

Availability of Buprenorphine Treatment in the 10 States With the Highest Drug Overdose Death Rates in the United States

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Objective: The objective of this study was to assess the accuracy of the Substance Abuse and Mental Health Services Administration (SAMHSA) database for patients who use it to seek buprenorphine treatment.

Design and Measurements: Buprenorphine providers within a 25-mile radius of the county with the highest drug-related death rates within the 10 states with the highest drug-related death rates were identified and called to determine whether the provider worked there, prescribed buprenorphine, accepted insurance, had appointments, or charged for visits.

Results: The number of providers listed in each county ranged from 1 to 166, with 5 counties having <10 providers. In 3 counties no appointments were obtained, and another 3 counties had ≤ 3 providers with availability. Of the 505 providers listed, 355 providers (70.3%) were reached, 310 (61.4%) of the 505 listings were correct numbers, and 195 (38.6%) of the 505 providers in the listings provided buprenorphine. Of the 173 clinics that provided buprenorphine and were asked about insurance, 131 (75.7%) accepted insurance. Of the 167 clinics that provided buprenorphine and were asked about Medicaid, 105 (62.9%) accepted it. Wait times for appointments ranged from 1 to 120 days, with an average of 16.8 days for those that had a waitlist. Among the 39 providers who reported out-of-pocket costs, the average cost was \$231 (range: \$90 to \$600). One hundred forty of the 505 providers listed in the database had appointments available (27.7%). Three hundred sixty-five of the 505 providers did not have appointments available (72.3%) for various reasons, including the fact that 120 providers (32.9% of the 365 providers) could not be reached, and 137 of the numbers (37.5% of the 365 listed numbers) were wrong. Other reasons appointments could not be obtained included the fact that providers did not treat outpatients, were

not accepting new patients, were out of office, or required a referral.

Conclusion: Although the SAMHSA buprenorphine practitioner locator is used by patients and providers to locate treatment options, only a small portion of clinicians in the database ultimately offered initial appointments, implying that the database is only marginally useful for patients.

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KEY WORDS: buprenorphine treatment, opioid epidemic, access, drug-related deaths, insurance

Opioids are the primary cause of death from drug overdoses, accounting for 42,249 deaths in the United States in 2016.¹ From 2016 to 2017, the rate of opioid overdoses increased by 30% in 45 states, with some states seeing a 70% increase.² According to the White House Council of Economic Advisors, in 2015 the economic cost of the opioid epidemic was \$504 billion, which is over 6 times larger than previous estimates.³ Another study concluded that, in 2013 in the United States, prescription opioid misuse increased health

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AVAILABILITY OF BUPRENORPHINE

care and substance abuse treatment costs by \$29.4 billion and criminal justice costs by \$7.8 billion.⁴ Medical complications of opioid use included neonatal abstinence syndrome, human immunodeficiency virus, and hepatitis C, among other conditions.⁵ Decreased productivity at work due to opioid misuse cost \$20.8 billion in 2013.⁴

One of the mainstays of opioid addiction treatment, available since 2002, is buprenorphine, which is an opioid receptor partial agonist that stimulates the opioid receptor ~60% as much as other opioids. Buprenorphine satisfies cravings for opioids and prevents withdrawal symptoms among those with opioid dependence. Buprenorphine is often considered a preferred treatment because individuals can get weekly or monthly prescriptions for the medication and administer it at home, compared with methadone treatment which generally requires individuals to go to a clinic daily to receive the medication. However, there are restrictions on who can prescribe buprenorphine. At present, to prescribe buprenorphine, medical personnel must complete specialized training (except for board-certified addiction specialists who are exempt from the training). After completing the training, the Drug Enforcement Administration (DEA) adds an X to the provider's DEA number, which must then be listed on all buprenorphine prescriptions.⁶ After providers complete the training, they can elect to be listed on the Substance Abuse and Mental Health Services Administration (SAMHSA) database (www.samhsa.gov/medication-assisted-treatment/practitioner-program-data/treatment-practitioner-locator), which, according to the Buprenorphine Information Center, is the only public database for this treatment, although there are also datasets of buprenorphine providers maintained by the DEA and SAMHSA that are made available to researchers upon request.⁶

Since the advent of buprenorphine, many efforts have been made to expand access to this treatment, but as of 2012, only 3% of primary care providers and 16% of psychiatrists could prescribe buprenorphine, the majority of whom practiced in urban areas.⁷ Previous studies have also shown that there is a dearth of providers who can prescribe buprenorphine,⁸ but the demand for buprenorphine is so great that 24% of specialty addiction treatment organizations in Ohio that provided buprenorphine therapy stated that they had to turn patients away.⁹ Studies have also shown that many buprenorphine prescribers practice below their patient

limits and have many months when they see no patients requiring buprenorphine.¹⁰

SAMHSA maintains the Buprenorphine Practitioner Locator, which categorizes providers with the ability to prescribe buprenorphine who choose to be included in the database by state, county, and zip code.¹¹⁻¹³ Individuals seeking treatment for opioid addiction may use this SAMHSA database to access provider contact information when they wish to begin buprenorphine treatment. While this database provides prescriber contact information, it does not state whether the clinicians who are listed are currently prescribing the medication or whether patients are able to access appointments with listed providers. Previous research has suggested that even physicians who are legally able to prescribe buprenorphine may choose not to provide buprenorphine for various reasons. Although the Buprenorphine Practitioner Locator is not typically used by researchers, it can be used by patients who are seeking care and its inaccuracy could result in delays in receiving treatment for their opioid use. Past studies have shown that some databases offered by health insurance companies are often rife with wrong numbers or closed practices,^{14,15} but, to our knowledge, no other studies have assessed the accuracy of this SAMHSA database as a means of predicting availability of buprenorphine treatment in some of the US counties with the highest rates of death from drug overdose.

In this study, we assessed whether providers in the SAMHSA database in the 10 states with the highest drug overdose death rates could be reached at the listed number, as well as whether they had appointment availability and whether they accepted insurance. We also sought to ascertain what the out-of-pocket costs for appointments were and, in those instances when we could secure an appointment, the wait time before the first appointment.

METHODS

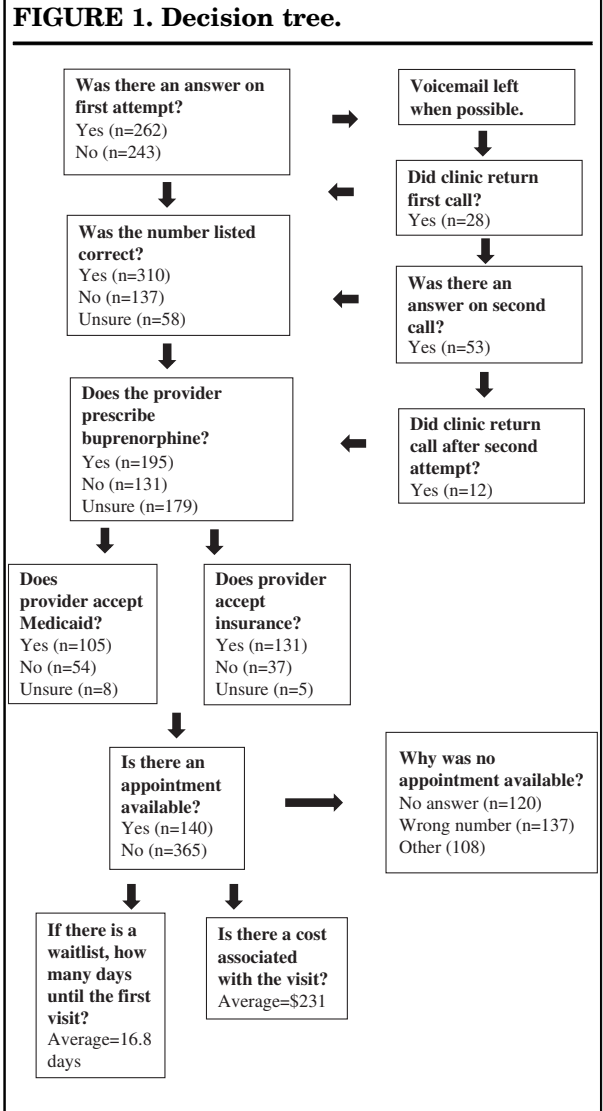
The Centers for Disease Control and Prevention (CDC) Drug Overdose Death Data from 2015 was used to identify the 10 states with the highest overall death rates from drug overdoses: West Virginia (WV), New Hampshire (NH), Kentucky (KY), Ohio (OH), Rhode Island (RI), Pennsylvania (PA), Massachusetts (MA), New Mexico (NM), Utah (UT), and Tennessee (TN).¹⁶ For each of the 10 states, we

AVAILABILITY OF BUPRENORPHINE

used the County Health Ranking and Roadmaps 2017 dataset to identify the county in that state with the highest death rate from an opioid overdose.¹⁷ These were McDowell, WV; Coos, NH; Bell, KY; Montgomery, OH; Kent, RI; Cambria, PA; Bristol, MA; Rio Arriba, NM; Carbon, UT; and Benton, TN. Each county was queried in Google Maps, and the zip code at the center of each county was recorded so that the surrounding 25-mile radius would have the highest likelihood of specifically including the selected county and not including neighboring counties. This process was conducted separately by 2 authors to ensure consistency. Because counties differed in size, a 25-mile radius around the central zip code at times included the entire county in addition to parts of surrounding counties, whereas at other times the 25-mile radius did not cover the entire county. This was deemed acceptable because the purpose of the study was not to evaluate the availability of treatment in an entire county, but rather, whether the SAMHSA listings are an accurate predictor of appointment availability.

The central zip code for each county was entered into the Buprenorphine Treatment Practitioner Locator on the SAMHSA database. Providers within a 25-mile radius from the center of these zip codes were selected. Two providers were removed because they had no phone number listed and 79 duplicate entries were removed, resulting in a total of 505 total providers within a 25-mile radius of the 10 zip codes.

The SAMHSA provider listings were evenly distributed among all authors so that all 505 providers identified in the database were called (Fig. 1). Calls were made on nonholidays, during normal weekday business hours (9 AM to 5 PM) in the local time zone of each county called. All calls were made within a 2-month timeframe. Phone numbers listed in the database included providers' personal cellphones, private practices, receptionists at outpatient clinics, and departments of hospitals. If there was no answer or we did not receive a call back from a given provider, a second attempt was made to reach the provider ~1 week later. After 2 calls with no answer, no further attempts to contact the provider were made. Voice messages were left for providers when possible with a callback phone number to a study-specific phone number. We asked them to call back as soon as possible. When voicemails were left for providers,



we asked for their first available appointment for buprenorphine treatment and which insurance plans they accepted if any, including Medicaid. We were able to determine whether these calls were returned by regularly checking the voice message line for returned calls and updating the study database with new information as necessary. If providers returned the call and did not leave a message, attempts were made to match the incoming number (via caller identification) with provider but this method might not have captured all returned calls.

If the provider or the office staff were reached, they were asked if the provider currently prescribed

AVAILABILITY OF BUPRENORPHINE

buprenorphine. Providers were not asked if they had prescribed buprenorphine in the past because our intention was to assess whether the database was up to date with the provider's current status as a buprenorphine provider. For providers who stated that they did not prescribe buprenorphine, no further questions were asked and the call was ended. Providers who said they prescribed buprenorphine were asked if they accepted patients with insurance and if they accepted Medicaid. Providers were also asked if they were accepting new patients and, if so when the first available appointment was.

Data have been reported as percentages. Descriptive data were collected and assembled in a Microsoft Excel database. The Cambridge Health Alliance Institutional Review Board granted an exemption for this study.

RESULTS

In the 10 counties selected from each of the 10 states with the highest overdose death rates, the number of providers listed within a 25-mile radius of the selected zip code ranged from 1 (Rio Arriba, NM) to 166 (Bristol, MA). The population density of the counties listed varied and the number of prescribers per 100,000 residents varied dramatically by county (Table 1). Five of the counties had <10

providers listed (Coos, NH/Benton, TN/Carbon, UT/McDowell, WV/Rio Arriba, NM). The total number of unlisted providers, which was obtained from the SAMHSA Office of Policy, Planning, and Innovation, was included in Table 1.

Of the 505 providers called, we were able to reach 355 of the providers listed (70.3%) either because they picked up on the first or second attempt or because they returned our call. In some instances, even though we could not reach the clinic, we could ascertain from the voicemail recording whether or not the number was correct. We were able to determine that 310 (61.4%) of the total 505 numbers listed were correct and that 137 (27.1%) of the numbers listed were wrong numbers. Phone numbers were designated as incorrect if the number was no longer in service, could not be completed as dialed, was used by a different person or facility, or the physician no longer worked there. With ~11.5% of the total numbers listed (n = 58), we were not able to ascertain whether or not the phone number was correct because there was no response or no identifying voicemail.

Of the 505 total prescribers listed, 131 (25.9%) did not prescribe buprenorphine, while 195 (38.6%) did prescribe buprenorphine. Thirty-five percent (n = 179) of the time we could not determine if a listed provider offered buprenorphine treatment due to difficulty reaching the clinic or provider or because the

TABLE 1. Geographic Breakdown of Buprenorphine Providers

<i>County</i>	<i>Population (2010 Census)</i>	<i>Opioid Overdose Death Rate*</i>	<i>#Providers per 100k People</i>	<i>#Confirmed Buprenorphine Providers</i>	<i>#Providers With Appointments</i>	<i>#Unlisted Buprenorphine Providers**</i>
Benton, TN	16,489	57.7	42	2	2	8
Carbon, UT	21,403	23.1	37	4	3	3
McDowell, WV	22,113	93.2	18	2	0	1
Bell County, KY	28,691	72.3	49	3	3	2
Coos, NH	33,055	31.6	12	2	0	4
Rio Arriba, NM	40,246	82.1	2	0	0	6
Cambria, PA	143,679	34.7	24	15	12	23
Kent, RI	166,158	27.7	93	59	34	2
Montgomery, OH	535,153	46.3	21	35	26	89
Bristol, MA	548,285	28.1	30	73	60	4

*Per 100k people.

**The total number of unlisted providers was obtained from the SAMHSA Office of Policy, Planning, and Innovation.

KY indicates Kentucky; MA, Massachusetts; NH, New Hampshire; NM, New Mexico; OH, Ohio; PA, Pennsylvania; RI, Rhode Island; SAMHSA, Substance Abuse and Mental Health Services Administration; TN, Tennessee; UT, Utah; WV, West Virginia.

AVAILABILITY OF BUPRENORPHINE

person answering the phone did not know whether or not the provider prescribed buprenorphine.

Among the 173 providers who provided buprenorphine and were asked if they accepted insurance, we were able to determine that 131 (75.7%) accepted private insurance, while 37 (21.4%) did not, while insurance status could not be determined in 5 cases (2.9%). Of the 167 providers who prescribed buprenorphine and were asked if they accepted Medicaid, 105 (62.9%) accepted Medicaid, while 54 (32.3%) did not accept Medicaid, whereas for the remaining 8 providers (4.8%) this could not be determined.

Overall, of the 505 providers listed, 140 (27.7%) had appointments available. Of the 505 providers listed, 110 providers (21.8%) had wait times before an initial appointment ranging from 1 to 120 days. Of the 69 providers with wait times > 7 days, the average time until the appointment was 25 days. Two providers in Massachusetts and 1 in Rhode Island had wait times of 120 days. For 1 provider in Massachusetts, a caller was told the waitlist was closed because there were 190 people on the list.

Seventy-one (14.1%) of the 505 providers listed had appointments available in ≤ 7 days. In our study, providers we contacted in the counties in New Hampshire, New Mexico, and West Virginia had no appointments available, while there were only 2 available appointments in the county in Tennessee and only 3 available appointments in the counties in Utah and Kentucky (Table 1). For the 39 providers who had out-of-pocket costs associated with the visit, the cost for the initial visit ranged from \$90 to \$600, and the average cost for the initial visit was \$231.

Among the 365 providers who did not have appointments available, there were a range of reasons. For 120 providers (32.9%), an appointment could not be secured because there was no answer at the number listed in the database or we did not receive a return call after we left a voice message. For 137 providers (37.5%), the number listed was wrong, meaning that the number was no longer in service, could not be completed as dialed, was used by a different person or facility, or the physician no longer worked there. In one instance, a caller was told that the clinician had last worked in that clinic 12 years ago. Of the other providers for whom no appointment was available, some were not accepting new patients, and others required a referral, were temporarily out of the office (eg, for sick leave or maternity leave), or did not accept outpatients.

DISCUSSION

Previous studies have used either the DEA and/or SAMHSA datasets as a way to capture changes in the availability of buprenorphine treatment on a state by state basis. The Buprenorphine Practitioner Locator used in this study is the only one of its kind where eligible buprenorphine providers can elect to have their contact information publicly available and patients can search by zip code to find a nearby provider. We wanted to assess its accuracy given that patients often use it as a way to find medication-assisted treatment for opioid use. Before this study, it was unknown what the experience of individuals who were seeking services was like, namely whether the database was up to date, whether the providers eligible to provide buprenorphine were actually doing so, and how long wait times were to see providers. Recommending this database as a resource for patients who hope to access buprenorphine treatment presumes that the providers in the database actually provide buprenorphine and are accepting patients. Our findings suggest that the SAMHSA database may not be an accurate source for provider contact information or for practices that actually offer buprenorphine treatment.

Furthermore, if individuals were to use the database to obtain care for an opioid use disorder, they would be able to secure an appointment with just over a quarter of all providers listed in the database and would get the wrong number just as often. In addition, when they did reach a provider who was currently providing buprenorphine, there were long wait times of up to 3 months, and one third of providers did not accept Medicaid. Our findings are particularly concerning for the counties we assessed in New Hampshire, New Mexico, and West Virginia—although they had some of the highest opioid overdose death rates in the United States, strikingly there were no appointments available for patients seeking care.

To adequately confront the opioid crisis, patients need to be able to access accurate information about which providers are actually providing buprenorphine in their area, and whether there are appointments available. Unfortunately, our findings indicate that the SAMHSA database likely overestimates the number of providers prescribing buprenorphine in a given region. To connect patients with treatment for opioid use, it may be necessary to regularly update the SAMHSA database and remove providers who

AVAILABILITY OF BUPRENORPHINE

are no longer in practice or who are not providing buprenorphine. Given the current opioid epidemic, and the deficits in the number of providers able to prescribe buprenorphine relative to patients in need, perhaps it is also time to make it less burdensome to become a buprenorphine provider. Legislation passed in 2016 which allowed nurse practitioners and physician assistants to begin prescribing buprenorphine is a step in the right direction. Our findings also revealed that numerous practices do not accept insurance and charge fees that render treatment with buprenorphine inaccessible to many patients.

Our study had several limitations. We did not contact providers who chose not to be listed on the SAMHSA website (exact numbers included in Table 1). We also only called listed providers within a 25-mile radius of the county with the highest drug overdose death rate within the 10 states with the highest drug-related deaths and therefore we do not know what availability of buprenorphine treatment exists elsewhere. In addition, given that we were unable to sample approximately one third of those listed in our database because we could not reach them after 2 attempts, we do not know what their potential availability might have been. Also, the return number we gave providers was periodically monitored so it is possible that we missed some providers who did return our calls but did not leave a message. Providers were also not asked if they had ever prescribed buprenorphine; therefore, it was unclear whether the records were inaccurate, to begin with, or whether there was a high turnover rate of providers deciding not to provide treatment.

Despite these limitations, our findings are a cause for concern and indicate that in the counties with the highest drug overdose death rates in each of the 10 states with the highest drug overdose death rate, treatment for opioid addiction is difficult to obtain. SAMHSA needs to routinely assess the accuracy of its database of buprenorphine prescribers and update it as necessary.

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