critical behavioral health resources are used where most needed. Moreover, Bryan et al. contend that universal screening in nonbehavioral health care settings is at best insufficient and at worst deleterious, because fidelity to the screening tools may be lacking. Behavioral health providers across the country are both motivated to respond to the suicide epidemic in the United States and acutely aware of the unintended consequences of new requirements and regulations. Reading these two perspectives, we hope, will offer readers clarity as to the value—and cost—of suicide screening.

Patrick Runnels, M.D., M.B.A.

Department of Psychiatry, Case Western Reserve University School of Medicine, and Weatherhead School of Management, Case Western Reserve University, Cleveland. Send correspondence to Dr. Runnels (patrick.runnels1@uhhospitals.org). Matthew D. Erlich, M.D., Patrick Runnels, M.D., M.B.A., and Rachel Talley, M.D., are editors of this column.

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Weighing the Costs and Benefits of Universal Suicide Risk Screening in Primary Care: An Evidence-Based Approach

Nearly half of suicide decedents in the United States visit primary care services during the months immediately preceding their deaths (1). Universal screening for suicide risk conducted in primary care has therefore been proposed as an important component of comprehensive suicide prevention strategies. Universal suicide risk screening generally involves administering an instrument that, at a minimum, asks about suicidal ideation. This approach is distinct from indicated or selective screening of primary care patients who are first identified through a positive depression screen or have presenting symptoms or signs of a mental health condition warranting further evaluation. Despite the lack of evidence supporting universal screening, proponents of universal screening have nonetheless advocated expansion of suicide risk screening in primary care largely on the basis of the assumption that suicidal behaviors can be reduced by identifying a greater number of at-risk patients and referring these patients to treatment. Our position is that, relative to the known benefits of indicated or selected screening, the assumed benefits of universal screening in primary care are overestimated while its possible risks are underestimated.

The U.S. Preventive Services Task Force has concluded that, thus far, there is insufficient evidence to support universal suicide risk screening in primary care (2), a determination made several years ago on the basis of both the lack of evidence for screening and for accessible treatments in primary care for suicidal ideation. Since then, evidence has emerged for universal screening and outreach in the high-risk environment of emergency departments (EDs) and specialty mental health settings, as has further evidence supporting the effectiveness of treatments to reduce suicidal ideation and behaviors when delivered in those settings (3). However, the hypothesis that universal screening is superior to usual care or to indicated screening has not been tested in primary care. The absence of evidence supporting universal suicide risk screening in primary care should be considered in light of research showing reductions in suicidal behaviors after improved screening and treatment of depression in primary care (3), representing an indicated approach.

Overestimations of universal screening's benefits stem largely from the inappropriate extrapolation of diagnostic test performance and research findings from clinical settings with higher incidence rates of suicidal behaviors, such as EDs and specialty mental health (e.g., inpatient psychiatric units, outpatient psychiatric and behavioral health clinics, and residential substance use and behavioral health programs). In recent years, research on suicide risk detection and screening methods have increasingly focused on the development and use of predictive machine-learning

methods using data in electronic health records (4). These efforts have generally yielded high global classification accuracy rates (>80%), but positive predictive values—the proportion of patients with positive screening results who will actually engage in suicidal behavior—remain extremely low (typically <1%). Most of this research has been conducted in psychiatric settings and EDs where suicide mortality incidence rates range from 1% to 8% (4). The actual performance of universal suicide risk screening in general primary care populations with much lower incidence has not been determined. Because incidence provides a natural limit on the accuracy of a diagnostic test, we can reasonably expect that any screening tool to assess suicide risk—even a nearly perfect tool with very high sensitivity and specificity—will perform much worse in primary care, even when the tool's accuracy remains constant.

The net benefit of universal screening will be further reduced when compared with indicated or selected screening, the most common and currently the recommended screening strategy in primary care. Most, but not all, patients who will actually attempt suicide (true positives) also report being depressed, and their condition is detectable by depression screening. By comparison, the number of patients who will attempt suicide but are *not* reporting being depressed or showing some other relevant psychiatric or behavioral health condition (e.g., substance use disorder or previous suicide attempt) is much smaller. The potential improvement related to universal screening is therefore limited to only the small number of cases that are not first detected by robust indicated or selected screening. Consequently, the most appropriate comparison condition for evaluating universal screening's net benefit is not the absence of screening but rather indicated or selected screening.

The number of additional true positive cases detected with universal screening that would have been missed with indicated or selected screening would probably be modest for at least two reasons. First, universal screening will not necessarily increase self-disclosure of suicidal ideation among patients who are not interested in mental health care or are concerned about how their clinician will respond to such a disclosure. Second, many suicidal behaviors—potentially up to half—occur within days to weeks of first experiencing suicidal ideation (5), a time frame that is much shorter than the typical interval of primary care appointments. The increased frequency of universal screening therefore remains insufficient to detect many additional cases in relevant time frames. These are empirical findings that warrant further evaluation before any widespread implementation of universal screening.

The most likely outcome of shifting from indicated or selected screening to universal screening would be a significant increase in false positives. Some of these positive screening results would be perceived as medical emergencies in settings where further evaluation is not readily available, leading to problematic transfers to EDs. Such transfers will often be involuntary on the part of the patient, and some will result in unnecessary psychiatric hospitalization. The benefits of psychiatric hospitalization have not been empirically demonstrated, and the hospitalization may cause harms. Procedures that might erroneously lead to hospitalization therefore deserve careful consideration.

Most patients would presumably be encouraged to seek outpatient mental health treatment. The utility of mental health referrals arising from suicidal ideation incidentally discovered in the setting of an ambulatory visit for a nonurgent medical problem is also unknown. The overall likelihood of receiving an evidence-based treatment for reducing or preventing suicidal behaviors is low. Patients may not be interested in mental health treatment, or they may lack the financial resources to pay for such treatment. Additionally, few mental health professionals can deliver evidence-based psychotherapies with sufficient fidelity (e.g., cognitive-behavioral therapy, dialectical behavior therapy, and problem-solving therapy) (3). These pragmatic considerations, having to do with the underlying risk and motivations of different target populations and the readiness of different settings, are often overlooked or minimized by proponents of universal screening.

Another assumption of proponents of universal screening is that the risks of early detection and referral to mental health treatment are negligible. These treatments presumably would not be started solely on the basis of screening results but rather on the basis of findings from a more thorough assessment and evaluation. Even with appropriate and reasonable evaluation, however, mental health treatments do not benefit all patients and can, in some cases, lead to negative outcomes or adverse effects, including symptom worsening, clinical deterioration, adverse effects of medication, or other negative outcomes.

These effects could, in some cases, increase the risk for suicidal behaviors. Because universal screening will disproportionately increase the rate of false positives relative to true positives, it is possible that more patients could be exposed to these potential harms relative to the number who might experience benefit. To illustrate, if we (optimistically) assume that the positive predictive value of universal suicide risk screening as an indicator of subsequent suicidal behavior (including both fatal and nonfatal behaviors) is 1% (4), we can assume 99 false positives for every true positive case. If only half of these false positives initiate mental health treatment as a result of screening and if only 5% of those who initiate mental health treatment experience an adverse effect, we could estimate that two to three patients could experience a negative outcome for each true positive case. Because no treatment can prevent all suicidal behaviors, some patients who are correctly identified will nonetheless attempt suicide despite receiving an intervention. Averting one additional suicide attempt would therefore necessitate the identification of *multiple* true positives who would have otherwise been missed. The number of false positives and the number of patients potentially exposed to negative outcomes and iatrogenesis in mental health treatment would therefore increase several fold.

Encouraging a shift from indicated or selected suicide risk screening to universal suicide screening in primary care departs from evidence-based suicide prevention practice and may inadvertently harm some patients. Until confirmation of the hypothesis that universal screening can incrementally improve outcomes among primary care patients relative to indicated or selected screening, we believe it is best to follow existing evidence supporting the latter screening approach.

REFERENCES

1. Luoma JB, Martin CE, Pearson JL: Contact with mental health and primary care providers before suicide: a review of the evidence. Am J Psychiatry 2002; 159:909–916
2. O'Connor E, Gaynes B, Burda BU, et al: Screening for Suicide Risk in Primary Care: A Systematic Evidence Review for the US Preventive Services Task Force. Rockville, MD, Agency for Healthcare Research and Quality, 2013
3. Mann JJ, Michel CA, Auerbach RP: Improving suicide prevention through evidence-based strategies: a systematic review. Am J Psychiatry 2021; 178:611–624
4. Belsher BE, Smolenski DJ, Pruitt LD, et al: Prediction models for suicide attempts and deaths: a systematic review and simulation. JAMA Psychiatry 2019; 76:642–651
5. Herberman Mash HB, Ursano RJ, Kessler RC, et al: Predictors of suicide attempt within 30 days after first medically documented suicidal ideation in US Army soldiers. Am J Psychiatry 2021; 178: 1050–1059

Craig J. Bryan, Psy.D., A.B.P.P.
Michael H. Allen, M.D.
Charles W. Hoge, M.D.

Department of Psychiatry and Behavioral Health, Ohio State University College of Medicine, Columbus (Bryan); Department of Psychiatry and Emergency Medicine, University of Colorado School of Medicine, Denver (Allen); Walter Reed Army Institute of Research, Bethesda, Maryland (Hoge). Send correspondence to Dr. Bryan (craig.bryan@osumc.edu).

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Universal Suicide Screening Is Feasible and Necessary to Reduce Suicide

Recent recommendations from regulatory agencies such as the Joint Commission on the Accreditation of Healthcare Organizations (JCAHO) require that patients who are primarily evaluated or treated for behavioral health conditions in hospital settings be screened for increased suicide risk (i.e., targeted screening). However, four patterns in the emerging empirical literature, reviewed below, suggest that universal rather than targeted screening should be considered to optimize identification of adults and children at risk of suicide. With universal screening, all patients in both medical and mental health settings are screened for suicide risk, regardless of the reason for their visit. Irrespective of whether a targeted or universal screening model is used, a validated tool should guide the screening, and a robust clinical workflow that specifies expected care practices for those determined to be at risk for suicide should be in place.

There are several reasons to consider adopting universal suicide risk screening. First, visits to health care providers offer an opportunity to identify people at risk who might not otherwise be identified. More than 80% of people who die by suicide interact with health care services in the year before their death, often for nonpsychiatric reasons, and only half who die by suicide have a diagnosed mental health condition at the time of their death (1). Thus, targeted screening among only those with known behavioral health disorders will miss many if not most adults and children at risk.

Second, studies suggest that universal screening in busy health care settings is feasible (2, 3). The results of a study of universal screening among adult emergency department (ED) patients indicate that >85% of the general adult population could be screened once protocols are established (4). In a pediatric ED study, patients underwent suicide screening while they were waiting to be seen by a physician, and length of stay in the ED was not affected by the screening. Pediatric patients and their parents or loved ones are generally supportive of screening nonpsychiatric patients (3).

Third, when health care facilities have moved from targeted to universal screening, detection of nascent or occult suicide risk improves. In a study of universal screening among adults presenting to the ED, screening led to a nearly twofold improvement in suicide risk detection, rising from 2.9% to 5.7% (4). In a pediatric sample of 15,000 youths screened in a pediatric hospital, 55% of those who screened positive on the screener did not present to the ED with suicidal ideation or behavior as their presenting problem (5). Further, the percentage of eligible participants who were actually screened ranged from 59% to 81% during the targeted screening phase and from 80% to 86% during the universal screening phase, meaning that targeted screening (i.e., only screening those with known primary behavioral health issue) elicited uncertainty among members of the health care team with regard to who should be screened, and youths were therefore missed. Results of this study also suggested that increased suicide risk among male and Black patients, for whom suicide rates have skyrocketed, was more likely to be detected with universal screening than with targeted screening. Achieving equity in identifying suicide risk in minoritized populations may require multiple approaches, including universal screening.

Fourth, best practices exist for addressing suicide risk and, when deployed, can reduce subsequent risk, but they are vastly underutilized (6). Most primary health care providers, including psychologists, have received very little training in best practices for assessing and managing suicide risk despite the availability of these practices (6). Universal screening requires training for the staff conducting the screen, most often a nurse, either during triage or primary nursing assessment, followed by a secondary risk assessment with higher specificity, often delivered by a physician, advanced practice provider, or mental health clinician. Established protocols need to be in place to conduct the