

Disparities in Access to Physicians and Medications for the Treatment of Substance Use Disorders Between Publicly and Privately Funded Treatment Programs in the United States

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ABSTRACT. Objective: Prior research suggests that publicly funded substance use disorder (SUD) treatment programs lag behind privately funded programs in adoption of evidence-based practices, resulting in disparities in access to high-quality SUD treatment. These disparities highlight a critical public health concern because the majority of SUD patients in the United States are treated in the publicly funded treatment sector. This study uses recent data to examine disparities in access to physicians and availability of medications for the treatment of SUDs between publicly and privately funded SUD treatment programs. **Method:** Data were collected from 595 specialty SUD treatment programs from 2007 to 2010 via face-to-face interviews, mailed surveys, and telephone interviews with treatment program administrators. **Results:** Publicly funded programs were less likely than privately funded programs to

have a physician on staff, even after controlling for several organizational characteristics that were associated with access to physicians. The results of negative binomial regression indicated that, even after taking into account physician access and other organizational variables, publicly funded programs prescribed fewer SUD medications than privately funded SUD treatment programs. **Conclusions:** Patients seeking treatment in publicly funded treatment programs continue to face disparities in access to high-quality SUD treatment that supports patients' choices among a range of medication options. However, implementation of the Affordable Care Act may facilitate greater access to physicians and use of medications in publicly funded SUD treatment programs. (*J. Stud. Alcohol Drugs*, 74, 258–265, 2013)

IN 2010, APPROXIMATELY 17.9 MILLION Americans suffered from alcohol use disorders (AUDs), and another 2.3 million were dependent on opioids, including pain relievers and heroin (Substance Abuse and Mental Health Services Administration [SAMHSA], 2011). The economic costs of these disorders are significant, with estimated costs of \$223.5 billion for excessive drinking (Bouchery et al., 2011), \$194 billion for all illicit drug use (National Drug Intelligence Center, 2011), \$21.9 billion for heroin dependence (Mark et al., 2001), and \$55.7 billion for prescription

opioid misuse (Birnbaum et al., 2011). Opioid use disorders (OUDs) are linked to excess mortality (Degenhardt et al., 2011), and excessive alcohol consumption is the third leading cause of death in the United States (Mokdad et al., 2004, 2005).

Treatment services for AUDs and OUDs have largely evolved outside of the mainstream health care system in the nation's more than 13,000 specialty substance use disorder (SUD) treatment programs (White, 1998). The U.S. system includes opioid treatment programs that primarily deliver methadone maintenance, but they represent only 1.5% of specialty SUD treatment programs (SAMHSA, 2009a) and therefore serve a minority of OUD patients. About two thirds of the remaining specialty SUD treatment programs in the United States are publicly funded, relying primarily on government block grants and state contracts to provide SUD treatment services (Mark et al., 2011; McCarty et al., 2009; Stewart and Horgan, 2011). The remainder—privately funded programs—are largely dependent on revenues from private insurance and self-paying patients (Roman and Johnson, 2002). Disparities in treatment services may be associated with these differences in program funding, with patients seeking treatment in privately funded programs

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receiving higher quality care (Horgan et al., 2008; Rodgers and Barnett, 2000; Wheeler and Nahra, 2000).

In the past decade, research and commercial investments in medication development have yielded new, effective, and safe pharmacotherapies to treat OUDs and AUDs, including buprenorphine, acamprosate, and extended-release injectable naltrexone (Krupitsky et al., 2010; Ling et al., 2005; O'Malley et al., 2007; Rösner et al., 2010, 2011). SUD medications have been identified and promoted by federal agencies such as the National Institute on Drug Abuse, National Institute on Alcohol Abuse and Alcoholism, and Center for Substance Abuse Treatment as a significant step toward improving public health (Center for Substance Abuse Treatment, 2009; National Institute on Alcohol Abuse and Alcoholism, 2007; National Institute on Drug Abuse, 2009).

Despite the priority placed on adoption of SUD medications, data have repeatedly demonstrated a significant "research-to-practice" gap, with notably limited pharmacotherapy adoption in publicly funded SUD treatment programs (Ducharme et al., 2006; Garner, 2009; Knudsen et al., 2010; Lamb et al., 1998). Data from the early 2000s reveal that publicly funded treatment programs were less likely than privately funded programs to prescribe disulfiram, buprenorphine, tablet naltrexone, acamprosate, and injectable naltrexone (Ducharme et al., 2006; Knudsen et al., 2006, 2007a; Roman et al., 2011). These disparities highlight a critical public health concern because the majority of SUD patients in the United States are treated in the publicly funded treatment sector (Cartwright and Solano, 2003; Chriqui et al., 2008; Heinrich and Fournier, 2004).

A major reason for low rates of SUD medication adoption is lack of access to physicians for the prescription and supervision of SUD medications, particularly in publicly funded programs (Knudsen and Abraham, 2012; Knudsen et al., 2007a, 2011a, 2011b, 2012). In 2002–2004, only 30.7% of publicly funded programs had a physician on staff compared with 50.7% of privately funded programs, whereas a slightly higher percentage of publicly funded programs (35.4%) employed a physician on contract compared with private programs (26.1%) (Knudsen et al., 2007a). These two types of physician employment may affect a treatment program's capacity to implement pharmacotherapies. For example, treatment programs that only contract with physicians may not purchase enough physician time to ensure that all potential patients receiving SUD medications are thoroughly evaluated and subsequently medically managed during treatment. More recent data are needed to address whether previously identified disparities in access to physicians have persisted, given the emphasis placed on medication adoption by federal agencies.

Assuming that the pattern of physician engagement is related to treatment practices, it is important to examine the organizational correlates associated with contracting versus physician employment. The present research team recently

reported a study of privately funded treatment programs that identified bivariate differences in organizational characteristics between programs with and without access to physicians (Knudsen et al., 2011b). Although the present research team has conducted separate analyses of private centers (Knudsen et al., 2011b) and public centers (Knudsen et al., 2012), there have been no studies comparing publicly and privately funded programs on access to physicians using multivariate models.

Turning back to the use of SUD medication, most previous studies of medication adoption have considered single medications rather than the breadth of pharmacotherapy services (Abraham and Roman, 2010; Abraham et al., 2010, 2011; Fuller et al., 2005; Knudsen et al., 2005; Koch et al., 2006; Oser and Roman, 2007, 2008; Roman and Johnson, 2002; Thomas et al., 2003, 2008). For the present research question, gauging the relationship of physician presence to organizational availability of pharmacotherapies, the number of available SUD medications is the appropriate variable to consider, and this focus is a novel contribution to the literature.

Using data from a pooled U.S. sample of private and publicly funded treatment programs, we addressed two research questions in this study. First, are there disparities in access to physicians and availability of SUD medications between publicly and privately funded treatment programs? Second, what other organizational characteristics are associated with access to physicians and the number of SUD medications prescribed by these programs?

Method

Study samples and data collection

This study used pooled data drawn from two nationally representative samples of privately funded and publicly funded SUD programs in the United States, originally constructed as part of the National Treatment Center Study. Both samples required treatment organizations to offer a minimum level of SUD treatment at least equivalent to American Society of Addiction Medicine Level 1 structured outpatient services (Mee-Lee et al., 1996) and to be open to the general public, which excludes programs in the Veterans Health Administration, Indian Health Service, and the criminal justice system. Privately funded treatment programs were defined as those receiving at least 50% of their annual operating revenues from commercial insurance, patient fees, and income sources other than block grant funding such as government grants or contracts. Medicaid and Medicare were not regarded as "block" funding because reimbursement is linked to individual patients rather than allocations to the program (Abraham and Roman, 2010). Programs were defined as publicly funded if they received at least 50% of their annual operating revenues from gov-

ernment grants and contracts, including block grant funds and criminal justice contracts.

The privately funded sample was recruited using a two-stage sampling design. U.S. counties were randomly selected from 10 population-based strata, and then programs were randomly sampled from those counties (Knudsen et al., 2007c). Telephone screening identified eligible programs, and face-to-face interviews were conducted with program administrators. To address sample attrition over time attributable to program closure and refusals, replacement programs have been selected using these same sampling procedures. Data were collected during face-to-face interviews with 345 administrators (response rate = 67.0%) from 2007 to 2008. Administrators provided written informed consent before the interview, and a donation of U.S. \$100 was made to participating centers.

Similar sampling procedures were used to recruit a nationally representative cohort of publicly funded treatment programs in 2004–2006 that was then recontacted in 2009–2010 for the current study (Knudsen et al., 2011a). Survey packets, which included written informed consent forms, were mailed to 291 treatment centers open in 2009–2010. Nonresponding centers were mailed a second packet after 6 weeks. Nonresponding administrators were contacted by telephone for interviews and asked to provide verbal consent. Data were collected from 250 organizations (response rate = 85.9%). Participating organizations received U.S. \$50.

Data from these two samples were pooled for the analyses ($n = 595$). Comparisons of responding and refusing centers by organizational characteristics revealed no significant differences in either sample (Abraham and Roman, 2010; Knudsen et al., 2011a). All study procedures were approved by the Institutional Review Boards of the University of Georgia and the University of Kentucky.

Measures

Adoption of SUD medications was measured by a count variable (0 to 5), which summed program-level prescription of disulfiram, tablet naltrexone, buprenorphine, acamprosate, and injectable naltrexone. Administrators reported on access to physicians, which resulted in a typology of three mutually exclusive categories: programs with no access to a physician on staff or through contract, programs with a physician on contract but not on staff, and programs with at least one physician on staff.

Seven organizational characteristics were measured. A dichotomous variable distinguished the two samples (1 = publicly funded, 0 = privately funded). Location in a hospital setting, accreditation by the Joint Commission or Commission on Accreditation of Rehabilitation Centers, and government ownership were dichotomous variables. Workforce professionalism was measured by the percentage of counselors with a master's degree or higher, and the percentage

of program referrals from the criminal justice system was also measured. A dichotomous variable measuring levels of care indicated whether the program offered outpatient-only treatment services. Treatment orientation was measured by a dichotomous variable denoting inclusion of a 12-step component during treatment.

Statistical analysis

Descriptive statistics were calculated for all study variables. Chi-square tests and t tests compared public and private programs on organizational characteristics, access to physicians, and adoption of SUD medications. The multivariate model of access to physicians was estimated using multinomial logistic regression (Long and Freese, 2006). Negative binomial regression was used to estimate the associations between organizational characteristics and the number of SUD medications prescribed (Long, 1997). To aid in the interpretation of negative binomial regression results, we calculated the percentage change in the expected count of the dependent variable for a 1-unit increase of an independent variable using the following formula: $(100)(e^b - 1)$, where b is the unstandardized coefficient. Percentage changes in the expected count for a standard deviation increase in the covariates were also calculated for continuous variables using the following formula: $(100)(e^{b(SD)} - 1)$, where b is the unstandardized coefficient and SD is the standard deviation of the independent variable (Long, 1997).

Programs with missing data on the dependent variables were deleted from the analyses (Allison, 2009), resulting in a final n of 593 for the physician access model and a final n of 589 for the medication adoption model. Multiple imputation procedures were used to address missing data on the independent variables (Allison, 2002; Royston, 2005a, 2005b; StataCorp, 2011).

Results

Table 1 displays descriptive statistics for the total sample and compares privately funded programs to publicly funded programs. A majority of the total sample (56.4%) reported prescribing no SUD medications, 10.9% offered only one medication, and 32.7% had adopted more than one medication. Few programs (4.9%) offered all five medications.

The two samples differed significantly in access to physicians, availability of medications, and organizational characteristics. Privately funded programs were more likely to have at least one physician employed on staff, $\chi^2(1) = 12.0$, $p = .002$, whereas publicly funded programs were more likely to only have a physician employed on contract, $\chi^2(1) = 7.52$, $p = .006$. Publicly funded programs prescribed significantly fewer SUD medications than privately funded programs, $t(587) = 4.6$, $p < .001$. Privately funded programs were more likely to be hospital based, $\chi^2(1) = 62.5$, $p < .001$; were more

TABLE 1. Descriptive statistics of specialty substance use disorder treatment programs

Variable	Total Sample % (n) or M (SD)	Publicly Funded Sample % (n) or M (SD)	Privately Funded Sample % (n) or M (SD)	Available n
Access to physicians				
No physician	27.5% (163)	29.3% (73)	26.2% (90)	593
Physician on contract	33.9% (201)	40.2% (100)	29.4% (101)	593
Physician on staff	38.6% (229)	30.4% (76)	44.5% (153)	593
Sum of 5 medications	1.20 (1.61)	0.85 (1.45)	1.45 (1.67)	589
Disulfiram	20.6% (122)	15.9% (39)	24.1% (83)	591
Tablet naltrexone	27.0% (159)	17.2 (42)	33.9% (117)	589
Buprenorphine	32.5% (192)	24.4% (60)	38.3% (132)	591
Acamprosate	27.0% (159)	18.4% (45)	33.0% (114)	589
Injectable naltrexone	13.1% (77)	9.0% (22)	15.9% (55)	589
Hospital based	19.2% (114)	4.0% (10)	30.1% (104)	594
Accredited	53.8% (318)	48.4% (121)	57.1% (197)	591
Government owned	9.3% (55)	17.3% (43)	3.5% (12)	593
% Master's-level counselors	47.8 (34.6)	42.2 (32.3)	51.9 (35.6)	592
Outpatient only	50.5% (300)	46.6% (116)	53.3% (184)	594
Twelve-step model	76.1% (451)	71.8% (178)	79.1% (273)	593
% Referrals from criminal justice system	33.0 (29.8)	36.3 (29.0)	30.9 (30.1)	567

likely to be accredited, $\chi^2(1) = 4.0, p = .04$; and had a greater percentage of master's-level or higher counselors, $t(592) = 3.4, p < .001$. Publicly funded programs were more likely to be government owned, $\chi^2(1) = 32.9, p < .001$, and received a higher percentage of referrals from the criminal justice system, $t(565) = 2.1, p = .03$. The two samples did not vary significantly on 12-step orientation or levels of care.

Table 2 displays the multinomial logistic regression model of access to physicians. Even after controlling for other organizational characteristics, the two samples differed in their employment of physicians. Specifically, publicly funded programs were significantly less likely than privately funded programs to have a physician on staff versus the other two categories of the physician typology (i.e., no physicians on staff/contract [$p = .006$], physician on contract only [$p = .004$]).

Several other organizational characteristics were associated with the physician typology. Program accreditation was

positively associated with the odds of having a physician on staff relative to the odds of having no physician access ($p = .001$). Government ownership was positively associated with the odds of having at least one staff physician or a physician on contract only relative to the odds of having no physician access (all $ps < .05$). The percentage of master's-level or higher counselors was positively associated with two types of physician access (all $ps < .05$). The odds of having a physician on staff or contract were lower in outpatient-only programs relative to the odds of having no access to a physician ($ps < .001$).

Table 3 presents the results of the negative binomial regression model of medication adoption. Publicly funded programs prescribed fewer SUD medications (mean difference = 0.60) compared with privately funded programs ($p = .012$), even after controlling for other organizational characteristics. The expected number of SUD medications prescribed was 28.2% lower for publicly funded programs. As hypothesized,

TABLE 2. Multinomial logistic regression of access to physicians ($n = 593$)

Variable	Physician on contract vs. no physician		Physician on staff vs. no physician		Physician on staff vs. physician on contract	
	RRR [95% CI]	<i>p</i>	RRR [95% CI]	<i>p</i>	RRR [95% CI]	<i>p</i>
Publicly funded (vs. private)	0.967 [0.604, 1.548]	.89	0.501 [0.306, 0.818]	.006	0.518 [0.331, 0.809]	.004
Hospital based (vs. freestanding)	0.713 [0.361, 1.411]	.33	0.744 [0.388, 1.424]	.37	1.042 [0.594, 1.829]	.89
Accredited (vs. nonaccredited)	1.359 [0.860, 2.147]	.19	2.157 [1.349, 3.447]	.001	1.587 [0.996, 3.737]	.03
Government owned (vs. not government owned)	2.789 [1.104, 7.044]	.03	5.380 [2.138, 13.539]	<.001	1.929 [0.996, 3.737]	.05
% Master's-level or higher counselors	1.008 [1.001, 1.015]	.02	1.017 [1.010, 1.024]	<.001	1.009 [1.003, 1.015]	.003
Outpatient only (vs. inpatient only/mixed levels of care)	0.354 [0.220, 0.571]	<.001	0.301 [0.185, 0.490]	<.001	0.850 [0.553, 1.306]	.46
12-step model (vs. no 12-step model)	0.927 [0.562, 1.529]	.77	1.068 [0.634, 1.797]	.81	1.152 [0.715, 1.856]	.56
% Referrals from criminal justice system	0.993 [0.986, 1.001]	.08	0.994 [0.986, 1.002]	.13	1.001 [0.994, 1.008]	.23

Notes: RRR = relative risk ratio; CI = confidence interval.

TABLE 3. Negative binomial regression of adoption of substance use disorder medications ($n = 589$)

Variable	b [95% CI]	p
Publicly funded (vs. private)	-0.331 [-0.589, -0.072]	.01
Physician on staff (vs. no physician)	1.385 [1.028, 1.741]	<.001
Physician on contract (vs. no physician)	1.058 [0.690, 1.426]	<.001
Hospital (vs. freestanding)	0.322 [0.044, 0.600]	.02
Accredited (vs. nonaccredited)	0.301 [0.053, 0.548]	.02
Government owned (vs. not government owned)	0.367 [-0.018, 0.752]	.06
% Master's-level or higher counselor Outpatient only (vs. inpatient only/mixed levels of care)	0.008 [0.004, 0.011]	<.001
12-step model (vs. no 12-step model)	-0.466 [-0.713, -0.219]	<.001
% Referrals from criminal justice system	-0.099 [-0.371, 0.173]	.48
	-0.010 [-0.014, -0.005]	<.001

Notes: b = unstandardized coefficient; CI = confidence interval.

programs with access to a physician on staff or contract prescribed a greater number of SUD medications than programs without access to a physician ($p < .001$). The expected number of SUD medications prescribed was 299.3% greater for programs with a physician on staff and 188.0% greater for programs with a physician on contract relative to programs with no access to physicians.

Several organizational characteristics were associated with the number of SUD medications adopted by these programs. Location in a hospital setting ($p = .02$) and program accreditation ($p = .02$) were positively associated with the number of SUD medications prescribed. Programs with a more professional workforce prescribed a greater number of SUD medications ($p < .001$); a 1 SD -unit increase in the percentage of master's-level counselors ($SD = 34.3$) was associated with a 29.8% increase in expected number of SUD medications prescribed. The expected number of medications prescribed was 37.2% lower for outpatient-only programs relative to those with inpatient only/mixed services ($p < .001$). Criminal justice referrals were negatively associated with SUD medications ($p < .001$); a 1- SD increase in the percentage of referrals from the criminal justice system ($SD = 30.8$) was associated with a 25.4% decrease in the expected number of SUD medications prescribed.

Discussion

This study examined differences in access to physicians and availability of SUD medications between publicly and privately funded treatment programs. Whereas our prior work examined access to physicians separately in public and private treatment programs (Knudsen and Abraham, 2012; Knudsen et al., 2011b, 2012), this is the first study to compare both access to physicians and adoption of SUD medications in public and private treatment programs using multivariate models. This is also our first study to use a count model to examine availability of SUD medications.

Publicly funded treatment programs were significantly less likely to have a physician on staff than privately funded

organizations, a difference that remained significant even after controlling for other organizational characteristics. Public-private differences in adoption of SUD medications also remained significant once organizational characteristics and access to physicians were included in the multivariate model. These findings suggest that patients seeking treatment in the public sector continue to face disparities in access to SUD treatment services that include pharmacotherapies. However, implementation of the Affordable Care Act may facilitate adoption and implementation of SUD medications in publicly funded treatment programs by requiring behavioral health services to be included in the essential health benefits packages for state exchanges and Medicaid expansion plans, as well as enhancing federal mental health parity legislation (Mental Health Parity and Addiction Equity Act of 2008, 2008), which requires that SUD treatment services be covered at parity with medical and surgical services (Buck, 2011; Croft and Parish, 2012; Mechanic, 2012).

Models estimating the number of medications prescribed by treatment programs highlighted the importance of access to physicians, particularly staff physicians. Differences in the expected count of medications suggest that having at least one physician on staff results in greater medication adoption compared with programs that only had physician access through a contract. Many treatment programs cannot afford to employ a physician on staff or contract (Knudsen et al., 2011a); therefore, treatment programs may need to seek alternative approaches for gaining access to physicians. One strategy is to form an integrated or a co-location partnership with mainstream health care providers such as local primary care practices or community health centers and federally qualified health centers. Based on the findings of this study, physicians who are employed on staff are a critical link to improved access to SUD medications, which may also be true in community health center or federally qualified health center settings. Integration of SUD treatment with mainstream health care is a major initiative under the 2010 and 2011 National Drug Control Strategy and the Affordable Care Act and, if successful, could have a positive

impact on the availability of medications for the treatment of SUDs (Office of National Drug Control Policy, 2010, 2011; Patient Protection and Affordable Care Act of 2010, 2010). Specifically, the Affordable Care Act contains a number of mechanisms and incentives to promote integration of SUD treatment and mainstream health care, including the creation of Medicaid health homes, increased reimbursement for primary care, and co-location of primary care and behavioral health services (Buck, 2011; Croft and Parish, 2012; Mechanic, 2012).

Prior research also suggests that there may be limited availability of physicians with SUD specialty training available in local labor markets (Knudsen and Abraham, 2012) in large part because of the lack of addiction medicine training in U.S. medical schools (Miller et al., 2001; Polydorou et al., 2008). However, in July 2011, 10 medical institutions across the United States began offering accredited residency programs in addiction medicine. This represents the first time that addiction residency programs directed toward SUDs have been offered in the United States, and there are plans to increase this number over time (Krupa, 2011).

Although hospital affiliation was not associated with access to physicians, we found that programs based in hospital settings prescribed a greater number of SUD medications. The latter finding is consistent with theory and prior research (Abraham et al., 2011; Knudsen et al., 2005, 2007a; Rogers, 2003) and suggests that having a medical infrastructure and medical treatment orientation may promote use of SUD medications. It is not surprising that accreditation—an indicator of program quality—was positively associated with both having a physician on staff and the number of medications prescribed. This finding suggests that greater efforts to encourage public and private sector treatment programs to become accredited could have a positive impact on the quality of services offered in the specialty treatment system because pressure from key stakeholders may influence adoption of evidence-based practices (DiMaggio and Powell, 1991; Pfeffer and Salancik, 2003).

Treatment programs with a higher percentage of master's-level counselors were more likely to have access to physicians and prescribed a greater number of SUD medications. These findings indicate that having a more professionalized counseling workforce goes hand in hand with access to physicians. Although we are not suggesting causation, these findings support diffusion and institutional theories, which argue that organizations with a more professionalized staff are more likely to adopt innovations (DiMaggio and Powell, 1991; Rogers, 2003). Further, this finding is consistent with prior research that counselor education and training have a positive impact on adoption of specific SUD medications (Abraham et al., 2009; Knudsen et al., 2007b). Although counselors do not themselves prescribe medications, counselor support for the use of medications is vital to successful implementation. Future research should examine whether

the percentage of master's-level counselors is a proxy for a more resource-rich organization or is indicative of a less traditional model of treatment.

The bulk of SUD clients receive treatment through outpatient services (SAMHSA, 2009b), yet outpatient-only programs were less likely to employ physicians on staff or contract and prescribed fewer SUD medications. These findings suggest that outpatient-only programs may be unable to garner the resources necessary to employ physicians or prescribe SUD medications. Administrators of outpatient programs may feel that such services are outside the scope of the treatment services they can offer or may assume that their patients are receiving medical-related services elsewhere. Additional research is needed to examine why outpatient-only treatment programs are less likely to prescribe SUD medications.

Consistent with institutional and resource dependence theories (DiMaggio and Powell, 1991; Pfeffer and Salancik, 2003), programs more reliant on criminal justice system referrals prescribed fewer SUD medications, indicating a disparity in access to SUD medications for patients associated with the criminal justice system. Given the high rates of relapse among parolees, medications could have a positive impact on recidivism and SUD treatment. In fact, a growing body of research suggests that prescribing SUD medications such as buprenorphine and naltrexone to parolees and probationers is a viable strategy to improve SUD outcomes and recidivism (Coviello et al., 2012; Kinlock et al., 2010).

Limitations

There are several limitations of the current study. First, the sample included only publicly and privately funded treatment programs, which limits the ability to generalize to other service settings, such as the Veterans Health Administration, opioid treatment programs that exclusively dispense methadone, and programs in the criminal justice system. Second, the data are cross-sectional, which limits our ability to establish causality. Future research should examine change over time in access to physicians and availability of SUD medications in specialty treatment programs. Third, data on adoption of medications were self-reported by program administrators and were not validated by patient chart review or pharmacy data. Fourth, this study did not examine nonphysician prescribers (e.g., nurse practitioners, physician assistants) or physician-level barriers to prescribing SUD medications, which are important topics for future research.

Conclusions

Our findings highlight the continued existence of a two-tiered SUD treatment system (Horgan et al., 2008; Rodgers and Barnett, 2000; Wheeler and Nahra, 2000) with less access to staff physicians and fewer medications prescribed in

publicly funded treatment programs. Strategies for reducing disparities in access to high-quality SUD treatment may include integration with mainstream health care settings and increased SUD-specific training for physicians. Implementation of the Affordable Care Act may facilitate greater access to physicians and greater adoption and implementation of SUD medications among publicly funded SUD treatment programs (Buck, 2011; Croft and Parish, 2012; Mechanic, 2012).

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