

Policy Pathways to Address Provider Workforce Barriers to Buprenorphine Treatment



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At least 2.3 million people in the U.S. have an opioid use disorder, less than 40% of whom receive evidence-based treatment. Buprenorphine used as part of medication-assisted treatment has high potential to address this gap because of its approval for use in non-specialty outpatient settings, effectiveness at promoting abstinence, and cost effectiveness. However, less than 4% of licensed physicians are approved to prescribe buprenorphine for opioid use disorder, and approximately 47% of counties lack a buprenorphine-waivered physician. Existing policies contribute to workforce barriers to buprenorphine provision and access. Providers are reticent to prescribe buprenorphine because of workforce barriers, such as (1) insufficient training and education on opioid use disorder treatment, (2) lack of institutional and clinician peer support, (3) poor care coordination, (4) provider stigma, (5) inadequate reimbursement from private and public insurers, and (6) regulatory hurdles to obtain the waiver needed to prescribe buprenorphine in non-addiction specialty treatment settings. Policy pathways to addressing these provider workforce barriers going forward include providing free and easy-to-access education for providers about opioid use disorders and medication-assisted treatment, eliminating buprenorphine waiver requirements for those licensed to prescribe controlled substances, enforcing insurance parity requirements, requiring coverage of evidence-based medication-assisted treatment as essential health benefits, and providing financial incentives for care coordination across healthcare professional types—including behavioral health counselors and other non-physicians in specialty and non-specialty settings.

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INTRODUCTION

Opioid misuse and overdose continue to escalate, contributing to the growing population with opioid use disorders (OUDs) in need of treatment. The opioid-related overdose death rate increased from 6.1 to 16.3 deaths per 100,000 people from 1999 to 2015, totaling 33,091 deaths in the U.S. in 2015.^{1,2} Rates of opioid-related substance use treatment admissions have followed a similar trajectory.³ Despite recent abatements in prescription opioid dispensing and use,⁴ prescribing contributes heavily to those who are misusing opioids.^{5–9} Moreover, overdoses and infectious diseases resulting from opioid injection drug use continue to climb, and are increasingly attributed to heroin and potent synthetic opioids, such as fentanyl.^{1,2,10}

Meeting the clinical criteria for an OUD—or a “problematic pattern of opioid use leading to clinically significant impairments or distress,”¹¹—increases a person’s risk of early death (typically from overdose, trauma, suicide, or infectious disease transmission) by a factor

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of 20.^{12–16} The prevalence of OUDs has increased significantly over time, from approximately 1.5 million in 2003 to more than 2.3 million in 2015.^{17,18} Despite the risks of untreated OUD, the gap between OUD prevalence and evidence-based medication-assisted treatment (MAT) capacity was close to 1 million in 2012.¹⁷

Buprenorphine, one of three medications used as part of MAT, has high potential to address the persistent OUD treatment gap. Buprenorphine is approved for use in non-specialty outpatient settings,¹⁹ has demonstrated effectiveness at promoting abstinence and reducing opioid-related overdoses,^{19–24} and is cost effective.²⁵ However, according to the Substance Abuse and Mental Health Services Administration (SAMHSA), less than 4% of licensed physicians were approved to prescribe buprenorphine in 2017. In 2016, overall 47% of counties—and 72% of rural counties—lacked a buprenorphine-waivered physician.²⁶ Although buprenorphine capacity has increased since 2002—when it was first approved for OUD treatment in office-based settings—the treatment gap has not significantly narrowed because of the increasing population with OUDs.¹⁷ Moreover, many buprenorphine-approved prescribers treat far fewer than the number of patients allowed by regulations.^{17,27,28} Estimates range, but suggest that only 20%–40% of people with OUDs are receiving MAT.^{17,29,30}

Despite some recent policy successes in expanding buprenorphine treatment insurance coverage, funding, and provider capacity, significant provider and policy barriers remain and must be addressed to capitalize on this promising treatment at a time of dire public health need. This article provides a brief history of MAT and the factors contributing to buprenorphine's promise. It then outlines persistent provider workforce barriers to buprenorphine provision in the U.S. and policy recommendations to address them.

BRIEF HISTORY OF MEDICATION-ASSISTED TREATMENT

By definition, MAT combines behavioral therapy and medications to treat OUDs.³¹ The Food and Drug Administration (FDA) has approved three medications for the indication of opioid dependence: methadone, buprenorphine, and naltrexone. Methadone and buprenorphine are full and partial opioid agonists, respectively, which bind to the μ -opioid receptor. These long-term opioid maintenance therapies reduce painful symptoms associated with opioid withdrawal and block the euphoric effects of other drugs.^{21,32} Because buprenorphine is only a partial agonist, it has a ceiling effect; in other words, its euphoric effects plateau rather than

increase with heightened dosing.^{21,32} Methadone and buprenorphine are Schedule II and III drugs on the Drug Enforcement Agency's Controlled Substances Schedules, meaning they have high or some potential for abuse, respectively, which may lead to physical or psychological dependence.³³ Naltrexone is not a controlled substance and works as an opioid antagonist—meaning it blocks the μ -opioid receptor and negates the effects of opioids.^{21,32}

Methadone was the first MAT medication available. A synthetic opioid developed in Germany in 1937, methadone was initially used as an analgesic.³⁴ The FDA approved methadone for addiction treatment in 1972. Its provision in opioid treatment programs (OTPs) is federally regulated, for example, requiring some patient counseling and national accreditation, and subject to additional state oversight.^{34,35} Methadone is a long-acting opioid taken once daily under OTP supervision, in part because of concerns over diversion, although certain stabilized patients may take the medication off-site. The supply of OTPs has remained relatively constant over time, with around 1,500 facilities accredited in 2017.^{17,36} Methadone has a strong evidence base establishing its effectiveness at increasing treatment retention and reducing opioid use, mortality, and risky behaviors that increase HIV and hepatitis transmission.^{19,21,23,24,37–43} Barriers to methadone treatment provision and access are numerous, however, and include a shortage of providers; waitlists for treatment; stigma and patient costs of treatment (daily time, transportation); drug–drug interaction risks; and stringent regulatory requirements.^{17,21,31,34,44–46}

Naltrexone is a newer drug to the market for OUD treatment. The FDA initially approved a once-daily naltrexone tablet in 1984. In 2010, the FDA approved an injectable product, Vivitrol, to be administered once monthly for OUD treatment, which now dominates the naltrexone market.³⁴ Any licensed prescriber can provide this noncontrolled substance. Insurance increasingly covers the costs for naltrexone.³⁴ In addition, the drug avoids the addiction, diversion, and drug interaction concerns presented by opioid agonist therapies.³¹ It holds appeal for some policymakers and providers who espouse abstinence-only approaches to OUD recovery, based on longstanding philosophical beliefs about addiction with little empirical support.⁴⁷ Robust evidence establishing naltrexone's effects on increasing treatment retention and reducing overdose risk is developing, although its effectiveness over the longer term and among patients whose OUD symptoms are not stable has yet to be established.^{21,48–51} Patients must be abstinent for approximately 7 days, without acute withdrawal symptoms, to commence naltrexone treatment, presenting a significant patient barrier for many; moreover, it can complicate

opioid pain treatment because it blocks the μ -opioid receptor.²¹

Behavioral health therapy that accompanies MAT can include counseling, family therapy, and peer support programs, among other forms.⁵² Although behavioral health therapy when used to treat OUDs alone or in combination with MAT medications has not been shown in rigorous trials to reduce opioid use or increase adherence to treatment,^{20,53,54} these services are recommended to accompany MAT medication and considered best practices.^{31,52,55,56}

BUPRENORPHINE'S PROMISE

The third MAT medication, buprenorphine, was first available only in tablet form; now it is also delivered by once-daily sublingual films, injection, and implantable devices. Both tablets and films are available as buprenorphine-alone products and buprenorphine-naloxone combination products.³⁴ Buprenorphine-naloxone deters abuse because naloxone attenuates buprenorphine's partial agonist effects, thereby making the product less desirable to misuse for a euphoric high. In 2016, the FDA approved Probuphine, an implantable buprenorphine device, which lasts for 6 months.⁵⁷ Probuphine is recommended for patients who have established a stable oral dose of less than 8 mg daily of buprenorphine for maintenance therapy.⁵⁸ In late 2017, the FDA approved a monthly buprenorphine injectable, Sublocade, indicated for patients who have been on a stable dose of buprenorphine treatment for at least 7 days, and other injectable forms are in the pipeline.⁵⁹

Buprenorphine has demonstrated effectiveness in increasing treatment retention, reducing opioid use, reducing mortality, and reducing the transmission of HIV and hepatitis C.^{20,22-24,37,38,40,41,53,60-63} Buprenorphine in medium to high doses is as effective as methadone at increasing treatment retention and reducing illicit opioid use.^{21,23} Buprenorphine-naloxone also has been shown to be cost effective in long-term, office-based settings compared with no treatment, with a cost-effectiveness ratio of \$35,100 per quality-adjusted life year.²⁵ Although the medication cost of buprenorphine is higher than that for methadone, when administrative costs of running stand-alone OTPs and transportation costs for patients receiving methadone are factored in, buprenorphine's cost may actually be lower.⁶² As outpatient access to buprenorphine has expanded, concerns about associated increases in diversion and overdose deaths (particularly among children) have been raised.⁶³⁻⁶⁵ However, much of the diversion and death evidence comes from other countries, and the magnitude of adverse outcomes is small in comparison to that of other prescribed

opioids.^{63,66,67} Moreover, those misusing buprenorphine often do so to reduce withdrawal symptoms rather than experience euphoria.^{66,68,69}

Office-based prescribers, including primary care physicians, can prescribe buprenorphine. Buprenorphine was the first drug to be prescribed under the Drug Addiction Treatment Act of 2000 (DATA 2000), intended to make MAT available to more diverse geographic populations and from general practitioners.^{17,70} Under DATA 2000, qualified physicians may apply for a SAMHSA waiver from the Controlled Substances Act requirement that opioid dependency treatment with scheduled drugs be conducted within an OTP.⁷⁰ To be waiver eligible, DATA 2000 requires that physicians have a demonstrated or certified ability to treat and manage opiate-dependent patients, for example, by completing at least 8 hours of training; and be in a practice with the capacity to refer patients for counseling and other ancillary services.⁷⁰

Initially, physicians could prescribe approved MATs under DATA 2000 for up to 30 patients.⁷⁰ As of 2007, physicians could apply to increase that panel after the first year to 100 patients.⁷¹ As of August 2016, physicians could apply to increase their patient panels to 275 after a year, provided they either (1) have additional credentialing in addiction medicine or addiction psychiatry from a specialty medical board or professional society, or (2) work in a qualified practice setting that provides comprehensive MAT.⁷² A further rule was implemented as a part of the Comprehensive Addiction and Recovery Act of 2016, allowing nurse practitioners and physician assistants to prescribe buprenorphine until October 1, 2021, for up to 30 patients if they complete 24 hours of addiction treatment training.⁷³ Policymaker goals in passing these latest laws were to expand buprenorphine access, increase OUD treatment quality, and limit diversion potential.^{17,72,73}

In summary, buprenorphine offers a number of relative advantages over other MAT medications in treating OUDs. This is especially true for patients who are able to self-manage their medications between medical visits, as opposed to benefiting from daily visits in an OTP program. Buprenorphine potentially benefits from lower overdose risk and fewer drug interaction concerns than methadone, given its partial agonist status and abuse-deterrent formulations. Buprenorphine also has greater demonstrated effectiveness than naltrexone at increasing treatment retention and reducing overdoses and illicit opioid use, although the evidence base for naltrexone is growing. Importantly, buprenorphine is more accessible than methadone to the general population, including in rural areas, because qualified providers, including primary care physicians, can prescribe it in

office-based settings. Because buprenorphine can be delivered in non-specialty settings also providing other types of care, it can be less stigmatizing for patients, better integrated with other medical care, maintained under a long-term primary care–patient relationship, and available to special populations—including those involved in criminal justice and pregnant women (in the buprenorphine-only form). In short, buprenorphine carries the promise of abuse-deterrence, effectiveness, and widespread availability in OUD treatment.

PERSISTENT WORKFORCE BARRIERS TO BUPRENORPHINE TREATMENT PROVISION

Despite buprenorphine's tremendous potential in effectively bridging the OUD treatment gap and mitigating the opioid epidemic, persistent and substantial barriers—many of which revolve around the workforce—have thwarted full realization of this promise. Many more providers are eligible to obtain waivers to prescribe buprenorphine, but even among those with waivers, there is capacity for increased buprenorphine prescribing.^{17,74–76} Categories of workforce barriers contributing to buprenorphine underutilization include (1) insufficient training, education, and experience; (2) lack of institutional and clinician peer support; (3) poor care coordination; (4) provider stigma; (5) inadequate or burdensome reimbursement; and (6) burdensome regulatory procedures. This article summarizes studies that have evaluated physician barriers to buprenorphine prescribing using surveys and qualitative interviews below along these six categories.

Insufficient Training, Education, and Experience

A prominent barrier cited by a majority of physicians surveyed in primary care and addiction specialties alike in the years since buprenorphine approval revolve around a lack of knowledge, training, education, and experience in buprenorphine prescribing.^{77–86} Among buprenorphine-waivered physicians in New York City, training in addiction medicine and the waiver certification process were both viewed as deficient in providing knowledge and confidence in buprenorphine prescribing.⁸³ This suggests that the waiver process is not enough to provide the necessary training, and that such education needs to start much earlier and be reinforced often during ongoing training.

Lack of Institutional and Clinician Peer Support

A related common barrier to lack of training is the lack of institutional and clinician peer support in buprenorphine prescribing.^{74,80,82,83,87} Without an adequately trained workforce for OUD treatment at all levels, clinician peer

support in the form of sharing expertise and mentoring is less likely. Physician willingness to prescribe buprenorphine is improved when there are other buprenorphine prescribers within their practices.⁸⁷ Moreover, an institutional champion/role-model approach to buprenorphine care has been demonstrated to facilitate buprenorphine prescribing.⁸² Given that physicians commonly view the population of patients with OUD as challenging and complex to treat,^{80,81,83,88} a lack of within-practice support to treat these patients serves as a barrier to waived and non-waivered physicians in actually engaging in buprenorphine prescribing.

Poor Care Coordination

Another key dimension of buprenorphine prescribing support involves the ability to refer patients for additional behavioral health therapies, particularly counseling, as needed. Indeed, physicians must assert that they have this ability when applying for a buprenorphine waiver.⁷⁰ Both physicians who do and do not prescribe buprenorphine frequently cite the lack of a consultant to manage complex patients and the lack of ability to refer patients for mental health and substance abuse counseling as barriers to buprenorphine prescribing.^{78,81–85,87,88} For some physicians, a lack of time contributes to their unwillingness to prescribe buprenorphine, which could be alleviated with the help of non-physician providers, such as nurse case managers, to help coordinate care and provide more frequent follow-up.^{79–82}

Provider Stigma

Provider stigma towards the patient population with OUDs also contributes to underprovision of buprenorphine. Many physicians explicitly cite this as a barrier,^{78,80,82,83,85,89} although stigma is likely underquantified in surveys because of underreporting and difficulty framing this concept.⁹⁰ Negative perceptions of patients with OUDs exist, even today, among providers,^{46,86,90,91} who may believe that this patient population is difficult, deceitful, untrustworthy, noncompliant with therapy, and likely to divert buprenorphine.

Inadequate or Burdensome Reimbursement

Reimbursement concerns are another frequently mentioned barrier to buprenorphine prescribing, particularly among physicians actually engaged in such prescribing.^{81,84,88,92,93} Some of these concerns are specific to Medicaid, the largest third-party source of coverage for OUD treatment.⁸⁸ Although Medicaid coverage of buprenorphine treatment has increased in recent years, so have qualifications around that coverage (e.g., prior authorization and lifetime limit requirements), which continue to act as barriers for providers in obtaining

reimbursement.^{91,94–97} Potentially contributing to sub-optimal care, physicians may experience pressure to limit their patient visits to reimbursable time frames and services.^{82,84}

Burdensome Regulatory Procedures

Finally, some physicians cite burdensome regulatory requirements as a barrier to their prescribing.^{80,83,89} These regulatory burdens include the process of obtaining a waiver, record-keeping requirements, the 30-patient panel limit (before that limit was expanded), and a general perception that regulatory agencies impede rather than facilitate prescribing.^{80,83,89}

POLICY PATHWAYS TO INCREASE BUPRENORPHINE TREATMENT PROVISION

In recent years, several policy facilitators have sought to address certain barriers to robust buprenorphine provision. Leaders from the federal executive and legislative branches—in particular from SAMHSA, National Institute on Drug Abuse, and HHS—have pursued strategies to encourage the provision of quality OUD treatment, including with buprenorphine.^{59,98} As an increasing number of patients with OUDs have behavioral health insurance coverage, more patients may be accessing care, including in physician offices.^{30,99–102} However, robust evidence does not yet establish clearly improved behavioral health outcomes attributable to these policy changes, perhaps because further follow-up time is needed.⁹⁹ Also, the treatment gap remains because of the growing population of patients with OUDs and persistently low number of providers.

Recently implemented policies designed to augment buprenorphine prescribing among the workforce fall into three categories: increased MAT coverage and funding for innovative care models, expanded provider capacity to prescribe buprenorphine, and innovation to develop effective MATs. Although these policies address many provider workforce barriers to buprenorphine prescribing, dire public health need warrants further work to capitalize on buprenorphine's promise.

Medication-Assisted Treatment Coverage and Funding

Several federal and state policies have enhanced buprenorphine treatment coverage in the past decade and address provider concerns around reimbursement, care coordination, and institutional/clinician peer support. The first was the Mental Health Parity and Addiction Equity Act of 2008 (MHPAEA), which required that mental health and substance use disorder care be covered on par with medical/surgical care.^{103–105} The Affordable

Care Act (ACA) then extended parity benefit protections to at least 62 million additional people covered by individual/small group and Medicaid plans.^{100,101}

Also under the ACA, plans are required to cover ten essential health benefits (EHBs), including (1) mental health and substance use disorder services and (2) a prescription drug benefit. People covered by the Medicaid expansions in 32 states (including the District of Columbia), including more than 2 million with substance use disorders, also must be offered EHBs. Coverage details in the EHB categories vary from state to state, where a state's benchmark plan sets the baseline. But plans are required to cover at least one drug in every category and class of the U.S. Pharmacopeia, which has helped to facilitate buprenorphine coverage now required in all states for the purposes of Medicaid, under Medicare,^{34,96,106} and among the vast majority of private insurers. These EHB and parity policies have greatly improved the proportion of Americans with OUDs who enjoy insurance coverage of some generosity, particularly under the largest third-party payer for behavioral health and OUD treatment, Medicaid (Table 1).

The ACA has taken further steps to help integrate care—for example, in implementing accountable care organizations that incentivize a patient's primary provider to coordinate care and deliver better health outcomes. Repeal of any of these ACA components would have dire consequences for OUD patients and their providers' ability to obtain reimbursement to treat them (Table 2). In addition, ACA repeal or retrenchment would worsen care continuity critical for patients with chronic OUDs and often many comorbidities (Table 2). But the ACA and insurance policy could go further to generously reimburse for and incentivize behavioral health therapy and case management services for buprenorphine care.

Moreover, MHPAEA has suffered from noncompliance complaints. In violation of MHPAEA, insurance plans are allegedly requiring inequitable medical necessity determinations; utilization review (e.g., prior authorization); provider networks; and fail first therapies, including with respect to substance use disorder treatment.¹¹⁴ The federal government has recognized the need to monitor MHPAEA compliance carefully, and set aside money and a plan to that end in the 21st Century Cures Act.¹¹⁵ If MHPAEA is rigorously enforced and plans are required to be transparent about their practices, then the idea of equitable coverage for MAT may be realized (Table 2).

Similar concerns about increases in the use of managed care techniques to limit care and reduce diversion have been raised in the context of Medicaid coverage of buprenorphine.^{91,94–96} One study found that instead of

Table 1. Key Coverage Expansions and Funding Affecting Buprenorphine Treatment, 2008–2017

Policy	Date	Populations targeted	Key provisions
Mental Health Parity and Addiction Equity Act of 2008	Plan years starting July 1, 2010	<ul style="list-style-type: none"> Private group health plans (50+ employees) Expanded to Medicaid (2014) Expanded to individual/small group plans offered on ACA insurance exchanges (2014) 	<p>Parity between physical and behavioral health benefit coverage (including MAT) along 3 dimensions:</p> <ul style="list-style-type: none"> Financial limitations (e.g., copays, deductibles), Quantitative treatment limitations (e.g., treatment caps), and Nonquantitative treatment limitations (e.g., prior authorization, fail-first therapies).
ACA: Essential Health Benefits	January 1, 2014	<ul style="list-style-type: none"> Medicaid plans Medicare plans Individual/small group plans offered on the ACA insurance exchanges 	<p>Plans must cover 10 essential health benefits, including: (i) mental health and substance use disorder services, and (ii) prescription drug benefit.</p> <ul style="list-style-type: none"> Coverage specifics vary by state, where benchmark plans set a floor. ACA limits cost-sharing and prohibits annual/lifetime limits on EHB coverage. Plans must cover at least one drug in every category and class of U.S. Pharmacopeia, so buprenorphine is often covered.
ACA: Medicaid Expansions	January 1, 2014	<ul style="list-style-type: none"> Medicaid expansion covered populations 	<p>Two million Americans with substance use disorders gained coverage in 31 states that expanded Medicaid to adults up to 138% of the federal poverty level.</p> <ul style="list-style-type: none"> All 50 state Medicaid programs provide coverage for buprenorphine. Section 1115 demonstrations allow states to receive federal funds to transform and innovate in their substance use disorder delivery systems.
Comprehensive Addiction and Recovery Act	2017–2021	<ul style="list-style-type: none"> Funding to states (appropriated each year) 	<ul style="list-style-type: none"> Authorizes \$181M in funding for programs designed to reduce the impact of OUDs, including \$25M/year for MAT expansion in high-OUD areas. SAMHSA made \$28M in grants available to communities and healthcare providers to treat people with OUDs with MAT.
21st Century Cures Act	2017–2022	<ul style="list-style-type: none"> Funding to states 	<p>\$1B provided to states in 2017–2018 to combat the opioid crisis. Disbursed State Targeted Response to the Opioid Crisis Grants, which</p> <ul style="list-style-type: none"> require states to perform needs assessments and develop strategic plans for increasing MAT provision under a chronic care model, periodically review performance data reported to SAMHSA, and develop quality MAT programs. <p>Requires three federal agencies to release compliance guidance on MHPAEA requirements and enhance/improve MHPAEA compliance enforcement efforts.</p>

ACA, Affordable Care Act; B, billion; EHB, Essential Health Benefits; M, million; MAT, medication-assisted treatment; MHPAEA, Mental Health Parity and Addiction Equity Act; OUD, opioid use disorder; SAMHSA, Substance Abuse and Mental Health Services Agency.

broad managed care barriers, a more targeted prior authorization policy in Massachusetts only related to high-dose buprenorphine prescribing was effective at reducing the use of higher than recommended doses, without increasing the risk of relapses over the long term.⁹⁵ Such targeted techniques consistent with best

public health and clinical practices should be pursued over blanket limitations on care—such as lifetime or annual limits, which can be inconsistent with OUD maintenance therapy (Table 2).⁵⁵ Explicit federal requirements that States cover buprenorphine and behavioral health therapy as EHBs, absent stringent

Table 2. Policy Recommendations to Address Barriers to Buprenorphine Prescribing

Provider barriers	Policy recommendation	Examples of implementation
1. Insufficient training, education, and experience		
	Incorporate MAT training into general medical education to increase knowledge and confidence around buprenorphine provision	<ul style="list-style-type: none"> • Select cases of medical school education (e.g., Brown Alpert School of Medicine)¹⁰⁷ • Project ECHO,¹⁰⁸ which augments education in places where there may not be addiction providers to do the training/education
	Incorporate MAT training into continuing medical education requirements and mentoring services to increase knowledge and confidence around buprenorphine provision	<ul style="list-style-type: none"> • Online mentorship services through Providers' Clinical Support System (PCSS) MAT¹⁰⁹
	Audit feedback and reviews of physician buprenorphine prescribing at the provider/insurer levels to increase safety and knowledge	
	Incentivize medical and other clinician students to enter addiction specialties or engage in buprenorphine prescribing, particularly in rural areas	<ul style="list-style-type: none"> • Proposed to be included in National Health Service Corps, which provides loan forgiveness and debt repayment for people who work in underserved communities for at least 2 years at eligible facilities¹¹⁰
2. Lack of institutional and clinician-peer support		
	Incorporate MAT training into general medical education to increase mentorship and shared expertise opportunities around buprenorphine provision	<ul style="list-style-type: none"> • Select cases of medical school education¹⁰⁷ • Project ECHO¹⁰⁸
	Incorporate MAT training into continuing medical education requirements and opportunities to increase mentorship and shared expertise opportunities around buprenorphine provision	<ul style="list-style-type: none"> • Online mentorship services through PCSS MAT¹⁰⁹
	Encourage loan forgiveness for qualified providers who engage in OUD treatment, particularly in rural areas given need ^{26,62}	<ul style="list-style-type: none"> • Proposed to be included in National Health Service Corps, which provides loan forgiveness and debt repayment for people who work in underserved communities for at least 2 years at eligible facilities¹¹⁰
	Reimbursement for/fund office space, champion/role-model, and education on buprenorphine prescribing	<ul style="list-style-type: none"> • Veteran's Administration champion-role model⁸² • Maryland model³⁷
	Incentivize improved health outcomes in reimbursement models, to encourage institutional buy-in around buprenorphine prescribing, including at the primary care level and behavioral care levels	<ul style="list-style-type: none"> • ACA accountable care organization model
3. Poor care coordination		
	Vigorously enforce MHPAEA parity requirements to ensure equitable coverage and reimbursement for MAT provision, including for buprenorphine and behavioral health therapies	<ul style="list-style-type: none"> • Funds available from 21st Century Cures Act
	Continue elements of ACA promoting integrated care models such as accountable care organizations at the primary care level	
	Provide financial incentives for care coordination across provider types (including physician and non-physician providers), and settings (including addiction specialty and non-addiction specialty)	<ul style="list-style-type: none"> • Funds available from 21st Century Cures Act and ACA
	Promote collaborative care agreements between physicians and pharmacists and use of drug therapy management models that can lead to safer prescribing with multi-disciplinary care and checks/balances	<ul style="list-style-type: none"> • Maryland collaborative model¹¹¹
<i>(continued on next page)</i>		

Table 2. Policy Recommendations to Address Barriers to Buprenorphine Prescribing (*continued*)

Provider barriers	Policy recommendation	Examples of implementation
4. Provider stigma		
	Incorporate MAT training into general medical education to reduce stigma around buprenorphine provision	<ul style="list-style-type: none"> • Select cases of medical school education¹⁰⁷ • Project ECHO¹⁰⁸
	Incorporate MAT training into continuing medical education requirements and opportunities to increase mentorship and shared expertise opportunities around buprenorphine provision	<ul style="list-style-type: none"> • Online mentorship services through PCSS MAT¹⁰⁹
	Implement prior authorization for high buprenorphine doses only, to limit patient diversion	<ul style="list-style-type: none"> • Massachusetts model⁹⁵
	Funding for/innovation for safer MAT formulations, vaccines that require less frequent visits and may be taken more safely by patients. Also these products reduce misuse and diversion that contributes to provider stigma	<ul style="list-style-type: none"> • NIDA partnerships with private sector¹¹²
5. Inadequate or burdensome reimbursement		
	Vigorously enforce MHPAEA parity requirements to ensure equitable coverage and reimbursement for MAT provision, including buprenorphine and behavioral health therapies	<ul style="list-style-type: none"> • Funds available from 21st Century Cures Act and enforcement task force
	Maintain ACA coverage expansions to Medicaid populations, individual/small group plan members, which include EHB and MHPAEA requirements	
	Explicitly require that states cover buprenorphine and behavioral therapy, without stringent managed care policies (e.g., blanket prior authorization, annual/lifetime limits, fail first policies) as EHBs	
	Adopt pay-for-performance reimbursement models from other disease states to fund non-physician providers or physician providers	
	Reduce cost of buprenorphine to improve reimbursement and insurance coverage, particularly of implantable and newer tamper-resistant forms that come to market	<ul style="list-style-type: none"> • Drug Competition Action Plan under development by FDA to improve competition by bringing generics to market¹¹³
6. Burdensome regulatory procedures		
	Eliminate buprenorphine waiver requirement	
	Lift 30 patient limit for nurse practitioners and physician assistants once safety of their prescribing is established via quality metrics	
	Increase training requirements for all opioid prescribing (not just MAT)	

ACA, Affordable Care Act; ECHO, Extension for Community Healthcare Outcomes; FDA, U.S. Food and Drug Administration; MAT, medication-assisted treatment; MHPAEA, Mental Health Parity and Addiction Equity Act; EHB, Essential Health Benefits; NIDA, National Institute on Drug Abuse; OUD, opioid use disorders.

managed care limitations, also could ensure that third-party coverage for buprenorphine treatment is robust (Table 2).

At the same time as insurance coverage generosity has expanded, the Comprehensive Addiction and Recovery Act and 21st Century Cures Act fund increased OUD treatment desperately needed in certain states.^{73,115} Many of these funding mechanisms address provider barriers to buprenorphine prescribing, such as reimbursement and care coordination, including within primary care-based settings (Tables 1 and 2). However, robust additional funding for MAT is desperately needed.^{26,116}

Provider Capacity

As discussed, a recent SAMHSA rule increased buprenorphine-waivered physician patient panels from 100 to 275 patients. Although this increase was well intentioned, it is unlikely to greatly affect most buprenorphine prescribers, who prescribe to a median monthly panel of 13 patients.⁷⁵ Even in Vermont—a leader in buprenorphine treatment—physicians prescribed to an average of almost 15 patients over a 3-month period in 2014.²⁸

Eliminating the waiver process for physicians altogether, when complemented by policies to increase

provider education during graduate school and in continuing medical education, would be more impactful than expanding the patient panel limits. Although the training received during the 8-hour course is helpful to prescribing clinicians, the hurdles of identifying, taking, and paying for the course on top of a busy clinical practice are likely to discourage participation.^{80,83,89} Moreover, the asymmetry between physicians' ability to prescribe any other prescription opioid for pain, including methadone, without any special education stands in stark contrast to this heightened buprenorphine prescribing requirement—particularly when non-MAT prescription opioids are much more commonly misused, diverted, and responsible for overdoses.

Buprenorphine prescriber training would be more effective if mandated as a part of graduate school education, similar to training commonly incorporated for other medications with complicated dosing (e.g., warfarin), and offered as a part of continuing medical education (Table 2). Some innovative medical schools¹⁰⁷ and states, like Massachusetts, are undertaking steps to incorporate MAT training into medical education, but national graduate school accreditation requirements would have more widespread impact. Although the American Medical Association recently voted not to support the elimination of the buprenorphine waiver requirement, it can consider incorporating buprenorphine prescribing training into its newly required additional opioid training requirements and continuing medical education requirements to generate a more educated, knowledgeable workforce.

The Comprehensive Addiction and Recovery Act very recently allowed nurse practitioners and physician assistants to prescribe buprenorphine to up to 30 patients. This represented an important step toward increasing the number of trained professionals with prescribing knowledge and expertise, and consequently increasing the likelihood that multiple prescribers are available in the same clinic to provide support to one another. To further increase prescriber capacity, allied health professionals could be exempted from the waiver process as well, so long as they have demonstrated safe prescribing along established metrics and are trained in their initial or continuing education, similar to physicians.⁷³ This step could increase provider capacity in rural and underserved areas, where physicians with waivers and addiction specialists are more scarce.⁷⁶

Treatment Innovation

The National Institute on Drug Abuse and the FDA are working together and with private entities to spur

innovation of safer opioid formulations, including for MATs, and even vaccines for opioids, heroin, and fentanyl.^{112,117} These represent promising steps toward reducing diversion and provider stigma related thereto. The FDA also is developing a measure that would reduce the time for generic drugs to come to market, in the interest of spurring competition and safer, less expensive products to market.¹¹³ If passed, this measure could also contribute to lower diversion, misuse, and costs of buprenorphine. In the nearer term, congressional inquiries into drug costs and FDA approval of brand-name buprenorphine competitors could spur lower prices for tamper-resistant products like the buprenorphine implants and injectable forms, which may not be covered by insurance because of their prices (Table 2).⁵⁷

Other policies in addition to the above recommendations and steps already taken would further address provider barriers to buprenorphine prescribing. Beyond continuing education about MAT prescribing, providers could benefit from institutional reviews of, feedback about, and education around their own prescribing practices, to bolster institutional support and provider knowledge. Loan forgiveness for those medical students who go on to practice as addiction specialists or regular buprenorphine prescribers in rural or heavily opioid-impacted areas for at least 2 years, as has been proposed recently in Congress,¹¹⁰ would further incentivize trainees to enter the workforce and provide desperately needed services.

CONCLUSIONS

There is an urgent need to address the OUD treatment gap in the U.S., and increasing provision of buprenorphine has tremendous potential to ensure effective treatment is available. Although the current policy environment has opened the door to this potential, by facilitating buprenorphine prescribing outside of traditional treatment settings and covering some treatment, further policy changes could address persistent professional workforce barriers to expanding buprenorphine treatment. Key changes include increasing buprenorphine prescriber education, from graduate education throughout practice; eliminating the waiver process for qualified prescribers; providing loan repayment for physicians and other allied health professionals who regularly prescribe buprenorphine; reimbursing for buprenorphine treatment and behavioral health therapies without blanket managed care limitations; and encouraging care coordination and clinician peer support through incentives and reimbursement models.

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