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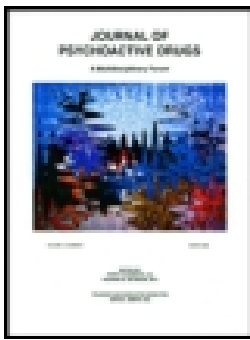
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Integration of Care in the Implementation of the Affordable Care Act: Changes in Treatment Services in a National Sample of Centers Treating Substance Use Disorders

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ABSTRACT

This study examined patterns of medicalization in substance use disorder (SUD) that are aligned with the goals of the Affordable Care Act (ACA). Using a nationally representative sample of SUD treatment programs, we examined changes in several treatment domains. While observed changes were modest, they were in directions that support the thrust of the ACA. Specifically, we found an increase in the percentage of treatment referrals from other health care providers. We found an increase in the number of physicians for programs that did have a physician on staff, and an increase in counselors certified in treating alcohol and drug addiction. There was significant growth in the availability of oral and injectable naltrexone but not of other pharmacotherapies. There was a decrease in support for the 12-step model and an increase on the emphasis of a medicalized treatment model. Finally, we found a shift away from federal block grants and other public funding, consistent with the expectations of the ACA. These data indicate that, while progress is slow, the environment of the recent past has been supportive of the goal of SUD treatment's integration into mainstream medical care.

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Provisions of the Patient Protection and Affordable Care Act (ACA) in the United States, including its incorporation of the pre-existing mandate for parity in insurance reimbursements for behavior disorders, were designed to increase the number of individuals with substance use disorders (SUDs) that have coverage for services, thus increasing entry into SUD treatment. In March 2016, then-President Obama reported that 20 million people who were previously uninsured had signed up for insurance, including those who signed up through either state-based exchanges or state Medicaid expansion, and young adults who were able to stay on their parents' insurance until age 26 (Henry J. Kaiser Foundation 2016). A significant number of these new enrollees are likely to have an SUD (Buck 2011; Garfield et al. 2011), with one projection indicating around 3.6 million newly insured individuals with SUD treatment needs (Mark et al. 2015).

In addition to parity in coverage, the ACA aims to integrate SUD services into primary care to rectify long-standing problems with system fragmentation (Barry and Huskamp 2011; Roman, Abraham, and

Knudsen 2011; Samet, Friedmann, and Saitz 2001). At the same time, integration can be achieved through adding access to primary care services to SUD treatment (Weisner et al. 2001). This study draws upon data from a national study of U.S. SUD treatment programs to examine five research questions related to the medicalization of treatment services that are aligned with the goals of the ACA. First, is there evidence of an increase in referrals into SUD treatment from primary care physicians and other health care professionals? Second, is there an increase in the employment of medical professionals, including physicians, nurses with prescribing privileges, and physician assistants in programs? Third, is there evidence of an increase in adoption and implementation of medication-assisted treatment (MAT) in SUD treatment? Fourth, is there a shift in treatment philosophy toward a medical model of addiction, and a change in the availability of health-related services in SUD treatment providers? Finally, is there an increase in revenues from Medicaid, Medicare, and private insurance, and a decrease in funding from federal block grants and other public grants? These

questions tap how the ACA may be impacting SUD treatment through framing multiple aspects of treatment within medicalized practices.

There are several mechanisms that are likely to increase physicians' awareness of their patients' SUD treatment needs as well as options to treat them. These include the creation of "medical homes" for people with co-occurring disorders and SUDs (Barry and Huskamp 2011; Urada et al. 2014), and the evidence-based practice of Screening, Brief Intervention, and Referral to Treatment (SBIRT) (Babor et al. 2007; Madras et al. 2009; WHO 2008), designed for medical personnel for both early detection and interventions for individuals with risky alcohol and drug use (SAMHSA 2011). Although most primary care physicians ask patients about their alcohol use, fewer use recommended screening protocols (Friedmann et al. 2000). Further, studies on the willingness of primary care physicians to add treatment of opioid addiction with buprenorphine to their practices have revealed resistance to such adoption as well as considerable geographic disparity in adoption patterns (Hutchinson et al. 2014; Knudsen 2015). Nevertheless, we examine the extent to which programs are receiving referrals from health care providers as an indicator of this dimension of the ACA's emphases.

A related dimension of the ACA's emphasis on integration is new or increased employment of medical staff in SUD treatment programs through its reimbursement procedures and prescription drug coverage (Buck 2011). Both the use of pharmacotherapies and Medicaid-reimbursable clinic services typically require delivery under the direction of a physician and medical professionals with appropriate licensure (Buck 2011). There are also expected changes in required training for the counseling workforce, due to reimbursement plans requiring practitioners with advanced degrees and licensing. This is a particular challenge, with about 50% of counselors employed in addiction treatment lacking graduate degrees (Aletraris et al. 2016; Aletraris, Shelton, and Roman 2015; Bride et al. 2016).

With the expected growth in staffing of medical professionals, opportunities for adoption of MAT should also increase (Edmond et al. 2015; Knudsen, Roman, and Oser 2010; Thomas et al. 2003). Previous studies have looked at the adoption of individual pharmacotherapies (Aletraris, Edmond, and Roman 2015; Knudsen and Roman 2016), whereas the present study considers the breadth of pharmacotherapy services, including the adoption of psychotropic and SUD medications as well as implementation of SUD medications.

Associated with medicalization of treatment is a trend toward embracing a medical model of addiction, as opposed to endorsing other treatment models, particularly an emphasis on the 12-step program. Similarly, integration goals of the ACA encourage increased provision of on-site health-related services, such as HIV testing, which are important for substance-abusing populations.

Finally, SUD treatment programs have historically relied on block grants and state contracts (Mark et al. 2011; McCarty et al. 2009), but some treatment previously covered by block grants may instead be covered by the expansion of Medicaid under the ACA (Buck 2011; Woodward 2015). Medicaid and private insurance plans will become primary payers for most SUD treatment services. Thus, in response to the ACA, SUD programs would be expected to have increased utilization of all types of third-party payments for services.

This study included two data collections that examine the characteristics of organizations in the early stages of implementation of the ACA. Some of the changes intended by the ACA may be transformational at the organizational level for many SUD programs. Such change does not occur rapidly. Following ACA enactment, large numbers of enrollees in health plans were not seen until more than three years after the legislation was passed (Henry J. Kaiser Foundation 2014). Furthermore, at this writing, intentions to repeal and replace provisions of the ACA are widespread but ambiguous, with complete disappearance of all ACA provisions unlikely. The ACA is a "machine in motion" and includes interlocking provisions, adding uncertainty as to how the long-term future of SUD treatment will be affected.

Methods

Sample

Data were collected from a national sample of SUD treatment organizations during two 24-month rounds of face-to-face interviews. The first round of data collection ended in January 2012, while the second ended in January 2014. Treatment programs in the 48 continental states and the District of Columbia were randomly sampled from the SAMHSA's Substance Abuse Treatment Facility Locator.

To be eligible, programs were required to be open to the general public, thus excluding Veterans Health Administration facilities, correctional facilities, and court-ordered DUI classes. They were also required to employ at least two full-time equivalent (FTE) employees, and offer a minimum level of care at least

equivalent to Level I outpatient services, as defined by the ASAM placement criteria (Mee-Lee et al. 1996). Detoxification-only programs and methadone-only programs were excluded from the study. Programs were required to have at least 25% of their patients admitted with alcohol as a primary substance abuse problem. Centers screened as ineligible during a telephone screening were replaced by a random selection from the SAMHSA database. The research procedures were approved by the Institutional Review Board of the University of Georgia.

Data were collected using face-to-face interviews with the administrator and/or clinical director of each treatment program. A team of trained interviewers with at least a bachelor's level of education conducted all interviews. In the first wave of data collection, 307 programs participated. There were 200 programs from this sample that participated in the second wave (response rate 65%), which took place approximately 24 months after the initial interview. These 200 centers are used in our analyses.

Measures

Differences in patterns of medicalization between the two time periods were assessed across several domains. First, administrators were asked for the percentage of clients referred from primary care physicians and from other health providers (e.g., ERs and general hospitals). Second, administrators responded to a series of staffing questions. They were asked how many counselors were employed in the program and how many held at least a master's-level degree. This was converted to a percentage. To establish the scope of staff with specific medical training, administrators were also asked for the number of FTE psychiatrists, non-psychiatric physicians, nurses, physician assistants with prescribing privileges, and other medical staff without prescribing privileges on payroll. Using the number of total FTE employees, which includes the categories described earlier, administrators and other staff, a percentage was created for each category.

Third, respondents were asked a series of questions regarding specific medications for SUD and co-occurring psychiatric disorders. The variables for each medication were coded "1" if the treatment program reported current use of the medication, and "0" if it did not. We created dichotomous variables for the following psychiatric medications: SSRIs (e.g., Prozac, Zoloft, Paxil), other antidepressants (monoamine oxidase inhibitors, tricyclic antidepressants), other anti-anxiety medications (e.g. Xanax, Valium), and antipsychotic medications (e.g., lithium, clozapine, risperidone). We also created dichotomous variables for the following SUD medications: acamprostate,

buprenorphine, disulfiram, oral naltrexone, and injectable naltrexone. For SUD medications, we created continuous variables measuring the percentage of a center's patients that were prescribed each medication.

Fourth, questions were asked regarding the program's treatment philosophy as well as the provision of health-related services. Directors were asked the extent to which the organization's therapeutic style emphasized the 12-step model and the medical model of addictions, respectively, using a Likert scale ("0" = no extent; "5" = a very great extent). Provision of on-site, non-SUD health-related services was measured using dichotomous variables for each of the following: primary care, HIV testing, Hepatitis C testing, and treatment of co-occurring psychiatric disorders.

Finally, administrators were asked for the percentage of revenues from the following sources: Medicaid, Medicare, private insurance, client fees, criminal justice, federal block grants, and other public grants (including state and local public funding).

McNemar's chi-square tests were used to compare baseline and follow-up results on dichotomous measures. Paired t-tests were used to compare continuous measures that were normally distributed, and Wilcoxon's signed-rank tests were used to compare continuous variables that were skewed. Reported mean percentages refer to all treatment programs, including those that did not employ that category (e.g., the mean percentage of referrals from primary care physicians included programs with no referrals from primary care).

Results

We found that 64.5% of programs received referrals from primary care physicians in the first round of data collection, and 69% reported receiving referrals from primary care physicians in the second wave (Table 1). While this increase was not significant, the small increase in the mean percentage of referrals within a program that came from primary care physicians was significant ($Z = 3.58, p < .001$). There was a larger increase in the number of programs that reported receiving referrals from health care providers other than primary care physicians. In the first wave, 68.5% of programs received referrals from other health care providers, whereas 79% received them in the second wave (McNemar's $\chi^2 = 21.35, p < .001$). On average, 7.4% of a treatment program's referrals came from such health care providers in the first wave, compared to 13.3% in the second wave ($Z = 7.17, p < .001$). Overall, 79% of programs received referrals from either primary care or other

Table 1. Referral and staffing characteristics in treatment programs ($N = 200$).

	Wave 1		Wave 2		Significance level [†]
Receives referrals from primary care physicians	64.5%	(129)	69.0%	(138)	
% of program referrals from primary care	4.37	(8.50)	5.54	(8.25)	***
Receives referrals from other health care providers	68.5%	(137)	79.0%	(158)	**
% of program referrals from other health care professionals	7.39	(12.28)	13.31	(18.23)	***
Psychiatrist on staff	22.0%	(44)	19.0%	(38)	
# of FTE psychiatrists in program	0.25	(0.99)	0.25	(1.08)	
% FTE psychiatrists in program	0.96	(3.78)	1.44	(7.29)	
Other physician on staff	10.5%	(21)	15.5%	(31)	
# FTE other physicians in program	0.08	(0.33)	0.12	(0.43)	*
% of FTE other physicians in program	0.35	(1.72)	1.38	(8.29)	*
Nurse on staff	40.0%	(80)	38.0%	(76)	
# of FTE nurses in program	1.14	(2.94)	1.20	(3.21)	
% FTE nurses in program	3.36	(7.02)	3.58	(8.61)	
Physician assistant with prescribing privileges on staff	4.0%	(8)	3.0%	(6)	
# of physician assistants in program	0.05	(0.25)	0.08	(0.49)	
% physician assistants in program	0.12	(0.66)	0.12	(0.70)	
Other medical staff without prescribing privileges on staff	18.5%	(37)	25.5%	(51)	*
# of other medical staff in program	1.47	(5.52)	1.60	(6.36)	
% of other medical staff in program	3.22	(9.52)	3.69	(9.85)	
Counselors with M.A. degree or higher on staff	78.0%	(156)	80.5%	(161)	
% counselors with M.A. degrees in program	43.72	(34.25)	46.95	(35.50)	
Certified alcohol & drug addiction counselor on staff	83.0%	(166)	87.0%	(174)	
% certified counselors in program	56.95	(37.20)	61.89	(35.81)	*
FTE employees in program	21.74	(31.68)	21.30	(28.95)	

[†]Wilcoxon's signed rank tests, paired t-tests, or McNemar's chi-square tests. * $p < .05$, ** $p < .01$, *** $p < .001$.

health care providers in the first wave, compared to 87% in the second wave (McNemar's $\chi^2 = 9.00$, $p < .01$, not shown).

Less than a quarter of programs had a psychiatrist on staff at either wave. The number of FTE psychiatrists ranged from 0–10 in wave one, and 0–12 in wave two. In terms of percentages, this represented 0–33.3% of all FTE employees on staff in the first wave, and 0–76.9% of all FTE employees in the

second wave. There were no significant changes in the availability, number, or percentage of FTE psychiatrists on staff.

There was a slight increase, from 10.5% to 15.5%, in programs with a non-psychiatrist physician on staff (McNemar's $\chi^2 = 3.90$, $p = .07$). Similarly, there was a modest increase in the number of FTE physicians on payroll ($Z = 2.21$, $p < .05$), and in their percentage compared to all FTE employees in the program ($Z = 2.12$, $p < .05$). While these percentages indicated that, on average, less than 2% of FTE employees were physicians, this ranged from 0% to 20%. Less than a third of programs (27% in wave one; 29% in wave two) had either a psychiatrist or another physician on staff. An additional 39.5% of programs in wave one and 36% in wave two reported having a physician available on contract. About 62% of programs either had a physician on contract or on their payroll (not shown).

A larger percentage of programs had a nurse on staff, with 40% indicating doing so in the first wave and 38% employing a nurse in the second wave. The number of FTE nurses ranged from 0–20 during both time periods. As with psychiatrists, there were no significant changes in the employment of nurses in the treatment centers. Only 4% of centers in wave one and 3% in wave two had a physician assistant on staff and, on average, physician assistants represented .12% of FTE employees in the center. We did find a modest increase in the employment of other medical staff without prescribing privileges (McNemar's $\chi^2 = 4.45$, $p < .05$).

There was a non-significant increase in the percentage of counselors with an M.A. degree or higher. On average, 43.7% of counselors had a graduate degree in the first wave, compared to 47% in the second wave ($t = 1.56$, $p = .06$). The majority of programs had at least one certified alcohol and drug addiction counselor on staff. However, there was a significant increase in the percentage of the counseling staff that was certified (an increase from 57% to 62%; $t = 2.13$, $p < .05$).

Overall, MAT adoption rates were modest throughout the study (Table 2). We found that 42% of programs offered medications for SUD and/or co-occurring disorders in the first wave, compared to 47% in the second wave. Although a majority of programs reported that they offered treatment for co-occurring disorders (see Table 3), adoption of common types of psychiatric medications was not extensive. SSRIs were the most common type of psychotropic medication offered (40.5% in the first wave; 43.5% in the second wave), while anti-anxiety medications were the least likely to be prescribed (16.5% in wave one; 17.5% in wave two). The only significant increase was

Table 2. Availability of medication-assisted treatment in treatment programs (*N* = 200).

	Wave 1	Wave 2	Significance level [†]
Program offers medication-assisted treatment (includes psychiatric and SUD medications)	42.0% (84)	47.0% (94)	
Program prescribes SSRIs	40.5% (81)	43.5% (87)	
Program prescribes other antidepressants	36.0% (72)	41.5% (83)	*
Program prescribes other anti-anxiety medications	16.5% (33)	17.5% (35)	
Program prescribes antipsychotic medications	37.5% (75)	36.5% (73)	
Program prescribes medications specifically for SUD	29.5% (59)	33.0% (66)	
Program prescribes acamprostate	20.0% (40)	17.0% (34)	
% of patients in program receiving acamprostate	4.77 (16.96)	1.08 (4.24)	**
Program prescribes buprenorphine	17.0% (34)	20.5% (41)	
Program prescribes buprenorphine for detoxification	12.0% (24)	12.5% (25)	
% of patients in program receiving buprenorphine for detoxification	4.07 (17.79)	3.74 (16.45)	
Program prescribes buprenorphine for maintenance	12.0% (24)	16.5% (33)	
% of patients in program receiving buprenorphine for maintenance	3.48 (15.25)	3.60 (13.22)	
Program prescribes disulfiram	14.0% (28)	9.0% (18)	
% of patients in program receiving disulfiram	1.24 (7.42)	0.19 (1.12)	**
Program prescribes oral naltrexone	13.0% (26)	19.0% (38)	**
% of patients in program receiving oral naltrexone	3.19 (13.80)	1.27 (6.34)	
Program prescribes injectable naltrexone for alcohol patients	6.0% (12)	9.0% (18)	
% of alcohol patients in program receiving injectable naltrexone	0.42 (2.77)	0.69 (4.33)	
Program prescribes injectable naltrexone for opioid patients	2.0% (4)	6.5% (13)	**
% of opioid patients in program receiving injectable naltrexone	0.11 (1.17)	0.94 (6.81)	*

[†]Wilcoxon's signed-rank tests or McNemar's chi-square tests. **p* < .05, ***p* < .01, ****p* < .001.

in the availability of other antidepressants (i.e., MAO inhibitors and tricyclic antidepressants) (from 36% to 41.5% of programs; McNemar's $\chi^2 = 4.83, p < .05$).

Adoption of SUD medications was also modest, with 29.5% of programs indicating their use in the first wave

Table 3. Treatment philosophy and availability of health-related services in treatment programs (*N* = 200).

	Wave 1	Wave 2	Significance level [†]
Program treatment philosophy			
Twelve-step model ("0" = no extent; "5" = a very great extent)	3.24 (1.70)	3.03 (1.70)	*
Medical model of addiction ("0" = no extent; "5" = a very great extent)	2.68 (1.74)	2.96 (1.65)	*
Program provides:			
Primary care	13.5% (27)	13.0% (26)	
Dental care	3.5% (7)	3.5% (7)	
On-site HIV testing	35.0% (70)	27.0% (54)	
On-site Hepatitis C testing	14.5% (29)	10.5% (21)	
Treatment for co-occurring disorders	76.0% (152)	82.0% (164)	*

[†]Paired t-tests or McNemar's chi-square tests.

p* < .05, *p* < .01, ****p* < .001.

and 33% in the second wave. There were two SUD medications with significant increases in the percentage of programs using them. Availability of oral naltrexone increased from 13% to 19% of programs (McNemar's $\chi^2 = 8.05, p < .01$). We also found a small but significant increase in the use of injectable naltrexone for opioid patients (but not for alcohol patients), from 2% to 6.5% (McNemar's $\chi^2 = 8.33, p < .01$). Similarly, there was a small increase in the percentage of opioid patients receiving injectable naltrexone ($Z = 2.54, p < .05$). Implementation increased by an average 2% when we only considered organizations that used any SUD medications (not shown). There was a decrease in the percentage of programs using disulfiram that approximated significance (McNemar's $\chi^2 = 3.86, p = .07$). There was also a decrease in the extent of use of disulfiram, measured by the percentage of a program's patients receiving the medication ($Z = 2.63, p < .01$). Finally, while there were no changes in the number of programs that offered acamprostate, there was a decrease in the percentage of patients receiving the medication ($Z = 2.84, p < .01$).

Data regarding programs' treatment philosophy and availability of on-site health-related services are presented in Table 3. There was a small but significant decrease in the extent to which programs endorsed the 12-step model ($t = 1.87, p < .05$), and an increase in the support for the medical model of SUD treatment ($t = 2.05, p < .05$). Nonetheless, support for the medical model was modest and lower than endorsement of the 12-step model. In analyses not shown, endorsement of the medical model was greater than that of the 12-step model among organizations that offered MAT.

Just 11% of programs reported no use of the 12-step model at all during the baseline study, while 14.5% did

not use it at all in the follow-up. About 33% of programs fully endorsed the 12-step model (i.e., gave a rating of “5” on a scale of 0–5) in the first wave, but this dropped to 25% in the second wave. In terms of the medical model of addiction, 18.5% of programs did not emphasize this model at all, while 19% fully endorsed it during the first wave. In the second wave, 12.5% of programs did not use the medical model at all, and 20.5% reported that they emphasized the model to a very large extent.

With the exception of treatment for co-occurring disorders, there was limited availability of health-related services, and no significant changes between the two time periods. About 13% of programs provided on-site primary care and similar percentages were reported for Hepatitis C testing. About a third of programs offered on-site HIV testing. About three quarters (76%) of programs provided treatment for patients’ co-occurring disorders during the first wave. There was a modest and significant increase to 82% approximately 24 months later (McNemar’s $\chi^2 = 6.12, p < .05$).

Table 4 presents data on sources of program revenues. There were three changes between the two waves. There was an increase in the percentage of revenues from client fees ($Z = 2.11, p < .05$), and a decrease in revenues from federal block grants ($Z = 2.06, p < .05$) and other public grants ($Z = 2.28, p < .05$). For example, on average, 14.5% of program revenues came from federal block grants in the first wave, while, on average, programs received around 11.5% of their revenues from block grants at follow-up. There were non-significant increases in the percentage of revenues from Medicaid, Medicare, and private insurance.

Discussion

The ACA offers strong support for medicalization of SUD treatment. This study examined shifts in organizational activities indicative of the patterns of medicalized treatment that are aligned with the goals of the ACA. The changes examined included referrals into treatment from health care providers, employment of medical staff, availability of MAT and other health-

related services, a treatment philosophy that emphasizes the medical model, and changes in revenues from Medicaid, private insurers, and block grants.

While the interviews in the second round of data collection occurred after the passage of the ACA, implementation of many of its significant reforms are complex, require substantial organizational change, and thus are moving relatively slowly. Our findings indicate that, while changes were modest, nearly all changes were in directions that support the thrust of the ACA. The ACA emphasizes greater integration of SUD treatment with general and specialty medical care settings (Tai and Volkow 2013). While there was not a significant increase in the percentage of programs that reported receiving any referrals from primary care providers, we did find an increase in the percentage of their total referrals from primary care. We also found an increase in programs that received referrals from other health care providers, as well as an increase in the percentage of those referrals. Yet, the percentage of referrals was low, even in the follow-up study, with a mean of 13% of a center’s referrals coming from health care providers other than a primary care physician. Both the adoption and appropriate implementation of processes such as SBIRT in non-SUD medical practice are challenging because of the time constraints and competing demands faced by many practitioners (Rahm et al. 2015).

Past studies on SUD treatment staff focused on the training and background experience of the counseling workforce. Less attention has been given to the presence of medical professionals and paraprofessionals in treatment programs. We found that 38% of programs had no consistent access to a physician, either on contract or on staff. Results also showed an increase in the number of FTE physicians for those programs that did have a physician on staff, an increase in the availability of other medical staff without prescribing privileges, and an increase in the percentage of counselors certified in alcohol and drug addiction. These trends show an important change underway, given the stipulations on reimbursement of treatment services delivered by qualified professionals. Nevertheless, the high cost of having a physician is a significant barrier for programs (Knudsen, Abraham, and Oser 2011), as is the scarcity of addiction medicine training in U.S. medical schools (Polydorou, Gunderson, and Levin 2008). Future research should consider examining whether programs without physicians on staff or contracted for a portion of their time make the decision not to employ physicians due to funding reasons or due to an inconsistency with their program’s treatment philosophy.

Table 4. Sources of treatment programs’ revenue ($N = 200$).

	Wave 1	Wave 2	Wilcoxon’s signed-rank tests
% of program revenues from:			
Medicaid	19.51 (25.98)	20.13 (26.10)	
Medicare	1.41 (5.70)	2.13 (8.17)	
Private insurance	12.12 (21.52)	12.52 (20.63)	
Client fees	15.18 (22.92)	17.32 (25.90)	*
Criminal justice	6.76 (16.49)	8.07 (19.16)	
Federal block grants	14.48 (23.54)	11.53 (20.21)	*
Other public grants	7.93 (16.89)	6.17 (14.51)	*

* $p < .05$, ** $p < .01$, *** $p < .001$.

The ACA may facilitate use of pharmacotherapies through co-existing parity legislation that requires that SUD treatment services be covered by third-party payers at the same level as services for other medical problems (Buck 2011). Previous studies examined adoption of individual medications, whereas the present study considered several medications used for the treatment of SUDs and co-occurring disorders.

More than half of the programs did not use any medications and more than two-thirds did not use SUD medications specifically. Overall, we found greater usage of psychiatric medications compared to medications for SUD, and an increase in the availability of antidepressants other than SSRIs. With the exception of oral naltrexone and injectable naltrexone specifically for opioid patients, we did not find a significant growth in the availability of SUD medications over time. The increase in the percentage of opioid patients receiving injectable naltrexone was not surprising, given that injectable naltrexone was only approved for opioid use in late 2010.

A decrease in the implementation of acamprosate and disulfiram could be due to patients substituting other medications for these two, although we could not measure this with our data. Disulfiram is the oldest approved medication for SUD treatment, used primarily for alcohol problems, but occasionally to treat cocaine dependence. Based on mechanisms of operant conditioning, it has long had mixed reviews among SUD treatment personnel.

The use of MAT is a major move toward increased medicalization, especially since it requires the presence of medical personnel. One reason for the low levels of implementation we observed is the lack of access to a physician who can offer primary care services and prescribe medications (Aletraris and Roman 2015; Edmond et al. 2015; Knudsen, Roman, and Oser 2010; Thomas et al. 2003). Even if an organization has decided to use a medication, but only has a physician on contract for a limited time, there may only be enough physician time to evaluate, prescribe, and monitor the medication among a few patients.

In terms of treatment philosophy, emphasis on the 12-step model was prevalent in both waves, and was greater than the emphasis on the medical model. Some programs regard pharmacotherapy as an adjunct to treatment, rather than as a core treatment. However, organizations that had adopted SUD medications were more likely to place a greater emphasis on the medical model compared to the 12-step model. While the 12-step model is not completely incompatible with a medicalized approach to treatment, its emphasis on complete abstinence from chemicals can be problematic

(Saxon and McCarty 2005). Over time, the data showed a decrease in support for the 12-step model and an increase on the emphasis of a medicalized treatment model, indicative of a broader trend toward medicalized SUD treatment.

The ACA provides incentives to create co-locations offering primary care and behavioral health services. While there has been much attention on integrating SUD services into medical care through either the creation of health homes or greater implementation of SBIRT (Tai and Volkow 2013), this study considered integration of medical services into SUD treatment programs. We did not find a significant shift in the provision of non-SUD health services, and availability of these services was modest. For example, 13% of programs provided primary care for their patients and about a third provided HIV testing. Nonetheless, the majority of programs did provide treatment for co-occurring disorders, and there was a significant increase in the number of programs that offered treatment for such conditions. Since innovation adoption is facilitated by the presence of similar and compatible innovations (Rogers 2003), this finding is not surprising, given that treatment techniques for co-occurring disorders are more closely aligned with standard SUD treatment practices than interventions for other diseases.

Finally, we found a small but significant shift away from federal block grants and other public funding, consistent with the expectations of the ACA. While we did not find an increase in Medicaid or private insurance revenues, research indicates that a significant number of programs do not accept insurance (Terry-McElrath, Chriqui, and McBride 2011). Programs that have the ability to bill insurers and attract clients with insurance will likely benefit from the number of new enrollees afforded by the ACA.

Several limitations should be noted. The data were self-reported and thus subject to recall bias, although self-reporting is a common practice in organizational-level research, including the N-SSATS. Data on adoption and implementation of medications were self-reported by clinical directors and were not validated by pharmacy data. We did not ask for the specialties of FTE physicians, so it is unclear whether physicians with an addiction specialty were available in the programs. Future research should examine factors that hinder the employment and retention of different types of medical professionals in SUD treatment programs. There also needs to be consideration of differences in treatment outcomes associated with having physicians on staff compared to having a contractual relationship with them. These data do not include state policy variables that could influence

the medicalization of SUD treatment. We did not examine differences among programs in states that had adopted Medicaid expansion and those that had declined expansion. Examining the full impact of the ACA will require longitudinal analyses that consider data from insurance plans, state-level decisions, treatment organization, and patient characteristics.

Conclusion

In the context of the ACA, this study revealed an increase in referrals from health care providers, numbers of physicians and other medical staff, and availability of a central medication, naltrexone, highlighting a shift toward medicalized treatment. We also found a shift away from federal block grants for SUD treatment providers. These findings are consistent with the ACA, indicating that it is having an impact. While many of our revealed changes are small, most meet the standard conditions of statistical significance. Additional studies are needed to confirm this trajectory.

There is a long way to go before we see SUD treatment integrated into mainstream medical care, and patients being able to have confidence that the whole range of their health care needs, including addiction, are being met through accessible and quality medical care. However, specialty SUD treatment has developed over the past 50 years in almost complete isolation from mainstream medicine. The SUD treatment programs in our sample are generally dominated by psychosocial approaches, which, in turn, are reflected in and by the professional credentials of their staff. Our findings show low rates of adoption of MAT, primary care services, and limited employment of medical professionals. If these apparent barriers diminish over time at the rates observed here, there may be cause to believe that the integration goal of the ACA in regard to SUD treatment will eventually be met.

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