Suicide Prevention Programs Across U.S. Outpatient Mental Health Care Settings: Differences by Facility Ownership

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Objective: This study aimed to examine whether facility ownership (public, private nonprofit, private for-profit ownership) was associated with provision of suicide prevention programs.

Methods: A retrospective cross-sectional study identified self-reported suicide prevention program status across 7,597 mental health facilities with outpatient settings by using data from the 2019 Substance Abuse and Mental Health Services Administration Behavioral Health Treatment Services Locator. Multivariable logistic regression models examined whether facility ownership was associated with availability of these programs.

Results: In 2019, only 61.2% of facilities provided outpatient suicide prevention programs. Higher odds of program provision were associated with public ownership (adjusted odds ratio [AOR]=1.64, 95% confidence interval [CI]=1.37–1.97, p<0.001), facilities serving young adults (AOR=2.16, 95% CI=1.66–2.82, p<0.001) or serving seniors (AOR=1.44, 95% CI=1.27–1.63, p<0.001), and facilities accepting Medicare (AOR=1.34, 95% CI=1.16–1.53, p<0.001), compared with their counterparts, with significant differences across facility ownership types by rurality of locations. Facilities accepting uninsured patients (AOR=0.81, 95% CI=0.68–0.98, p=0.027) or Medicaid patients (AOR=0.76, 95% CI=0.62–0.92, p=0.006) had lower odds of providing these programs.

Conclusions: Facility ownership contributed to significantly different decisions on provision of outpatient suicide prevention programs. Maldistribution of these services should raise concerns, given nationwide efforts to prevent suicide and weak ownership regulations for mental health facilities. Understanding barriers and facilitators for deployment of these programs may improve access to suicide prevention services for all, especially for eligible patients in rural areas.

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Suicide, the second leading cause of death among youths and the 10th leading cause of death among all age groups in the United States, claims over 40,000 lives annually (1). From 1999 to 2017, the average age-adjusted suicide death rate increased from 10.5 to 14.0 per 100,000 population in almost all U.S. states. In 2017, suicide resulted in the loss of approximately 47,000 lives (2). National efforts addressing these detrimental events, including the National Strategy for Suicide Prevention, Safety Planning Intervention, Zero Suicide campaign, and National Suicide Prevention Lifeline, have focused on multifaceted interventions in health care settings, including identification of warning signs for suicidal crisis, ongoing physician education for evolving suicide prevention practices, comprehensive assessment and management of suicidal patients, community outreach, and hotlines (3).

Most mental health services in the United States are delivered in outpatient settings, in tandem with significant reductions in hospital-based psychiatric beds (4–7). Receipt of outpatient services is particularly prevalent among patients with suicidal ideation and suicide attempts as well as among those who later die from suicide; these individuals have more visits to emergency and outpatient mental health care

HIGHLIGHTS

- In this cross-sectional study of 7,597 outpatient mental health care settings, only 61.2% provided specialized suicide prevention programs in 2019.
- Publicly owned facilities were more likely than private for-profit facilities to provide outpatient suicide prevention programs, as were facilities that did not accept Medicaid or uninsured patients, with statistically significant differences by rurality of locations.
- Maldistribution of outpatient suicide prevention programs by facility ownership and payer mix should raise concerns, given high-profile nationwide efforts to prevent suicide as well as the weak nature of ownership regulations for mental health settings.

(OMHC) facilities than do patients without suicidal behavior (5, 8). Over one-fourth (26%) of adults who died from suicide had contact with an OMHC facility within 1 year of death (9). Outpatient care has been shown to reduce adverse mental health outcomes and suicidal behaviors (4, 10–12).

However, research on the availability of suicide prevention services in OMHC facilities is limited. The Substance Abuse and Mental Health Services Administration (SAMHSA) has defined suicide prevention programs as those that screen patients for suicidal ideation, operate 24/7 hotlines, and engage all stakeholders for regular follow-up, among other features. These elements are often found in comprehensive clinical care in mental health care settings, despite a paucity of evidence on the effectiveness of suicide prevention programs (13). Understanding the distribution of such comprehensive suicide prevention programs is an essential first step to guide future research on the effectiveness of these programs.

Historically, private for-profit health care facilities were less likely than public and nonprofit facilities to provide unprofitable services, such as psychiatric emergency services, trauma care, and assertive community treatment programs (14, 15). Literature suggests that public and nonprofit organizations usually deviate from profit maximization behavior (16). Therefore, we would expect public and private nonprofit facilities to be more likely than private for-profit facilities to offer suicide prevention programs.

Maldistribution of mental health services by facility ownership might result in some markets having more services and others not enough. A vivid example is rural America, where residents face disproportionate difficulties in accessing mental health providers. As of December 2020, over 58% of areas with shortages of mental health professional were in rural communities (17). Yet, evidence regarding the association between rural versus urban residence and use of specialized mental health services is mixed (18–20). For instance, veterans in rural areas were less likely to receive treatment in OMHC facilities, compared with their urban counterparts (20% versus 33%) (18). However, other studies found similar rates of receipt of mental health services among urban and rural adults with major depressive episodes or any mental illness in the past year. Because rural residents (youths and adults) have been found to be more likely to have serious thoughts of suicide in the past year (21), examining whether rural and urban OMHC facilities provide suicide prevention programs is essential.

The complexity of insurance-patient mix increases this maldistribution, further marring the health care landscape, because the availability of outpatient mental health services might also vary across facilities that accept various types of insurance payments. Research has examined suicide rates, gender disparities in suicide and care utilization, and racial-ethnic disparities in utilization of outpatient mental health services (1, 5, 6, 8–11, 22–24). Lower availability of these services may hinder accessibility for vulnerable populations (22, 23).

Little is known about the availability of suicide prevention programs in outpatient settings. In this retrospective study, we examined the availability of such programs in OMHC facilities across the United States and whether facility ownership and rurality were associated with the provision of these programs.

METHODS

Data Sources

National data on mental health facility ownership and outpatient suicide prevention programs were downloaded on January 23, 2020, from the online 2019 SAMHSA Behavioral Health Treatment Services Locator, which includes all known facilities in the United States that provide mental health services or substance abuse treatment (25). Facilities that primarily provide general health services were excluded. The web-based survey, as well as telephone interviews, includes a follow-up question probing whether the special services checked (e.g., suicide prevention program) were the selections intended by each facility respondent. Both methods (web based and telephone) collectively accounted for approximately 97% of the survey respondents (26). The remaining 3% were from mailed forms; facilities were contacted during the questionnaire check-in process in the case of response inconsistencies. The 2016 5-year American Community Survey provided zip code tabulation area (ZCTA)–level sociodemographic and socioeconomic information. The final data included 7,597 mental health facilities with outpatient services in 4,849 ZCTAs.

The University of South Carolina Institutional Review Board designated this study as exempt from review.

Measures

Provision of suicide prevention programs. We created an indicator to assess whether a facility reported provision of a suicide prevention program. Each respondent was given the definition of suicide prevention services as including all of the following: "identifying risk factors; educating staff on identifying the signs of suicidal behavior and using methods to detect risk; and the assessment, intervention, and management of suicidal patients, including treatment of an underlying mental or substance use disorder, and use of psychotropic medication, supportive services, and education. Hotlines help individuals to contact the nearest suicide prevention mental health provider" (13).

Facility characteristics. Ownership was categorized into private for-profit organizations, private nonprofit organizations, and public agencies or departments (including federal or nonfederal facilities). Rurality of facility location was based on rural-urban commuting area codes and categorized into urban, large rural, small rural, and isolated ZCTAs (7). Facility type included hospital, residential facility, community mental health center, and other OMHC facility (partial hospital or day treatment program, OMHC clinic, or multiple mental health settings). Each facility accepted one or more insurance

TABLE 1. Characteristics of outpatient mental health care facilities, by provision of suicide prevention programs in 2019[a]

Characteristic	Total sample (N=7,597)		Provides suicide prevention program (N=4,651)	
	N	%[b]	N	%[b]
Facility ownership				
Private for profit	816	10.7	416	51.0
Private nonprofit	3,128	41.2	1,835	58.7
Public	3,653	48.1	2,400	65.7
Rurality of facility[c]				
Urban	5,289	69.6	3,022	57.1
Large rural	1,072	14.1	735	68.6
Small rural	857	11.3	621	72.5
Isolated rural	379	5.0	273	72.0
Facility type				
Hospital-based outpatient setting	548	7.2	401	73.2
Residential program–based outpatient setting	126	1.6	51	40.5
Outpatient mental health facility	4,184	55.1	2,065	49.4
Community mental health facility	2,260	29.7	1,612	71.3
Other mental health facility[d]	479	6.3	229	47.8
Payment accepted				
Cash or self-payment	6,687	88.0	4,090	61.2
Medicare	5,635	74.2	3,631	64.4
Medicaid	6,907	90.9	4,222	61.1
Private insurance	5,712	75.2	3,970	69.5
Age group accepted for treatment				
Children and adolescents (≤17)	5,712	75.2	3,460	60.6
Young adults (18–25)	7,123	93.8	4,440	62.3
Adults (26–64)	6,760	89.0	4,225	62.5
Seniors (≥65)	6,494	85.5	4,100	63.1

[a] Data from the 2019 Substance Abuse and Mental Health Services Administration Behavioral Health Treatment Services Locator, except for rurality of facility. For each variable, differences in the proportion of facilities offering programs and the proportion in the total sample were significant at $p<.001$ (Fisher's exact tests).

[b] For the total sample, percentages are column percentages; for facilities providing suicide prevention programs, percentages are row percentages.

[c] Rurality of a facility location was identified by using the facility zip code from the rural-urban commuting area codes (7).

[d] Included multisetting mental health facilities and partial hospitalization and day treatment centers.

payers, including Medicare, Medicaid, cash or self-payment, and private insurance. Each facility accepted one or more age groups for treatment (children and adolescents [≤17 years], young adults [18–25 years], adults [26–64 years], and seniors [≥65 years]), which may affect decisions to offer suicide prevention programs in an outpatient setting, according to the local demand for suicide prevention services.

Statistical Analysis

We compared facility characteristics and local ZCTA-level sociodemographic and socioeconomic characteristics between OMHC settings with and without suicide prevention programs by using Fisher's exact tests for categorical variables and two-group, two-sided t tests for numeric variables. A map was created to illustrate locations of settings, to distinguish the three types of facility ownership, and to identify those with suicide prevention programs. Multivariable logistic regression models were used to examine the association between facility ownership and provision of suicide prevention programs by location rurality. The final model controlled for facility type (hospital, residential facility, community mental health center, or other OMHC facility), facility acceptance of payers (Medicare, Medicaid, cash or self-payment, private insurance, and other public payments), facility acceptance for treatment by age group, ZCTA-level sociodemographic (sex and race) and socioeconomic factors (percentage of residents below the 200th percentile of federal poverty level), and state indicators. Models controlled for state-level clustering to adjust for correlated random variances in service provision across facilities in the same state; spatial autocorrelations adjusted for clustering of service provision. In addition to odds ratios (ORs), we calculated marginal effects from the full model to predict the probabilities of reporting a suicide prevention program by facility and community characteristics (see online supplement). We used Stata, version 15, to conduct the statistical analyses and ArcMap, version 10.2.2, to create the map.

RESULTS

Facility and Community Characteristics by Program Availability

Overall, 61.2% (N=4,651) of OMHC settings provided suicide prevention programs in 2019 (Table 1). Across all types of ownership, publicly owned facilities (65.7%) were more likely to provide these programs, compared with private nonprofit (58.7%) and private for-profit (51.0%). OMHC facilities that were more likely to provide suicide prevention programs include those in rural communities (72.0% of facilities in isolated rural areas versus 57.1% in urban areas), those that were hospital based (73.2%) or based in a community mental health facility (71.3%), those accepting private insurance (69.5 versus 61.2% for those accepting cash or self-payment and 61.1% for those accepting Medicaid), and those accepting seniors for treatment (63.1% versus 60.6% for those accepting children and adolescents; all $p<0.001$).

Of all 7,597 OMHC facilities, 321 (4.2%) were affiliated with U.S. Department of Veterans Affairs (VA). VA facilities were much more likely than other publicly owned facilities to have suicide prevention programs (95.3%, N=306 versus 62.9%, N=2,094). Facilities in communities with higher proportions of males, Whites, American Indian or Alaska Natives, or populations below 200% of federal poverty level were more likely to deploy suicide prevention programs (Table 2).

Geographic Distribution of Programs by Facility Ownership

Figure 1 illustrates the geographic distribution of OMHC facilities with suicide prevention programs. A total of 3,507

ZCTA communities had at least one OMHC facility, and nearly three-quarters (72.3%, N=3,507 of 4,849) of ZCTA communities had outpatient suicide prevention programs. Of these 3,507 communities, over half (58.2%, N=2,042) had public facilities, 45.3% (N=1,591) had private nonprofit facilities, and 11.1% (N=389) had private for-profit facilities.

TABLE 2. Sociodemographic and socioeconomic factors associated with provision of suicide prevention programs by 7,597 outpatient mental health care settings in 2019[a]

	Provides suicide prevention program				
	Yes (N=4,651)		No (N=2,946)		
Factor	N	%	N	%	p[b]
% of male residents (M±SD)	49.0±3.1		48.9±2.7		.040
% of residents below 200% of the federal poverty level (M±SD)	39.1±14.5		37.9±15.3		<.001
% of White residents[c]					
Quartile 1 (<61.5%)	1,127	59.5	768	40.5	<.001
Quartile 2 (61.5%–80.8%)	1,153	60.7	746	39.3	<.001
Quartile 3 (80.9%–91.5%)	1,177	62.0	721	38.0	<.001
Quartile 4 (91.6%–100%)	1,194	62.9	704	37.1	<.001
% of American Indian/Alaska Native residents[c]					
Quartile 1 (<11.4%)	1,104	58.2	792	41.8	<.001
Quartile 2 (11.4%–30.4%)	1,130	59.7	763	40.4	<.001
Quartile 3 (30.5%–70.7%)	1,161	61.0	741	39.0	<.001
Quartile 4 (70.8%–96.6%)	1,256	66.1	643	33.9	<.001

[a] Zip code tabulation area (ZCTA) data on sociodemographic and socioeconomic factors were from the 2016 5-year American Community Survey. Data on provision of suicide prevention programs were from the 2019 Substance Abuse and Mental Health Services Administration Behavioral Health Treatment Services Locator.
[b] Calculated by two-group, two-sided t tests for mean comparisons and Fisher's exact tests for proportion comparisons.
[c] ZCTA-level racial variables were categorized because of skewed distributions. Percentages for the racial variables are row percentages.

Associations Between Facility Characteristics and Suicide Prevention Programs

When the analysis adjusted for facility and community characteristics, across urban settings, publicly owned facilities had higher odds of offering outpatient suicide prevention programs, compared with private for-profit facilities (adjusted OR [AOR]=1.64, p<0.001) (Table 3). Urban private for-profit and private nonprofit facilities were not found to differ significantly in provision of suicide prevention programs. However, private nonprofit facilities in rural locations had increased odds of offering such programs, compared with private for-profit facilities in urban areas. Public facilities' higher odds of offering suicide prevention programs, compared with private for-profit facilities, were consistent across all rural locations (Figure 2). However, rural private for-profit facilities in the most isolated communities were less likely than their counterparts in other rural areas to provide outpatient suicide prevention programs (average predicted probabilities: 63.6%, 62.2%, and 56.7%, for for-profit facilities in large rural, small rural, and rural isolated areas, respectively).

Facilities that accepted uninsured patients (cash or self-payment) had lower odds of providing suicide prevention programs than did their counterparts that did not accept uninsured patients (AOR=0.81, p=0.027). Similarly, facilities that accepted Medicaid had lower odds of program provision than their counterparts that did not accept Medicaid (AOR=0.76, p=0.006). Of note, compared with an average facility (those in communities with <11.4% of American Indian or Alaska Native residents), facilities in areas with higher proportions of American Indian or Alaska Native residents (70.8%–96.6%) had higher odds of providing suicide prevention programs (AOR=1.22, p=0.027), as did facilities in communities with higher proportions of residents in poverty (AOR=1.05, p=0.025).

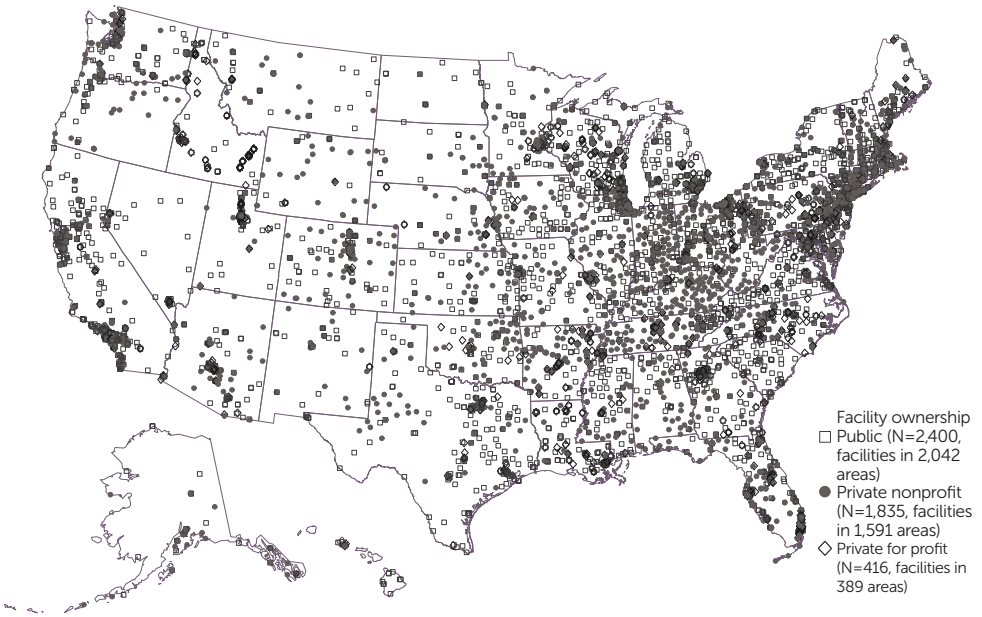
DISCUSSION

This study showed that less than two-thirds of OMHC facilities offered specialized suicide prevention programs in 2019. Despite nationwide increases in suicide, a lack of uniformity exists in the provision of these programs, which varied by facility ownership and payment acceptance. Most communities relied on public OMHC facilities to offer suicide prevention programs. Private for-profit facilities in isolated rural areas were less likely than their less rural counterparts to provide suicide prevention programs. In contrast, private nonprofit facilities had a higher probability of offering these services as the locations of the facilities increased in rurality.

Specialized suicide prevention programs may offer services tailored to address the needs of patients at risk of suicide (9). Evidence shows that around one-fourth of suicide decedents had contact with outpatient mental health services during the year before death (9). These missed opportunities to help suicidal patients while they struggled and sought help occurred while suicide mortality was increasing nationwide (1). Professionals trained in best practices to identify suicide risk factors; provide appropriate evidence-based practices; and understand the diverse interplay between psychological, social, environmental, and cultural predictors are integral to reducing suicide in the United States (27, 28). Specialized suicide prevention programs in OMHC facilities may help professionals more regularly receive training to detect risk and administer assessments, interventions, and appropriate management of patients contemplating suicide.

Provision of suicide prevention programs differed by ownership status. Nearly 66% of public facilities and half of private for-profit facilities offered suicide prevention programs. These findings are pertinent, given the national call for Zero Suicide initiatives. In 2010, the Joint Commission and

FIGURE 1. Geographic distribution of outpatient mental health care settings with suicide prevention programs, by facility ownership[a]



[a] Data from the 2019 Substance Abuse and Mental Health Services Administration Behavioral Health Treatment Services Locator.

U.S. Department of Health and Human Services announced the National Action Alliance for Suicide Prevention initiatives to catalyze inpatient and outpatient mental health services to better treat patients with suicidal behaviors (17, 29). The lack of uniformity in the provision of outpatient suicide prevention programs, however, may hinder nationwide efforts to achieve the goal of zero suicides. Evidence-based treatments for suicidality have emphasized the importance of outpatient mental health treatments using suicide-specific intensive psychological care, which helps replace or eliminate suicidal thoughts (27, 28). Yet, as our data showed, this care is not universally available in OMHC facilities.

All facilities, across all ownership types, must balance costs and revenue to continue offering services. To provide SAMHSA-defined suicide prevention programs, a facility must screen all patients for suicidal ideation, review each patient's suicide risk factors, continually educate professionals, establish a collaborative treatment process with all stakeholders involved, engage all stakeholders in regular follow-up, have capacity to store psychotropic medication, provide educational modules, and offer patient hotlines (13). These tasks sound arduous, but suicidal patients' needs may change rapidly and without warning. The ability to provide such intensive care may ultimately depend on costs associated with length of services, care transitions for each facility, and prices that facilities can charge based on patients' insurance status.

Suicidal patients are particularly susceptible to financial strain and more likely to experience financial distress than many other patient groups (30). The out-of-pocket costs for mental health treatments might impede access to necessary intensive services for this vulnerable group. These socioeconomic realities, combined with our findings that facilities serving uninsured and Medicaid patients are less likely to offer suicide prevention programs, should prompt urgent policy changes. These results suggest the need for an improved payment scheme to better support ongoing suicide prevention initiatives at all types of facilities, especially those accepting patients who are uninsured or enrolled in Medicaid. Barriers to accessing specialized professionals with adequate skills and ongoing training to reinforce suicide prevention initiatives may leave suicidal patients without immediate access to needed services. Having suicidal thoughts is painful. Financial barriers to care from specialized professionals can be disastrous.

It is encouraging that rural nonprofit OMHC facilities were more likely than urban facilities to offer suicide prevention programs, given the higher suicide rates, greater access to lethal means, and limited mental health specialists and other emergency health care facilities in rural communities (31). Greater access to lethal means and the lack of health care providers make individuals in isolated rural areas vulnerable to suicide. However, private for-profit facilities in isolated rural areas were found to be less likely than those in less rural areas to adopt suicide prevention programs, after the analysis controlled for age, sex, race, and state location, which is striking, given that suicide rates in isolated rural areas are the highest and have been increasing the most rapidly across all rural counties since 1999 (32). Residents in rural communities often are affected by a lack of access to health care in general. These isolated rural communities have fewer mental health care facilities, compared with larger,

urbanized rural areas. The fact that the OMHC settings in isolated rural areas were less likely to provide suicide prevention programs may have exacerbated lack of access to care and other suicide-related issues.

Many nationwide suicide prevention services, such as those provided by the VA and U.S. Department of Defense, are in the public sector (33). Introduced in 2015, the Prioritizing Veterans Access to Mental Health Care Act acknowledged the increase in suicide attempts and deaths by suicide among veterans (32). However, access to mental health care should be ensured for all military personnel and civilians across public and private sectors nationwide, because suicide rates have been increasing across all groups. Federal and state legislation can address the lack of suicide prevention programs across all OMHC settings, encourage the provision of specialized suicide prevention programs, and authorize programs to advance professional training for suicide prevention. For example, the Joint Commission's 2019 National Patient Safety Goal added suicidal ideation screening for all patients, use of evidence-based processes for suicide risk assessment, written monitoring and care procedures to mitigate suicidal ideation, and treatment and follow-up care for patients at risk of suicide as new requirements for its behavioral health care accreditation programs (17). These requirements may strengthen mental health treatment programs by offering suicide prevention for all patients. However, offering suicide prevention programs is not universally required in the current mental health facility licensures; the weak regulations to ensure the universal provision of such programs in mental health facilities might have contributed to disparate availability of suicide prevention programs.

State Medicaid policies may influence the availability of outpatient suicide prevention programs; our data indicated that facilities accepting uninsured or Medicaid patients were less likely than those not accepting these patients to offer suicide prevention programs. Although uninsured patients often face difficulties obtaining health care (34), our data indicated that even if they were able to access an OMHC setting, suicide prevention programs were often unavailable in those settings. Unfortunately, OMHC facilities that accepted Medicaid did not always have suicide prevention programs available for these patients. This finding suggests that the adequacy of suicide prevention networks should be addressed in all Medicaid plans. Medicaid expansion might not suffice to ensure access to suicide prevention programs. The stability of reliable payments for specialized suicide prevention programs may contribute to financial viability for OMHC facilities, whereas the potential risk of providing intensive services to uninsured patients or Medicaid enrollees with low copayments may worsen the financial vulnerability of such services.

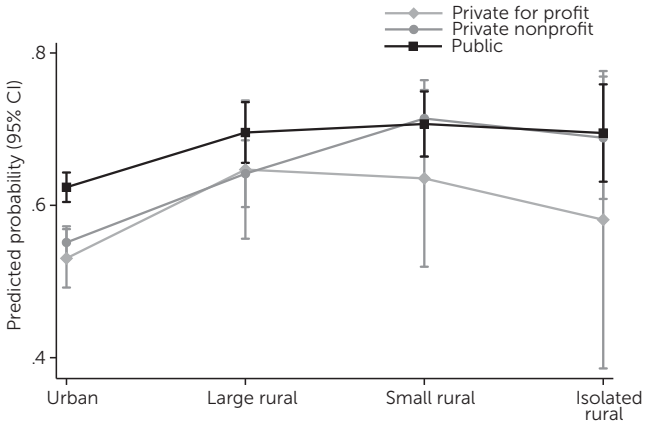
This study had several limitations. First, we used the most up-to-date data available (2019) in the SAMHSA Behavioral Health Treatment Services Locator. However, it is not yet clear how many facilities will provide specialized suicide prevention programs in the years ahead. Other forms of suicide prevention care, such as hotline help and informal follow-up calls, may not qualify as suicide prevention programs per SAMHSA's definition. Furthermore, there is a lack of evidence regarding the benefits of suicide prevention programs. Second, this national database is updated continually, which allowed us to identify service provision variability as a simple dichotomous variable measuring whether suicide

TABLE 3. Logistic regression analysis of variables as predictors of provision of suicide prevention programs by 7,597 outpatient mental health care settings in 2019

Variable	OR	95% CI[a]	p
Facility ownership (reference: private for profit)			
Private nonprofit	1.16	.94–1.43	.173
Public or government	1.64	1.37–1.97	<.001
Rurality of facility location (reference: urban)			
Large rural	1.59	.98–2.58	.049
Small rural	1.65	.92–2.96	.094
Isolated rural	1.04	.52–2.08	.913
Interaction between ownership and rurality (reference: private for profit in urban area)			
Private nonprofit, large rural	1.01	.63–1.62	.964
Private nonprofit, small rural	1.41	1.31–1.52	.025
Private nonprofit, isolated rural	2.46	1.11–5.43	.026
Public or government, large rural	.95	.54–1.66	.854
Public or government, small rural	.94	.47–1.89	.872
Public or government, isolated rural	1.45	.67–3.16	.348
Facility type (reference: other mental health facility)			
Hospital outpatient setting	2.14	1.66–2.75	<.001
Residential-based program	.79	.50–1.26	.323
Community mental health facility	1.70	1.30–2.24	<.001
Payment accepted (reference: not accepting indicated payment type)			
Cash or self-payment	.81	.68–.98	.027
Medicare	1.34	1.16–1.53	<.001
Medicaid	.76	.62–.92	.006
Private insurance	1.05	.89–1.24	.566
Age group accepted for treatment (reference: not accepting indicated age group)			
Children and adolescents (≤17)	1.06	.93–1.20	.418
Young adults (18–25)	2.16	1.66–2.82	<.001
Adults (26–64)	.90	.73–1.13	.370
Seniors (≥65)	1.44	1.27–1.63	<.001
% of male versus female residents	1.01	.99–1.03	.206
% of White residents (reference: quartile 1, <61.5%)			
Quartile 2 (61.5%–80.8%)	1.15	.99–1.34	.072
Quartile 3 (80.9%–91.5%)	1.19	1.00–1.42	.044
Quartile 4 (91.6%–100%)	1.10	.90–1.35	.340
% of American Indian/Alaska Native residents (reference: quartile 1, <11.4%)			
Quartile 2 (11.4%–30.4%)	1.20	1.04–1.39	.011
Quartile 3 (30.5%–70.7%)	1.17	1.01–1.35	.036
Quartile 4 (70.8%–96.6%)	1.22	1.02–1.45	.027
% of residents below 200% of the federal poverty level	1.05	1.01–1.09	.025

[a] Calculated by using delta methods with state-level clustering to adjust for correlated random variances in provision of suicide prevention programs across facilities in the same state; spatial autocorrelations adjusted for clustering service provisions.

FIGURE 2. Predicted probability of provision of outpatient suicide prevention programs with interaction effects for facility ownership and rurality[a]



[a] Data from the 2019 Substance Abuse and Mental Health Services Administration Behavioral Health Treatment Services Locator and from the 2013 rural-urban commuting area codes for the rurality of a facility zip code location. CI, confidence interval.

prevention programs were offered but not how they were offered. Data on the capacity and scope of suicide prevention program services for each facility were unavailable. It is possible that private for-profit facilities were larger and served patients across ZCTA boundaries. However, the greater the number of suicidal patients served by private for-profit facilities, assuming the patients are randomly distributed across all private for-profit facilities, the less likely it is that these patients will receive specialized suicide prevention programs. Finally, our analysis focused on OMHC facilities. The distribution of suicide prevention programs by ownership may be different in other settings, such as inpatient mental health treatment facilities, general health care facilities, and community health centers. Future studies are warranted to elucidate the interplay of cultural, social, and clinical barriers with the provision of outpatient suicide prevention programs in various health care settings. This information will allow further research to identify effective measures to address barriers to the provision of suicide prevention programs across public and private mental health facilities.

CONCLUSIONS

This study highlighted provision patterns of outpatient suicide prevention programs by ownership. Nearly half of private for-profit OMHC settings offered none of these programs. Suicide prevention programs were the least prevalent in isolated areas across all rural for-profit facilities, where suicide rates have been the highest for decades.

Provision of suicide prevention programs also varied by facilities' insurance payment acceptance; facilities that accepted Medicaid and uninsured patients were less likely to offer these programs. These results suggest that socioeconomically disadvantaged patients face compounded barriers to access suicide prevention services. This should raise concerns given high-profile nationwide efforts to prevent suicide, as well as weak ownership regulations for mental health care facilities.

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