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POLICY BRIEF

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Mental Health and Clinic Operations: Reducing Veteran Suicide-Related Events

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EVIDENCE INTO PRACTICE

Bottom Line Up Front

To help reduce Veteran suicide, the Department of Veterans Affairs has considered numerous approaches to improve care access. The Partnered Evidence-based Policy Resource Center evaluated two of these approaches: one that increases clinic staffing and another that has providers see more Veterans per day.[1] Findings revealed that adding more staff led to reduced Veteran suicide-related events (SREs), while increasing provider patient load was linked to increased Veteran SREs. Efforts to reduce Veteran SREs should include onboarding more staff and properly allocating them to increase care access without sacrificing quality.

Background

Veteran suicides have posed a significant public health crisis for decades, with over 125,000 deaths recorded since 2000.[2] Recent research has found that Veteran suicide rates are 1.5 times higher than non-Veterans, and that this varied by race, gender, housing status, and other factors.[3,4,5] For example, in 2021 women Veterans had more than double the rate of successful suicide attempts compared to non-veteran women, and American Indian and Alaska Native Veterans rate of suicide was 28% higher than any other Veteran group.[6] Confronted with the crisis of Veteran suicide, policymakers across the political spectrum have continued to work to improve Veteran care.

Suicide-Related Events (SREs)

An SRE is defined as a Veteran crisis health event including suicidal self-directed violence, suicide attempts, suicide, and self-directed violence with undetermined intent.

While considered a priority for years, the passage of the Joshua Omvig Veterans Suicide Prevention Act (P.L. 110-110) in 2007 gave the Veterans Administration (VA) authority to make the prevention of Veteran suicides an agency-wide priority.[7] Built off that foundation, current efforts to prevent Veteran suicide are guided by the National Strategy for Preventing Veteran Suicide and outlined more within VA's Suicide Prevention 2.0 and Suicide Prevention Now Initiative.[8,4] Taken together, these plans provide a comprehensive strategy encompassing both long-term objectives and actionable short-term measures that VA Medical Centers (VAMCs) can implement to reduce suicide-related events (SREs) among Veterans.

Central to this strategy are clinical operations, including the adequacy of staffing levels at VAMCs and the daily patient workload managed by staff. Staffing levels and staff workload are directly linked to SREs among Veterans. As such, an evaluation team at the Partnered Evidence-based Policy Resource Center (PEPReC) is dedicated to assessing the optimal workload, staffing, and other aspects of mental health clinic operations to support the health of Veterans. PEPReC's recent paper examining the effects of staffing on Veteran SREs,[9] and continued work measuring how changes in staffing work rate are tied to the likelihood of SREs, is the focus of this brief.

Methods

Data & Sample

Evaluations used data from a variety of VA databases. The sample was pulled from Department of Defense and the VA Infrastructure for Clinical Intelligence data. The VHA Corporate Data Warehouse was used to obtain patient- and VAMC-level characteristics, and other databases were used to obtain information like Veteran secondary insurance coverage, employment rate, Medicare Advantage penetration, and so on. The final sample included Veterans who separated from active service between 2010 and 2017 and included around 110,000 observations.

Key Variables

The evaluations used PEPReC-constructed measures of clinic time and work rate to get a more nuanced understanding of operations at a VAMC. Clinic time was measured as the total time providers dedicate to mental health care each day, and work rate was measured as the total number of mental health patient encounters during that clinic time (i.e. patients per clinic day). When used together, these measures accurately capture provider labor input and workload.[10,11] Veteran SRE occurrences were measured between 2014-2018.

Analytic Approach

The evaluations used a rigorous instrumental variables (IV) approach to address key concerns about the relationship between staffing, work rate, and SREs. IV methods are commonly used in observational research to estimate causal relationships when randomization is not feasible and when there are concerns about unmeasured confounders or reverse causality. The key principle of IV analysis is the use of an instrument—a variable that is strongly correlated with the treatment of interest but uncorrelated with the outcome except through its relationship with the treatment. In the case of these evaluations, the treatments of interest are staffing and work rate, and the outcome is Veteran SREs.[12]

The evaluations used previously validated facility-level instruments (e.g. provider vacation time, sick leave, federal holidays, and number of scheduling profiles)[13] to isolate the effects of staffing and work rate. By employing IV estimation, the evaluation ensured that observed changes in SREs were not driven by reverse causality or pre-existing patient conditions, strengthening the validity of the findings.

To address potential underreporting of Veteran SREs, the evaluations used the distance from a Veteran's residence to the nearest VHA primary care facility as a predictor of engagement with VHA mental health services. A Heckman correction,[14] a two-step method that adjusts for selection bias by accounting for the likelihood of service engagement, was applied to ensure that the observed relationships between staffing, work rate, and SREs reflected true patterns of service use rather than selective engagement.

A Probit model was used to estimate the likelihood of SREs. Models included facility, year, and quarter fixed effects to control for time-invariant confounders and standard errors were clustered at the individual level to account for autocorrelation over time. To explore variations across facilities, VAMCs were stratified into tertiles based on staffing and workload levels. This stratification facilitated comparisons of SRE outcomes across facilities with differing staffing and provider workload levels.

Lastly, sensitivity analyses were conducted to assess the robustness of the evaluation findings. The investigators tested alternative work rate measures, changes to provider categories, and the impact of scheduling practices. These additional checks confirmed that the relationship between staffing, work rate, and SREs holds across different model specifications, reinforcing the reliability of the findings.

PEPReC Evaluations Findings

VAMC Staffing and SREs	
Evaluation Summary	Published in 2022, the evaluation team published the paper "Effect of Mental Health Staffing Inputs on Suicide-Related Events."[9] This study suggests that increasing mental health staffing levels at VAMC facilities leads to reduced SREs among Veterans. Specifically, a 1 percent increase in mental health staffing is linked to a 1.6 percentage point reduction in SREs. This effect is most pronounced at VAMCs with the lowest staffing levels, with diminishing returns as staffing increased. The evaluation found significant variation in how much clinic time is devoted to mental health care across VAMCs, as well as how much Veterans engage with that care.
Policy Implications	To have the highest percentage point impact on Veteran SREs, VA hiring efforts should be targeted at lowest-staffed facilities. In the face of a national shortage of mental health providers,[15] the VA should also focus on how pre-existing mental health resources are deployed. For the most success, these efforts should be supplemented with opportunities to evaluate short and long-term effects of staffing changes.

VAMC Work Rate and SREs	
Evaluation Summary	In the final stages of development, this evaluation offers three preliminary takeaways. First, in VAMCs offering therapy services, when providers take on more patients, the probability of a Veteran SRE increases. Second, at VAMCs with fewer patients than peer VAMCs, an influx of patients per pay period

	results in an increase in the likelihood of SREs. Third, the evaluation validates that increasing staffing level is linked with lowering SREs for VAMCs in the lower two-thirds of VAMC staffing. In addition to examining VAMCs that provide therapy, the evaluation also reviews work rate impacts on medication management staff (e.g., psychiatrists). The findings here are more limited – the evaluation found no overall change in SREs when providers see more Veterans per day, and only small changes in SRE rates when facilities are separated into low, medium, and high work rate groups. Conversely, increasing VAMC staffing levels was seen to reduce SREs for VAMCs that fall in the lower two-thirds of the staffing distribution.
Policy Implications	This evaluation found strong negative implications for having providers see more patients per day, even if it improves care access. In combination with validating the benefits of increased staffing, this evaluation also makes a strong case for the VA to consider initiatives that onboard staff and strategically deploy them to the lowest staffed facilities.

Conclusion

These two evaluations have complementary findings on VA clinic operations and SREs among Veterans. Both efforts link increasing mental health staffing levels, especially at under-resourced VAMCs, with benefits to Veterans – although the benefits were seen to diminish as staffing improves. The second evaluation adds to this understanding, however, highlighting that increasing provider work rate likely comes with a risk of increasing Veteran SREs. In short, both studies strongly suggest that workload management is crucial to improving Veteran mental health care.

Evaluation Findings		
VAMC Staffing	Staffing Change	Veteran SREs
Average	Increase	↓
Lower	Increase	↓ ↓
VAMC Work rate	Patient Change	Veteran SREs
Average	Increase	↑
Lower	Increase	↑ ↑
Note: arrows express the magnitude of change		

As PEPReC finalizes work on Veteran SREs, several other projects are underway. For example, the Center is working to develop a new mental health care access measure that will give VAMCs another sensitive metric to evaluate clinic access and performance. Similarly, the Center is formulating workforce guidelines for VA mental health care.

For future efforts, policymakers should look towards staffing-based solutions and continued evaluation of resource allocation to best meet the needs of Veterans.

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ABOUT PEPReC POLICY BRIEFS

This evidence-based policy brief is written by Partnered Evidence-based Policy Resource Center (PEPReC) staff to inform policymakers and Veterans Health Administration (VHA) managers about the evidence regarding important developments in the broader health system and economy. PEPReC is a Quality Enhancement Research Initiative-funded resource center that collaborates with operational partners to design and execute randomized evaluations of VHA initiatives, develops and refines performance metrics, and writes evidence-based policy briefs. *The views expressed in this article are those of the authors and do not necessarily reflect the position or policy of the Department of Veterans Affairs or the United States government.*

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