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The estimated impact of state-level support for expanded delivery of substance use disorder treatment during the COVID-19 pandemic

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Abstract

Background and Aims: To prevent COVID-19 transmission, some United States (US) federal regulations on substance use disorder (SUD) treatment were suspended in March 2020. This study aimed to quantify the extent of state-level policy uptake and the potential number of people with SUD affected by these policy changes across the US, as well as to assess if policy uptake correlated with rates of people with SUD already in treatment or needing treatment.

Design: Cross-sectional analysis of policies implemented as of April 13, 2020.

Setting and Participants: A total of 50 US states and the District of Columbia

Measurements: State-level implementation of: oral schedule II controlled substances emergency prescription, extended take-home doses for medication for opioid use disorders (MOUD), home-delivery of take-home medications, telemedicine for schedule II-IV prescriptions, telemedicine for buprenorphine prescribing initiation, and waiver of out-of-state Drug Enforcement Administration (DEA) registration. Rates per 100 000 population of: adults in treatment for SUD, MOUD treatment at facilities with opioid treatment programs, SUD based on Diagnostic and Statistical Manual of Mental Disorders (DSM)-IV criteria, and needing, but not receiving treatment.

Findings: Half of the states (n = 24) enacted no policies, leaving ~460 955 people in treatment and 114 370 people on MOUD pre-pandemic uncovered by any policy expansion. Only telemedicine for buprenorphine initiation was marginally associated with pre-pandemic rate of SUD treatment (OR = 1.003, 95% CI = [1.001, 1.006]) and rate of MOUD therapy (OR = 1.006,

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AUTHOR CONTRIBUTIONS

Elizabeth Nesoff: Conceptualization, methodology, supervision, formal analysis, funding acquisition, visualization; **Megan Marziali:** Data curation; project administration. **Silvia Martins:** Conceptualization; funding acquisition; project administration; resources.

DECLARATION OF INTERESTS

None.

SUPPORTING INFORMATION

Additional supporting information may be found in the online version of the article at the publisher's website.

95% CI = [1.002, 1.011]) in univariable analysis, but these associations were no longer significant when controlling for state-level demographics. No policies were associated with state-wide SUD prevalence or rate of unmet treatment need ($P > 0.05$).

Conclusions: Twenty-four United States states did not implement at least one federal policy for substance use disorder treatment expansion as of April 2020, leaving approximately half a million people in treatment pre-pandemic potentially without access to treatment or risking exposure to COVID-19 to continue in-person therapies.

Keywords

COVID-19; medication for opioid use disorders; policy; substance use disorder; substance use treatment; unmet treatment need

INTRODUCTION

The COVID-19 pandemic introduced challenges for treatment initiation and continuation for people with substance use disorders (SUD) [1]. Before the COVID-19 pandemic, only opioid treatment programs (OTPs), which are closely regulated by United States (US) federal and state agencies, could deliver methadone, with medication delivered daily and in person [2, 3]. Although some OTPs also supplied buprenorphine, physicians in outpatient nonspecialty settings were authorized to prescribe buprenorphine after receipt of training and a waiver issued by the Substance Abuse and Mental Health Services Agency (SAMHSA) [2, 4, 5]. However, there were still rigid restrictions on buprenorphine prescribing by waived physicians, including in-person treatment requirements. Because of necessary physical distancing to prevent COVID-19 transmission, requiring in-person medical visits for receipt of treatment had the potential to impede those on medication for opioid use disorders (MOUD) from continuing care or prevent new MOUD prescriptions. At the same time, physical distancing also may have exacerbated pre-existing mental health problems that can contribute to substance use [6], possibly increasing overdose risk among people with SUD specifically because of the nature of using substances in isolation [1, 7, 8]. People with SUD may also be at increased risk of COVID-19 infection [9], suggesting a need to ensure people with SUD can appropriately access treatment without placing themselves at risk for COVID-19 infection.

In response to these concerns, some US federal regulations on treatment were suspended in March 2020. For example, SAMHSA granted flexibility for patients already in treatment to receive a 28-day supply of medication [10]. The Drug Enforcement Administration (DEA) waived a requirement for in-person buprenorphine consultations, allowing people seeking treatment to be prescribed buprenorphine after consulting with a waived prescriber via telemedicine [11]. Evidence of treatment maintenance under these policies is promising. Recent findings from Texas suggest that, whereas buprenorphine prescription and dispensation decreased from March to May 2020, this decrease was insignificant, indicating that expanded telehealth effectively maintained treatment access [12]. However, implementation of these policies across municipalities has been inconsistent [13, 14], and it is yet unclear if these policy changes contributed to increased treatment initiation by people with SUD [15]. The purpose of this analysis was to quantify the extent of state-level policy

uptake and the potential number of people with SUD affected by these policy changes across the United States, as well as to assess if policy uptake correlated with rates of people with SUD already in treatment and people with SUD needing treatment.

METHODS

Oversight of SUD treatment and MOUD therapy in the United States is a multilateral system involving states, SAMHSA, DEA, the Department of Health and Human Services, and the Department of Justice [16]. Consequently, the loosening of federal regulations for MOUD medications—namely, methadone and buprenorphine—does not immediately correlate to state-level policy change. To investigate state-level support for federal treatment expansion, we included any state-level guidelines, fact sheets, memoranda, or executive orders addressing the federal expansion of SUD treatment. Policies were identified through the COVID-19 US State Policy Database, which amassed policy changes in response to the pandemic from state government websites [17].

We identified and quantified the following state-level policies as of April 13, 2020, for all 50 states and the District of Columbia (Figure 1; Supporting information Table S1): emergency prescription of oral schedule II controlled substances [18], extended take-home doses for MOUD [10], home-delivery of take-home medications [10], telemedicine for schedule II-IV prescriptions [18], telemedicine for the initiation of buprenorphine prescribing [18], and waiver of out-of-state DEA registration [18]. Full bibliography for individual state-level policies is included in online Supporting information Appendix A.

To evaluate the potential impact of these policy changes, we compared the type of policy to the following state-level SUD indicators for 2017 (date of most recent data availability) (Figure 2): Number of clients in treatment for SUD age 18 or older [19]; rate of MOUD treatment at facilities with OTPs per 100 000 population [19]; percent of total state population with a SUD [20]; percent of total state population needing, but not receiving treatment for SUD [20]. SUD was defined as meeting criteria for illicit drug (e.g. cocaine, heroin, and methamphetamine) dependence or abuse based on the 4th edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) [20]. We standardized all measures to a rate per 100 000 population by state using five-year American Community Survey (ACS) estimates for 2017 [21]. We also assessed whether policy enactment was associated with state COVID-19 fatality rates as of April 13, 2020 [22]; health insurance coverage, as measured by state Medicaid expansion adoption and implementation as of 2020 [23]; and state percentages for political party affiliations as of 2017 [24]. The outcomes of interest—enactment of each SUD treatment policy—were measured as binary variables (yes vs no) in logistic regression analyses to assess whether policy uptake correlated with pre-pandemic treatment need, as well as unmet need, using R 3.4.1 (R Foundation for Statistical Computing, Vienna, Austria). State-level covariates (e.g. median household income, percent unemployment, and race/ethnicity demographics) [21] were also assessed to evaluate whether significant associations between policy enactment and population under treatment were a byproduct of a state's population characteristics. The analysis plan was not pre-registered and results should be considered exploratory.

RESULTS

Over half ($n = 27$) of states enacted at least one of the above-mentioned policies, corresponding to ~822 877 people in treatment for SUD and 223 604 people receiving MOUD (as of 2017) (Table 1). However, 47% of states ($n = 24$) enacted no policies, leaving ~460 955 people in treatment for SUD and 114 370 people on MOUD pre-pandemic uncovered by any policy expansion. Emergency prescription of oral schedule II substances was the policy most frequently implemented, with 33% ($n = 17$) of states implementing this measure; only 4% ($n = 2$) of states (Arizona and Nevada) implemented the out-of-state DEA registration exemption. Twenty-seven percent implemented extended take-home doses for MOUD ($n = 14$), whereas 16% implemented home-delivery of take-home medications ($n = 8$), 24% implemented telemedicine for schedule II-IV prescriptions ($n = 12$), and 20% implemented telemedicine for the initiation of buprenorphine prescribing ($n = 10$).

Policy uptake did not correspond to unmet treatment need or SUD prevalence, with no significant associations across policies and SUD prevalence measures ($P > 0.05$) (Supporting information Table S2). Telemedicine to initiate buprenorphine prescribing was the only policy significantly associated with rate of people in treatment pre-pandemic. In univariable analysis, the odds of implementing expanded telemedicine for buprenorphine initiation remained practically unchanged as rate of SUD treatment among adults age and older increased (OR = 1.003, 95% CI = [1.001, 1.006], $P = 0.013$), and rate of MOUD at facilities with OTPs was marginally significant (OR = 1.006, 95% CI = [1.002, 1.011], $P = 0.011$). When controlling for state-level demographics, the odds of implementing expanded telemedicine for buprenorphine initiation barely increased as rate of SUD treatment among adults age 18 and older increased (aOR = 1.003, 95% CI = [1.001, 1.006], $P = 0.046$), and the association with rate of MOUD at facilities with OTPs was no longer significant (aOR = 1.006, 95% CI = [0.999, 1.013], $P = 0.091$).

Policy uptake was not significantly associated with state COVID-fatality rates or Medicaid expansion in univariable analysis ($P > 0.05$) (Supporting information Table S3). In univariable analysis, the odds of enacting extended take-home doses for MOUD were significantly negatively associated with percent Republican party affiliation (OR = 0.914, 95% CI = [0.835, 0.985], $P = 0.0295$) and significantly positively associated with percent Democrat party affiliation (OR = 1.125, 95% CI = [1.030, 1.257], $P = 0.018$). The odds of home-delivery of take-home medications were also significantly negatively associated with Republican party affiliation (OR = 0.893, 95% CI = [0.793, 0.977], $P = 0.027$) and significantly positively associated with Democrat party affiliation (OR = 1.119, 95% CI = [1.015, 1.269], $P = 0.039$). The odds of enacting expanded telemedicine for buprenorphine initiation were marginally associated with Democrat party affiliation (OR = 1.107, 95% CI = [1.012, 1.240], $P = 0.042$). However, when controlling for state-level demographics in multivariable analysis, none of these associations remained significant ($P > 0.07$).

DISCUSSION

Although treatment expansion has been praised as a rare positive outcome of the pandemic [11, 14, 25, 26], the real-world impact on people with SUD already engaged in treatment

and people seeking to initiate treatment is largely unknown [15, 27]. The federal suspension of SUD treatment restrictions, while necessary and laudable, does not mean states and municipalities have implemented these policies. Furthermore, the limited number of buprenorphine prescribers pre-pandemic may further curtail the impact of these policies [15, 27]. This paper provides an estimate of the potential impact of these policies on SUD treatment availability during the COVID-19 pandemic using 2017 estimates of treatment and SUD prevalence, the date of most recent data availability. Although many of the policies evaluated here directly address opioid use disorder in particular, they do not address opioid use disorder exclusively. We also include indicators of unmet treatment need for SUD, which includes substances other than opioids (e.g. cocaine and methamphetamine).

Twenty-four states declined to formally implement at least one federal policy for treatment expansion as of April 2020, leaving approximately half a million people in treatment pre-pandemic potentially without access to treatment or risking exposure to COVID-19 to continue in-person therapies. Stressors related to the emotional and economic impact of the COVID-19 pandemic may exacerbate triggers for substance use [1, 6-8]. Policies that supplement in-person therapies and other support services are essential to prevent SUD relapse and possible overdose [14, 28]. Furthermore, people with SUD are at increased risk for contracting COVID-19 and may suffer increased morbidity and mortality from the disease [9, 29]. Policies that promote social distancing while maintaining treatment are necessary to prevent COVID-19 infection among this vulnerable population.

State-level policy implementation largely did not correspond to rates of pre-pandemic treatment or SUD prevalence, with one exception. Telemedicine for buprenorphine initiation was only marginally associated with pre-pandemic rate of SUD treatment among adults age 18 and older and rate of MOUD therapy at OTPs in univariable analysis, but these associations were no longer significant when controlling for state-level demographics. No policies were associated with state-wide SUD prevalence or rate of unmet treatment need, indicating that state-level policies may not effectively address the needs of people with SUD not already engaged in treatment before the COVID-19 pandemic. This is particularly worrisome given the increasing rates of substance use—both initiation and increased use—during the pandemic [30, 31].

Limitations merit discussion. This study is cross-sectional, and estimates of treatment and SUD prevalence are from 2017. We do not know the exact number of people who were able to enter or maintain treatment because of these policies or the number of providers in each state who took advantage of them. It is difficult to parse differences in state policy implementation, particularly in the first year after policy implementation [32, 33]. However, this paper provides a conservative estimate of the potential impact of federal SUD treatment policy expansion on SUD treatment availability, offering support for the implementation of SUD treatment policies in more states. Continued study of these policies is needed to understand the long-term impact of expanded delivery on SUD treatment.

Expansion of policies to enable access to MOUD treatment for SUD is essential, and further inquiry into the impact of these policies on treatment access is necessary. Ultimately, eliminating barriers to SUD care and expanding access to MOUD treatment will prevent

substance use-related deaths and morbidity from continued SUD and should continue beyond the COVID-19 pandemic period.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

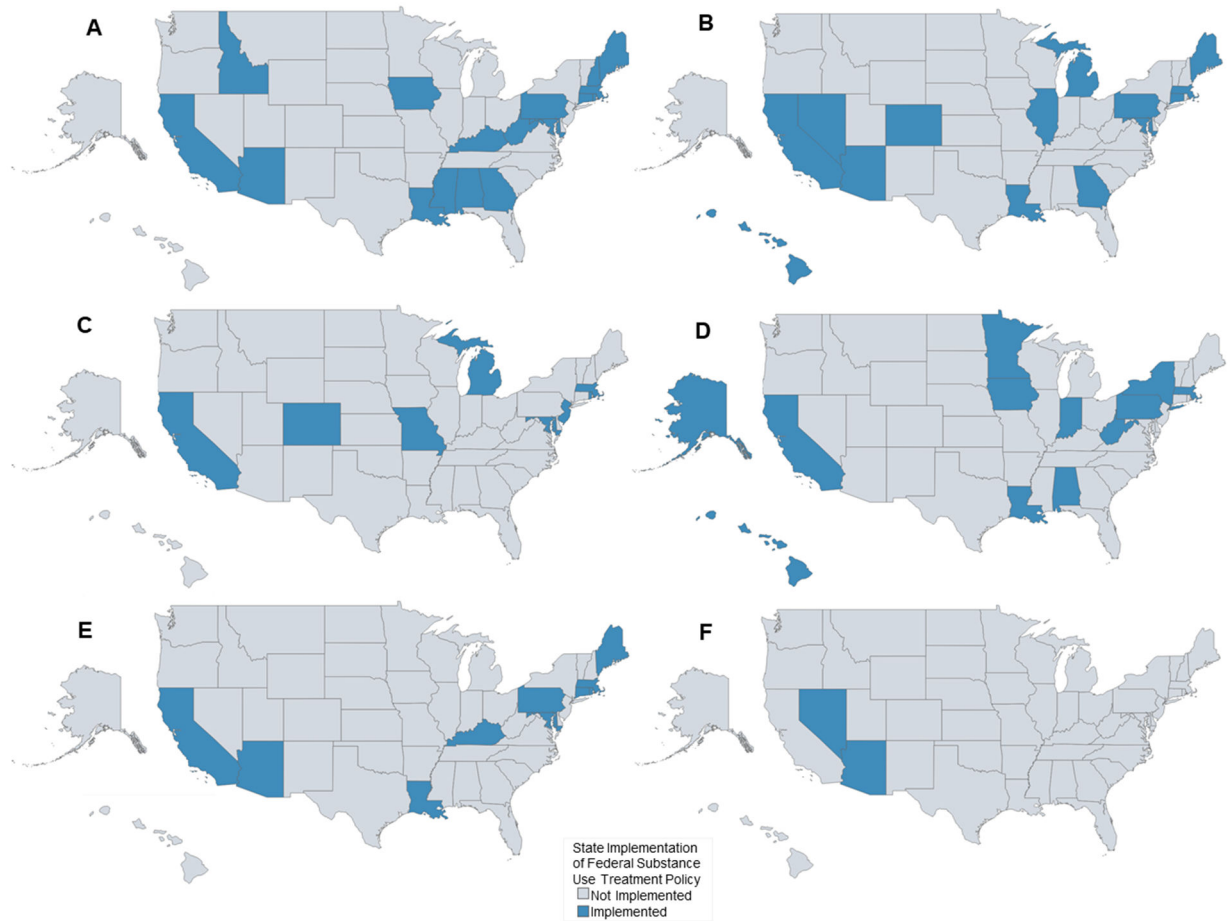
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**FIGURE 1.**

Maps of state-level implementation of US federal substance use treatment policies, April 13, 2020. Maps A-F: State-level implementation of federal policies (a) emergency prescription of oral schedule II controlled substances; (b) extended take-home doses for MOUD; (c) home-delivery of take-home medications; (d) telemedicine for schedule II-IV prescriptions; (e) telemedicine for the initiation of buprenorphine prescribing; (f) waiver of out-of-state DEA registration

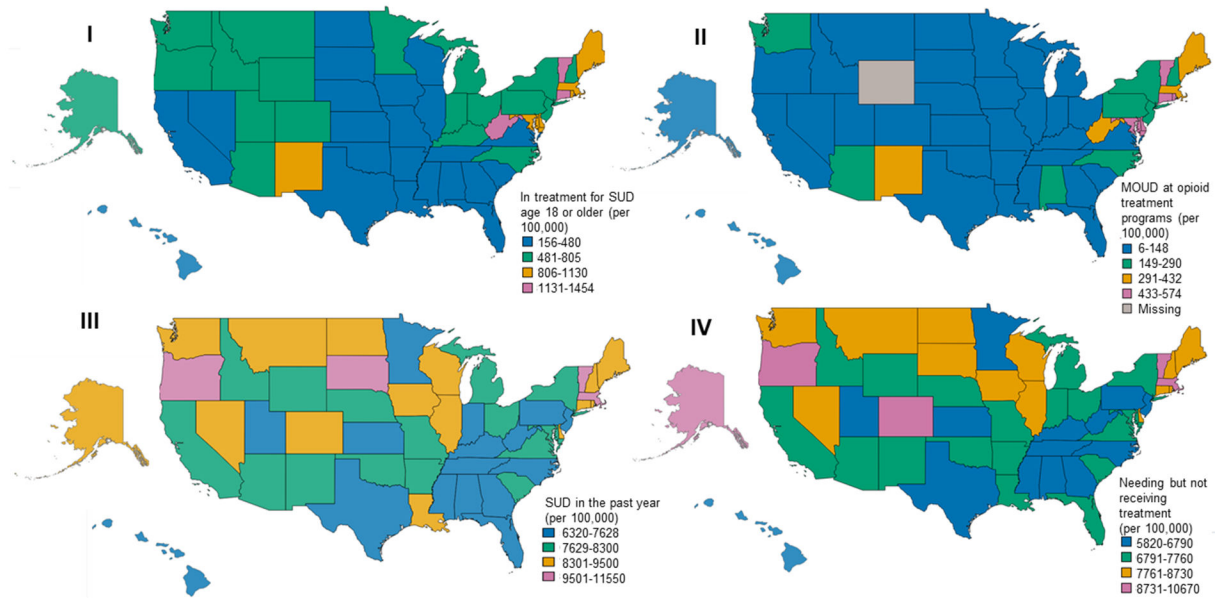


FIGURE 2.

Maps of state-level pre-pandemic US substance use disorder (SUD) treatment and unmet treatment need. Maps I-IV: Rates per 100 000 population of (I) clients in treatment for SUD age 18 or older; (II) Medication for opioid use disorders (MOUD) treatment at facilities with opioid treatment programs; (III) SUD based on DSM-IV criteria; (IV) needing but not receiving treatment for SUD

Summary of US states implementing expanded substance use treatment policies as of April 13, 2020, and estimated population in treatment for substance use disorder pre-pandemic

TABLE 1

Substance use disorder treatment policy	US states implementing policy	Population in treatment for substance use disorder age 18 or older pre-pandemic ^a	Population receiving MOUD at facilities with opioid treatment programs pre-pandemic ^a
Emergency prescription of oral schedule II controlled substances	17	500, 078	152, 698
Extended take-home doses for MOUD	14	541, 515	155, 374
Home-delivery of take-home medications	8	363, 846	102, 592
Telemedicine for schedule II-IV prescriptions	12	454, 464	127, 432
Telemedicine for the initiation of buprenorphine prescribing	10	416, 827	128, 319
Waiver of out-of-state DEA registration	2	45, 384	9297
At least one policy implemented	27	822, 877	223, 60

Source: SAMHSA [19].

^a As of 2017, date of most recent data availability.

Abbreviations: MOUD = medications for opioid use disorders; DEA = Drug Enforcement Administration.