Buprenorphine Supply, Access, and Quality: Where We Have Come and the Path Forward

Christopher T. Breen and David A. Fiellin

The toll of the opioid epidemic in the United States continues to grow, with nationwide deaths from opioid overdose surpassing 42,000 in 2016,[1] driven in part by a rise in deaths from fentanyl and other non-methadone synthetic opioids, which doubled from 3.1 deaths per 100,000 in 2015 to 6.2 deaths per 100,000 in 2016.[2] The epidemic's severity warrants the mobilization of resources and use of available tools to combat the crisis.

One tool that has been shown to treat opioid addiction effectively is opioid agonist treatment (OAT) with one of 2 approved medications: methadone or buprenorphine.[3] OAT typically combines medication with counseling and has been associated with reduced overdose deaths, improved retention in treatment, decreased criminal behavior, and reduced transmission of infectious disease,[4] making its expanded utilization a logical goal in the public health effort to address the crisis.

Due to restrictions placed on methadone in the U.S., rapid expansion of OAT can most plausibly occur through increased prescribing of buprenorphine, which is available in different formulations and marketed under various trade names. The Drug Addiction Treatment Act of 2000 (DATA 2000) allows appropriately trained providers to prescribe buprenorphine,[5] making it more accessible and more likely to experience growth in utilization than methadone. Methadone must be dispensed at a clinic that has received accreditation from the Substance Abuse and Mental Health Services Administration (SAMHSA) as an opioid treatment program.[6] Due to federal constraints, methadone has been subject to limited expansion.

In the context of the continuing opioid epidemic and the need for effective addiction treatment, this paper provides an overview of existing research, guidelines, and policy related to three key aspects of buprenorphine treatment: supply, access, and quality. It then identifies areas for further inquiry, potential policy changes, and other possible actions that states could take. In particular, this paper argues that better data on buprenorphine supply and access, how supply and access relate to buprenorphine utilization, and treatment quality are necessary to monitor and direct the response to the opioid epidemic. Data collection alone

Christopher T. Breen *is a medical student at Yale School of Medicine. He received an A.B. in Politics from Princeton University.* **David A. Fiellin, M.D.,** *is a Professor of Medicine, Emergency Medicine and Public Health at Yale where he directs the Program in Addiction Medicine. His research is focused on implementing addiction treatment in general medical settings.*

The Journal of Law, Medicine & Ethics, 46 (2018): 272-278. © 2018 The Author(s)
DOI: 10.1177/1073110518782934

https://doi.org/10.1177/1073110518782934 Published online by Cambridge University Press

will not resolve the crisis, but it can better characterize the situation and guide interventions.

Supply

The supply of buprenorphine treatment can be conceptualized as the total prescribing capacity in a geographic area, which is the number of people that can be treated with buprenorphine at a given point in time. Per DATA 2000, qualified physicians can be issued a waiver that allows them to prescribe medication approved by the Food and Drug Administration for the treatment of opioid use disorder (OUD) in Schedules III, IV, and V without having to comply with the separate registration requirement of the Narcotic Addict Treatment Act of 1974. To qualify, physicians can meet one of several requirements, including completing 8 hours of training or obtaining a board certification in addiction. Waivers are issued with a limit on the number of patients that a physician can treat with buprenorphine at any given point in time. The limit is set at 30 patients in the first year, but after the first year, physicians can request an increase in their limit to 100 patients.[7] Recently, physicians who have prescribed with a 100-patient limit for at least one year became eligible to apply to increase their patient limit to 275 patients.[8] Also recently, nurse practitioners and physician assistants became eligible for waivers to prescribe buprenorphine for OUD to up to 30 patients after completing 24 hours of training. As with physicians, they will be able to request an increase in their patient limit after a year of prescribing.[9]

These restrictions on buprenorphine prescribing have contributed to a shortfall in supply required to provide OAT to those needing treatment in nearly all states.[10] As of 2012, more than half of counties nationwide had no DATA-waivered provider.[11] Rural areas, in particular, have been found to suffer from limited prescribing capacity.[12] Studies have identified barriers to increasing both prescribing capacity and utilization of this capacity. One physician survey found that many were reluctant to obtain DATA waivers out of fear that they would be inundated with requests for buprenorphine treatment.[13] The same survey noted barriers to increasing prescribing reported by waivered physicians. These included a shortage of time to see additional patients, dissatisfaction with reimbursement rates, and a lack of belief in OAT.[14] Nonetheless, buprenorphine prescribing has grown significantly since the medication's FDA approval for OUD in 2002, with the number of outpatient treatment visits involving buprenorphine increasing from an estimated 160,000 in 2003 to more than 2 million in 2013.[15]

In the context of the continuing opioid epidemic and the need for effective addiction treatment, this paper provides an overview of existing research, guidelines, and policy related to three key aspects of buprenorphine treatment: supply, access, and quality. It then identifies areas for further inquiry, potential policy changes, and other possible actions that states could take. In particular, this paper argues that better data on buprenorphine supply and access, how supply and access relate to buprenorphine utilization, and treatment quality are necessary to monitor and direct the response to the opioid epidemic. Data collection alone will not resolve the crisis, but it can better characterize the situation and guide interventions.

Although supply and treatment utilization lag behind need, the number of waivered prescribers has also grown significantly since 2002. One study found that in 2002, 48.6 percent of the U.S. population lived in — what the authors considered to be — counties with opioid treatment shortages, and by 2011 that percentage had fallen to 10.4 percent.[16] There is also evidence that supply has expanded in areas of need, with one study finding an association between rates of opioid overdose deaths and growth in prescribing capacity.[17] Additionally, another study found that the amount of buprenorphine dispensed grew faster than the number of physicians with DATA waivers during the time period 2004-2011.[18] The same study found that the number of physicians waivered at the 100-patient level was significantly associated with higher amounts of buprenorphine being dispensed, but that there was no clear relationship with physicians waivered at the 30-patient level.[19] The authors

The Journal of Law, Medicine & Ethics, 46 (2018): 272-278. © 2018 The Author(s)

https://doi.org/10.1177/1073110518782934 Published online by Cambridge University Press

suggest that many physicians who obtain waivers to treat 30 patients may prescribe to few, if any, patients, whereas active prescribers increase their limit to 100 patients.[20] This hypothesis aligns with studies that have shown that a relatively small percentage of providers actually run up against these limits.[21] While it is possible that the few high-volume providers who prescribe at their capacity are capable of treating more patients than currently allowed, these data suggest that raising treatment caps alone may not dramatically impact the number of people receiving buprenorphine treatment.

Another barrier to increasing supply is limited support and training for prescribers. It remains rare that medical schools or residencies provide training in the provision of OAT or buprenorphine.[22] One study found that, after receiving training as required by DATA 2000, many reticent physicians pointed to lack of experience as the main barrier to prescribing, suggesting that additional training and support might be beneficial.[23] The Providers' Clinical Support System for Medication Assisted Treatment (PCSS-MAT), an initiative funded by SAMHSA, aims to increase prescribing by providing access to training and mentoring.[24]

Access

As indicated above, we consider the inability of a patient to receive treatment due to lack of an available provider to be an issue of inadequate *supply*. A related, yet separate, factor that results in a patient being unable to receive treatment is inadequate *access*. We define access as the ability of patients to receive buprenorphine treatment from available prescribers. Anything that prevents patients who wish to receive treatment, apart from a shortage of available prescribing capacity, we consider a barrier to access. Existing literature has focused on two factors impacting a patient's access to buprenorphine treatment: financial accessibility and prohibition of OAT in much of the criminal justice system.

Both providers and third-party payers play a role in determining financial accessibility. Perhaps the most significant financial barrier that some providers impose is not accepting insurance. One telephone survey found that nearly 50% of active prescribers in Ohio did not accept insurance.[25] Another study found that private physicians in New York who did not accept Medicaid served as a barrier to low-income, and disproportionately minority, groups accessing treatment.[26] Moreover, even when providers do accept insurance — as many do — patients must have adequate insurance coverage to access those resources, which is not always the case. In fact, states that opted to expand Medicaid have experienced larger increases in prescriptions for buprenorphine covered by Medicaid than states that did not expand Medicaid, suggesting that Medicaid expansion may have increased the number of people receiving treatment.[27] Another study indicated that expansion of Medicaid might also lead to more physicians obtaining waivers, resulting in increased prescribing capacity.[28]

Even with insurance coverage of OAT, patients may encounter cumbersome policies that restrict access. Providers have highlighted the insurance practice of requiring prior authorization before covering buprenorphine treatment as a significant barrier.[29] An American Society of Addiction Medicine (ASAM) review of Medicaid fee-for-service plans found that, although all states covered the cost of buprenorphine, prior authorization requirements were common.[30] Similarly, others have described a trend toward increasing Medicaid coverage of OAT accompanied by policies like prior authorization that may decrease OAT utilization.[31] Prior authorization requirements may vary within a single state across different Medicaid managed care plans, as some states allow each managed care plan to set its own preferred drug list and prior authorization requirements.[32] The ASAM study also found that some state Medicaid plans placed arbitrary limits on the duration of buprenorphine treatment or on the buprenorphine dose that could be prescribed after a specified duration of treatment.[33] Another study found that a Massachusetts medicaid policy requiring more frequent approval for higher doses decreased prescibing of higher-than recommended doses without significantly decreasing access to buprenorphine.[34]

Since the ASAM study, some states have removed Medicaid prior authorization requirements for buprenorphine, and at least one additional state, Indiana, is in the process of removing them.[35] A similar phenomenon has occurred with private insurance plans, which have also routinely imposed prior authorization requirements. Recently, some of the nation's largest insurers have begun eliminating the requirements. For at least two of these companies, Anthem and Cigna, the move occurred as part of a settlement with the New York Attorney General, who had been investigating whether the insurance companies' plans had unfairly prevented patients from receiving buprenorphine treatment.[36]

When considering access to addiction treatment, incarcerated persons are a particularly relevant group, as people with addictions are disproportionately represented in jails and prisons.[37] This disparity results, at least in part, from the criminalization of drug use. Yet despite calls for access to addiction treatment for people in correctional institutions, most incarcerated

The Journal of Law, Medicine & Ethics, 46 (2018): 272-278. © 2018 The Author(s)
https://doi.org/10.1177/1073110518782934 Published online by Cambridge University Press

persons are not able to access OAT.[38] In fact, many are forced to stop treatment when they enter the criminal justice system.[39] This increases their risk for relapse and overdose upon release. Furthermore, a recent study found that less than 5 percent of non-incarcerated persons referred to treatment through the criminal justice system (e.g., by a police official, judge, prosecutor, probation officer, etc.) received OAT as part of their treatment plan, compared with over 40 percent of people who were referred to treatment by a non-criminal justice source.[40]

Quality

A clear consensus on how to define and measure treatment quality has proved elusive thus far. However, the Center for Substance Abuse Treatment (CSAT), which is part of SAMHSA, and ASAM have issued treatment guidelines for providers who prescribe buprenorphine for OUD intended to promote certain standards of care. Both include recommendations for initiating and monitoring medication, access to psychosocial treatment, toxicology testing, and frequency of office visits, among others.[41] The previously discussed PCSS-MAT initiative is intended to assist providers in delivering quality treatment by providing training on subjects similar to those included in the CSAT and ASAM guidelines and through mentoring of new prescribers.[42]

One study investigating quality in a randomized trial of office-based methadone identified lessons relevant to office-based buprenorphine treatment. It highlighted the need for better processes to monitor urine toxicology, to respond to patient illicit drug use while receiving treatment, and to connect patients to psychiatric services for comorbid psychiatric conditions. The study suggested that active monitoring of these processes would promote treatment quality. [43]

A more recent retrospective study examined Pennsylvania Medicaid data from 2007 to 2012 for a set of quality metrics defined by the authors. Some of these metrics coincide with the treatment guidelines mentioned above, including frequency of office visits, toxicology testing, and psychosocial treatment. Two additional metrics relate to potentially inappropriate prescribing of benzodiazepines and opioids other than buprenorphine. Concurrent use of buprenorphine and benzodiazepines increases risk of accidental injury and overdose, so co-prescribing should be monitored carefully. Prescribing buprenorphine along with other opioids may indicate misuse or diversion.[44] The study observed that 76 percent of buprenorphine prescriptions were associated with an office visit in the preceding 30 days. Sixty percent of people receiving buprenorphine had received at least one urine drug screen, and 41 percent had received behavioral health counseling services. Thirty-eight percent filled prescriptions for benzodiazepines in the same year they received buprenorphine treatment, and 35 percent of enrollees filled prescriptions for other opioids in the same year. Based on these metrics, the authors expressed concern about the quality of buprenorphine treatment being provided.[45]

The field continues to work to agree upon appropriate quality metrics.[46] Ideally these metrics would be associated with cogent clinical outcomes including retention in treatment, decreased illicit opioid use, mortality, and patient function. An additional challenge is that of operationalizing quality metrics using claims or other electronic databases. For instance, in the aforementioned study using Pennsylvania Medicaid claims data it is difficult to know if patients were in need of additional visits or counseling. Claims data also may not indicate the clinical needs that may have led to acute pain management (e.g., opioids for surgery).[47]

Areas for Further Investigation and Action

States can do more to address issues of supply, access, and quality, and they should inform their actions with real-time data whenever possible. First, further work should be done to relate measures of supply with treatment rates and treatment need. Both the Drug Enforcement Administration and SAMHSA track prescribing capacity. Since buprenorphine is a Schedule III medication, states track buprenorphine prescriptions through their prescription drug monitoring programs (PDMPs). PDMP data could be analyzed to calculate treatment rates at the state level and by smaller geographic area. Real-time reporting to PDMPs[48] would allow for up to date information on aspects of supply, access, and quality. Treatment need could be estimated based on metrics such as non-OAT treatment admissions, non-fatal and fatal opioid overdose rates, injection-related HIV and hepatitis C infection, drug seizures, and rates of heroin use or nonmedical use of prescription pain relievers as assessed by the National Survey on Drug Use and Health.

According to a newsletter sent to buprenorphine prescribers, SAMHSA is conducting some analyses along these lines and will be publishing "national and state maps that will reveal areas of high mortality (counties with a high per capita rate of opiate overdose deaths), areas of greatest need (counties with no certified practitioners), and areas with high mortality and an insufficient number of certified practitioners."[49]

Such information will prove valuable in understanding the distribution of prescribing capacity, yet in order to understand the impact of supply there

The Journal of Law, Medicine & Ethics, 46 (2018): 272-278. © 2018 The Author(s)
https://doi.org/10.1177/1073110518782934 Published online by Cambridge University Press

must be information about how this capacity is used. Comparing prescribing capacity and treatment rates to estimates of need for treatment would provide an indication of how treatment supply is able to respond to the need for treatment. Monitoring how prescribing capacity is used would provide information about how individual providers are responding to treatment needs.

Armed with this data, states and their public health officials could proactively reach out to providers — both those with waivers to prescribe buprenorphine and those without — in order to understand what facilitates treatment and what impedes it. Based on the feedback received, states could design and test interventions to increase both prescribing capacity (i.e., more providers obtaining waivers) and prescribing capacity utilization (i.e., prescribers treating more patients). Such a process would require frequent monitoring in order to assess progress, understand the impact of interventions, and enable course correction when necessary. Without monitoring and assisting providers in the effort to enroll more patients in treatment, states may experience unnecessarily low rates of treatment.

Although this paper's focus is treatment supply, access, and quality, the issue of demand warrants further consideration by public health officials. Evidence suggests that demand for treatment exceeds access to treatment in some situations, as seen in diverted buprenorphine used to prevent withdrawal or for "self-treatment."

It will also be important to track data to determine the impact of recent policy changes intended to increase rates of treatment with buprenorphine. To what extent are new nurse practitioner and physician assistant prescribers utilizing their prescribing capacity? Is this increase in capacity reaching areas previously underserved? Because scope of practice laws vary,[50] investigation is needed into whether states that grant independent prescribing authority to nurse practitioners observe a greater increase in prescribing capacity or in patients receiving treatment than states that require physician supervision. States should also monitor the prescribing practices of physicians with 275-patient limits to assess the impact of raising the patient limit.

As to issues of access, removing prior authorization requirements and arbitrary limits on the duration of treatment may increase access to buprenorphine and promote increased treatment rates. When policies change, states should utilize PDMP data to study how treatment rates compare across insurers with different policies, or to compare treatment rates in plans with more restrictive policies (e.g., prior authorization requirements) and those without such policies. Additionally, states should monitor whether increases in access translate into greater utilization across different socioeconomic and racial groups to determine if further, more targeted interventions may be necessary. Regarding treatment for people in the criminal justice system, access to addiction treatment should be guaranteed in the same way that other medical care is, as several organizations have advocated.[51]

Studies have tested interventions that could increase access by allowing for greater treatment rates with the existing supply of providers. One study found that telemedicine was effective in retaining people in treatment, with 50 percent remaining in treatment after one year. If replicable elsewhere, this modality could allow people in areas with limited supply to receive buprenorphine treatment.[52] A pilot study investigated the use of shared appointments, whereby multiple people meet together with a prescriber, allowing for more efficient use of prescriber time and for patients to receive peer support. The study found that 52.7 percent of people remained in treatment for 6 months. There was no control group against which to compare outcomes.[53] Further studies of such treatment modalities should be conducted.

Although this paper's focus is treatment supply, access, and quality, the issue of demand deserves further consideration by public health officials. Evidence suggests that demand for treatment exceeds access to treatment in some situations, as seen in diverted buprenorphine used to prevent withdrawal or for "self-treatment."[54] In other situations, demand may be lower than necessary to reach adequate levels of treatment, even in the setting of adequate supply and access. Several factors may prevent someone from seeking out or accepting OAT, including stigma, which is often fueled by a belief that remission or "recovery" requires abstinence from opioid medications.[55] States may be able to design and test interventions to increase understanding, awareness, and use of OAT as treatment for addiction.

The Journal of Law, Medicine & Ethics, 46 (2018): 272-278. © 2018 The Author(s)

https://doi.org/10.1177/1073110518782934 Published online by Cambridge University Press

Conclusion

An important goal in addressing the opioid epidemic is increasing the number of people enrolled in OAT. Due to the existing regulations in the U.S., buprenorphine is more accessible and capable of accommodating new patients than methadone. Supply and access are necessary preconditions for buprenorphine treatment to be utilized, and prior research has shed light on some factors that impact buprenorphine supply and access.

States can make use of PDMP data in order to gain a clearer understanding of the current treatment landscape. PDMP data can allow states to regularly, or even continuously, monitor how much, where, and by whom buprenorphine is prescribed. Such data would facilitate analysis of the impact of policies affecting supply and access to determine their influence on treatment. As part of these efforts, measurable and actionable quality measures should be defined and tracked by stakeholders to ensure that treatment expansion translates into effective care. Establishing a robust monitoring system would allow states to set goals, assess progress, and target and test interventions to expand high quality buprenorphine treatment.

Note

The authors have no conflicts to disclose.

References

1. Centers for Disease Control and Prevention, U.S. Department of Health and Human Services, *Drug Overdose Death Data*, *available at* <https://www.cdc.gov/drugoverdose/data/statedeaths.html> (last visited Jan. 24, 2018).
2. H. Hedegaard, M. Warner, and A. M. Miniño, *Drug Overdose Deaths in the United States, 1999–2016*, NCHS Data Brief, no 294 (Hyattsville, MD: National Center for Health Statistics, 2017).
3. R. P. Mattick, C. Breen, J. Kimber, and M. Davoli, "Buprenorphine Maintenance Versus Placebo or Methadone Maintenance for Opioid Dependence," *Cochrane Database of Systematic Reviews*, no. 2 (2014): CD002207.
4. N.D. Volkow, T.R. Frieden, P.S. Hyde, and S.S. Cha, Perspective, "Medication-Assisted Therapies — Tackling the Opioid-Overdose Epidemic," *New England Journal of Medicine* 370, no. 22 (2014): 2063-2066.
5. 21 U.S.C. § 823 (2018).
6. Substance Abuse and Mental Health Services Administration, U.S. Department of Health and Human Services, *Methadone*, *available at* <https://www.samhsa.gov/medication-assisted-treatment/treatment/methadone> (last visited Feb. 21, 2018).
7. See *supra* note 5.
8. 42 C.F.R. § 8.610 (2018).
9. 21 U.S.C. § 823 (2018).
10. C. M. Jones, M. Campopiano, G. Baldwin, and E. McCance-Katz, "National and State Treatment Need and Capacity for Opioid Agonist Medication-Assisted Treatment," *American Journal of Public Health* 105, no. 8 (2015): 55-63.
11. R. A. Rosenblatt, C. H. Andrilla, M. Catlin, and E. H. Larson, "Geographic and Specialty Distribution of US Physicians Trained to Treat Opioid Use Disorder," *Annals of Family Medicine* 13, no. 1 (2015): 23-26.
12. *Id.*; S. C. Sigmon, "Access to Treatment for Opioid Dependence in Rural America: Challenges and Future Directions," *JAMA Psychiatry* 71, no. 4 (2014): 359-360.
13. A. S. Huhn and K. E. Dunn, "Why Aren't Physicians Prescribing More Buprenorphine?" *Journal of Substance Abuse Treatment* 78 (2017): 1-7.
14. *Id.*
15. L. Turner, S. P. Kruszewski, and G. C. Alexander, "Trends in the Use of Buprenorphine by Office-Based Physicians in the United States, 2003-2013," *American Journal on Addictions* 24, no. 1 (2015): 24-29.
16. A. W. Dick, R. L. Pacula, A. J. Gordon, M. Sorbero, R. M. Burns, D. Leslie, and B. D. Stein, "Growth in Buprenorphine Waivers for Physicians Increased Potential Access to Opioid Agonist Treatment, 2002-11," *Health Affairs* 34, no. 6 (2015): 1028-1034.
17. H. K. Knudsen, J. R. Havens, M. R. Lofwall, J. L. Studts, and S. L. Walsh, "Buprenorphine Physician Supply: Relationship with State-Level Prescription Opioid Mortality," *Drug and Alcohol Dependence* 173, Supplement 1 (2017): S55-S64.
18. B. D. Stein, R. L. Pacula, A. J. Gordon, R. M. Burns, D. L. Leslie, M. J. Sorbero, S. Bauhoff, T. W. Mandell, and A. W. Dick, "Where Is Buprenorphine Dispensed to Treat Opioid Use Disorders? The Role of Private Offices, Opioid Treatment Programs, and Substance Abuse Treatment Facilities in Urban and Rural Counties," *Milbank Quarterly* 93, no. 3 (2015): 561-583.
19. *Id.*
20. *Id.*
21. B. D. Stein, M. Sorbero, A. W. Dick, R. L. Pacula, R. M. Burns, and A. J. Gordon, "Physician Capacity to Treat Opioid Use Disorder with Buprenorphine-Assisted Treatment," *JAMA* 316, no. 11 (2016): 1211-1212; C. P. Thomas, E. Doyle, P. W. Kreiner, C. M. Jones, J. Dubenitz, A. Horan, and B. D. Stein, "Prescribing Patterns of Buprenorphine Waivered Physicians," *Drug and Alcohol Dependence* 181 (2017): 213-218.
22. S. Polydorou, E. W. Gunderson, and F. R. Levin, "Training Physicians to Treat Substance Use Disorders," *Current Psychiatry Reports* 10, no. 5 (2008): 399-404.
23. E. W. Gunderson, D. A. Fiellin, F. R. Levin, L. E. Sullivan, and H. D. Kleber, "Evaluation of a Combined Online and in Person Training in the Use of Buprenorphine," *Substance Abuse* 27, no. 3 (2006): 39-45; See also D. T. Barry, K. S. Irwin, E. S. Jones, W. C. Becker, J. M. Tetrault, L. E. Sullivan, H. Hansen, et al., "Integrating Buprenorphine Treatment into Office-Based Practice: A Qualitative Study," *Journal of General Internal Medicine* 24, no. 2 (2009): 218-225.
24. F. R. Levin, A. Bisaga, M. A. Sullivan, A. R. Williams, and K. Cates-Wessel, "A Review of a National Training Initiative to Increase Provider Use of MAT to Address the Opioid Epidemic," *American Journal on Addictions* 25, no. 8 (2016): 603-609; J. E. Egan, P. Casadonte, T. Gartenmann, J. Martin, E. F. McCance-Katz, J. Netherland, J. A. Renner, L. Weiss, A.J. Saxon, and D. A. Fiellin, "The Physician Clinical Support System-Buprenorphine (PCSS-B): A Novel Project to Expand/Improve Buprenorphine Treatment," *Journal of General Internal Medicine* 25, no. 9 (2010): 936-941.
25. T. V. Parran, J. Z. Muller, E. Chernyak, C. Adelman, C. M. Delos Reyes, D. Rowland, and M. Kolganov, "Access to and Payment for Office-Based Buprenorphine Treatment in Ohio," *Substance Abuse: Research and Treatment* 11 (2017): 1-6.
26. H. B. Hansen, C. E. Siegel, B. G. Case, D. N. Bertollo, D. DiRocco, and M. Galanter, "Variation in Use of Buprenorphine and Methadone Treatment by Racial, Ethnic and Income Characteristics of Residential Social Areas in New York City," *Journal of Behavioral Health Services & Research* 40, no. 3 (2013): 367-377.
27. H. Wen, J. M. Hockenberry, T. F. Borders, and B. G. Druss, "Impact of Medicaid Expansion on Medicaid-Covered Utilization of Buprenorphine for Opioid Use Disorder Treatment," *Medical Care* 55, no. 4 (2017): 336-341; J.C. Maclean and B. Saloner, "The Effect of Public Insurance Expansions on Sub-

The Journal of Law, Medicine & Ethics, 46 (2018): 272-278. © 2018 The Author(s)

https://doi.org/10.1177/1073110518782934 Published online by Cambridge University Press

stance Use Disorder Treatment: Evidence from the Affordable Care Act," *NBER Working Paper 23342* (Cambridge, MA: National Bureau of Economic Research, 2017).
28. H. K. Knudsen, "The Supply of Physicians Waivered to Prescribe Buprenorphine for Opioid Use Disorders in the United States: A State-Level Analysis," *Journal of Studies on Alcohol and Drugs* 76, no. 4 (2015): 644-654.
29. A. Kermack, M. Flannery, B. Tofighi, J. McNeely, and J. D. Lee, "Buprenorphine Prescribing Practice Trends and Attitudes among New York Providers," *Journal of Substance Abuse Treatment* 74 (2017): 1-6.
30. American Society of Addiction Medicine, *Advancing Access to Addiction Medications: Implications for Opioid Addiction Treatment* (2013).
31. R. M. Burns, R. L. Pacula, S. Bauhoff, A. J. Gordon, H. Hendrikson, D. L. Leslie, and B. D. Stein, "Policies Related to Opioid Agonist Therapy for Opioid Use Disorders: The Evolution of State Policies from 2004 to 2013," *Substance Abuse* 37, no. 1 (2016): 63-69.
32. Kaiser Family Foundation, *States Reporting Managed Care Pharmacy Uniform Preferred Drug List Requirements*, *available at* <https://www.kff.org/medicaid/state-indicator/states-reporting-managed-care-pharmacy-uniform-preferred-drug-list-pdl-requirements> (last visited Jan. 24, 2018).
33. See American Society of Addiction Medicine, *supra* note 30.
34. R. E. Clark, J. D. Baxter, B. A. Barton, G. Aweh, E. O'Connell, and W. H. Fisher, "The Impact of Prior Authorization on Buprenorphine Dose, Relapse Rates, and Cost for Massachusetts Medicaid Beneficiaries with Opioid Dependence," *Health Services Research* 49, no. 6 (2014): 1964-1979.
35. J. Harper, "Indiana Just Made Getting Addiction Treatment A Little Bit Easier," *WYFI Indianapolis*, November 17, 2017, *available at* <https://www.wfyi.org/news/articles/indiana-just-made-getting-addiction-treatment-a-little-bit-easier> (last visited Jan. 24, 2018).
36. S. Luthra, "Another Big Health Insurer Loosens Rules for Addiction Treatment," *NPR News*, February 15, 2017, *available at* <https://www.npr.org/sections/health-shots/2017/02/15/515239382/another-big-health-insurer-loosens-rules-for-covering-addiction-treatment> (last visited Jan. 24, 2018).
37. S. E. Wakeman, "Why It's Inappropriate Not to Treat Incarcerated Patients with Opioid Agonist Therapy," *AMA Journal of Ethics* 19, no. 9 (2017): 922-930.
38. *Id.*
39. R. D. Bruce and R. A. Schleifer, "Ethical and Human Rights Imperatives to Ensure Medication-Assisted Treatment for Opioid Dependence in Prisons and Pre-Trial Detention," *International Journal of Drug Policy* 19, no. 1 (2008): 17-23.
40. N. Krawczyk, C. E. Picher, K. A. Feder, and B. Saloner, "Only One in Twenty Justice-Referred Adults in Specialty Treatment for Opioid Use Receive Methadone or Buprenorphine," *Health Affairs (Millwood),* 36, no. 12 (2017): 2046-2053.
41. Center for Substance Abuse Treatment, Substance Abuse and Mental Health Services Administration, U.S. Department of Health and Human Services, *Clinical Guidelines for the Use of Buprenorphine in the Treatment of Opioid Addiction*, Treatment Improvement Protocol (TIP) Series, No. 40 (Rockville, MD: Substance Abuse and Mental Health Services Administration, 2004); K. Kampman and M. Jarvis, "American Society of Addiction Medicine (ASM) National Practice Guideline for the Use of Medications in the Treatment of Addiction Involving Opioid Use," *Journal of Addiction Medicine* 9, no. 5 (2015): 358-367.
42. "Goals & Objectives," PCSS MAT Training, *available at* <https://pcssmat.org/about/goals-objectives/#develop> (last visited February 6, 2018).
43. D. A. Fiellin, P. G. O'Connor, M. Chawarski, and R. S. Schottenfeld, "Processes of Care During a Randomized Trial of Office-Based Treatment of Opioid Dependence in Primary Care," *American Journal on Addictions* 13, Supplement 1 (2004): S67-S78.
44. W. F. Gellad, X. Zhao, C. T. Thorpe, et al., "Overlapping Buprenorphine, Opioid, and Benzodiazepine Prescriptions Among Veterans Dually Enrolled in VA and Medicare Part D," *Substance Abuse* 38, no. 1 (2017): 22-25; B. Mund and K. Stith, "Buprenorphine MAT as an Imperfect Fix," *Journal of Law, Medicine & Ethics* 46, no. 2 (2018): 279-291.
45. A. J. Gordon, W. H. Lo-Ciganic, G. Cochran, W. F. Gellad, T. Cathers, D. Kelley, and J. M. Donohue, "Patterns and Quality of Buprenorphine Opioid Agonist Treatment in a Large Medicaid Program," *Journal of Addiction Medicine* 9, no. 6 (2015): 470-477
46. A. Gordon, W. H. Lo-Ciganic, G. Cochran, W. F. Gellad, T. Cathers, and J. M. Donohue, "Treatment Quality for Buprenorphine Care: The Pot at the End of the Rainbow," *Journal of Addiction Medicine* 10, no. 3 (2016): 210-211.
47. R. C. Sherrick, "Measuring Quality of Buprenorphine Care," *Journal of Addiction Medicine* 10, no. 3 (2016): 209-210.
48. J. Butler, W. Becker, and K. Humphries, "Big Data and the Opioid Crisis: Balancing Patient Privacy with Public Health," *Journal of Law, Medicine & Ethics* 46, no. 2 (2018): 440-453.
49. Substance Abuse and Mental Health Services Administration, U.S. Department of Health and Human Services, "HHS Makes Effort to Increase Access to Treatment of Opioid Use Disorder," *Buprenorphine Prescriber News* (Winter 2017), *available at* <http://www.dsgonline.com/DataWaiver/enews/2017/2017_11_28/dw_enews_web.html> (last visited January 24, 2018).
50. C. Vestal, "Nurse Licensing Laws Block Treatment for Opioid Addiction," *The Pew Charitable Trusts, Stateline*, April 21, 2017, *available at* <http://www.pewtrusts.org/en/research-and-analysis/blogs/stateline/2017/04/21/nurse-licensing-laws-block-treatment-for-opioid-addiction> (last visited February 3, 2018).
51. Legal Action Center, *Legality of Denying Access to Medication Assisted Treatment in the Criminal Justice System*, December 1, 2011; National Association of Drug Court Professionals, *Adult Drug Court Best Practice Standards Volume I*, (2013); Substance Abuse and Mental Health Services Administration, U.S. Department of Health and Human Services, *Einstein Expert Panel: Medication-Assisted Treatment and the Criminal Justice System*, Report of Proceedings, September 10, 2013.
52. J. K. Eibl, G. Gauthier, D. Pellegrini, J. Daiter, M. Varenbut, J. C. Hogenbirk, and D. C. Marsh, "The Effectiveness of Telemedicine-Delivered Opioid Agonist Therapy in a Supervised Clinical Setting," *Drug and Alcohol Dependence* 176 (2017): 133-138.
53. J. Suzuki, J. Zinser, B. Klaiber, M. Hannon, H. Grassi, M. Spinosa, A. Ramirez, M. Issa, and S. P. Chin Feman, "Feasibility of Implementing Shared Medical Appointments (SMAs) for Office-Based Opioid Treatment with Buprenorphine: A Pilot Study," *Substance Abuse* 36, no. 2 (2015): 166-169.
54. A. D. Fox, A. Chamberlain, N. L. Sohler, T. Frost, and C. O. Cunningham, "Illicit Buprenorphine Use, Interest in and Access to Buprenorphine Treatment among Syringe Exchange Participants," *Journal of Substance Abuse Treat* 48, no. 1 (2015): 112-116; M. R. Lofwall, and S. L. Walsh, "A Review of Buprenorphine Diversion and Misuse: The Current Evidence Base and Experiences from around the World," *Journal of Addiction Medicine* 8, no. 5 (2014): 315-326.
55. Y. Olsen and J. M. Sharfstein, "Confronting the Stigma of Opioid Use Disorder — and Its Treatment," *JAMA* 311, no. 14 (2014): 1393-1394.

The Journal of Law, Medicine & Ethics, 46 (2018): 272-278. © 2018 The Author(s)

https://doi.org/10.1177/1073110518782934 Published online by Cambridge University Press