

## Primary Care and the Opioid-Overdose Crisis — Buprenorphine Myths and Realities

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**D**espite widespread awareness of the opioid-overdose crisis, the epidemic continues to worsen. In 2016, there were 42,249 opioid-overdose deaths in the United States, a 28% increase

from the previous year. According to the National Center for Health Statistics, life expectancy in the United States dropped in 2016 for the second consecutive year, partly because of an increase in deaths from unintentional injuries, including overdoses. It was the first 2-year decline since the 1960s. How can we be making so little progress?

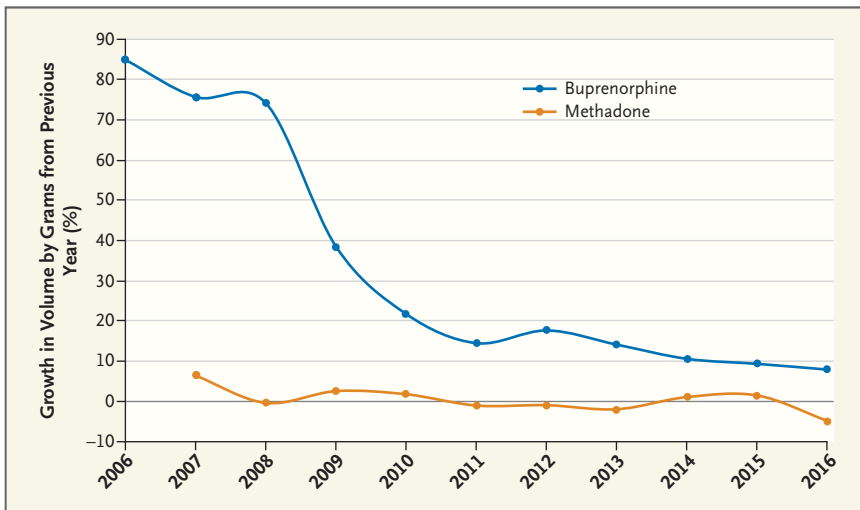
In part, the overdose crisis is an epidemic of poor access to care. One of the tragic ironies is that with well-established medical treatment, opioid use disorder can have an excellent prognosis. Decades of research have demonstrated the efficacy of medications such as methadone and buprenorphine in improving remission rates and reducing both medical complications

and the likelihood of overdose death.<sup>1</sup> Unfortunately, treatment capacity is lacking: nearly 80% of Americans with opioid use disorder don't receive treatment.<sup>2</sup> Although access to office-based addiction treatment has increased since federal approval of buprenorphine, data from the Drug Enforcement Administration (DEA) reveal that annual growth in buprenorphine distribution has been slowing, rather than accelerating to meet demand (see graph). To have any hope of stemming the overdose tide, we have to make it easier to obtain buprenorphine than to get heroin and fentanyl.

We believe there's a realistic, scalable solution for reaching the millions of Americans with opioid use disorder: mobilizing the pri-

mary care physician (PCP) workforce to offer office-based addiction treatment with buprenorphine, as other countries have done. As of 2017, according to the Kaiser Family Foundation, there were more than 320,000 PCPs, plus a broad workforce of nurse practitioners and physician assistants, treating U.S. adults. In contrast, there are just over 3000 diplomates of the American Board of Addiction Medicine, and only 16% of 52,000 active psychiatrists had a waiver to prescribe buprenorphine in 2015 (moreover, 60% of U.S. counties have no psychiatrists).<sup>3</sup> Training enough addiction medicine or psychiatric specialists would take years, and most methadone treatment programs are already operating at 80% of capacity or greater.<sup>4</sup>

However, PCPs and other generalists, including pediatricians, obstetrician-gynecologists, and physicians who treat human immunodeficiency virus (HIV) infection, are well situated to provide



**Annual Change in Buprenorphine and Methadone Volume Dispensed in the United States, 2006–2016.**

Each point represents the percentage change in absolute volume of buprenorphine or methadone dispensed from all sources in the United States (including retail pharmacies, hospitals, and outpatient methadone treatment facilities) as compared with the prior year, measured in grams dispensed. The earliest year with data available for buprenorphine was 2005, so 2006 is the first year we could estimate growth. Because of data irregularities for methadone in 2005, we began tracking methadone growth starting with 2006–2007. Data are from the Automation of Reports and Consolidated Orders System (ARCOS) of the Drug Enforcement Administration.

buprenorphine treatment. Many have risen to this challenge: PCPs are responsible for most ambulatory care visits for buprenorphine treatment. The importance of mobilizing the PCP workforce while ensuring the availability of sufficient specialists is not unique to the opioid-overdose crisis. During the height of the HIV/AIDS epidemic, for example, access to antiretroviral therapy was urgently needed. Although initially specialists were more likely to prescribe antiretrovirals, by 1990 equal percentages of patients were receiving antiretroviral therapy from PCPs and from specialists.

How can we promote adoption of buprenorphine treatment by PCPs? The relevant federal and state regulatory barriers could be addressed, but they reflect a deeper problem: stigma and myths about buprenorphine treatment inhibit its acceptance (see table).

The first myth is that buprenorphine is more dangerous than oth-

er interventions physicians master during training. In fact, PCPs regularly prescribe more complicated and risky treatments. Titrating insulin, starting anticoagulants, and prescribing full-agonist opioids for pain are often more challenging and potentially harmful than prescribing buprenorphine. Yet this perception has been cemented by federal policy. The Drug Addiction Treatment Act of 2000 requires that physicians complete 8 hours of training (sacrificing a full day of work) and apply for a DEA waiver to begin prescribing buprenorphine. After passing these hurdles, physicians are authorized to treat only a limited number of patients. These requirements make buprenorphine treatment intimidating.

The first step toward debunking this myth would be to scale back these federal regulations. Training in appropriate buprenorphine treatment optimizes outcomes and minimizes risks, but

such training could be incorporated into existing medical education. All physicians could be trained during medical school and residency, so that both PCPs and other specialists would be equipped to offer this treatment — and, more generally, would be comfortable in caring for patients with opioid use disorder.

The second myth is that buprenorphine is simply a “replacement” and that patients become “addicted” to it — a belief still held by some physicians. But addiction is defined not by physiological dependence but by compulsive use of a drug despite harm. If relying on a daily medication to maintain health were addiction, then most patients with chronic health conditions such as diabetes or asthma would be considered addicted.

A closely related myth is that abstinence-based treatment, usually implying short-term detoxification and rehabilitation, is more effective than medication for addiction treatment. This belief underpins widespread advocacy for more substance use treatment “beds” as a key solution for the overdose crisis. But whereas there’s a strong evidence base for buprenorphine and methadone treatment, no study has shown that detoxification or 30-day rehabilitation programs are effective at treating opioid use disorder.<sup>5</sup> In fact, these interventions may increase the likelihood of overdose death by eliminating the tolerance that a patient had built up. To address myths about the effectiveness of buprenorphine and abstinence treatment, we can start with advocacy and education about the evidence to counter misleading depictions of addiction treatment in the media.

Another myth is that provid-

Myths and Realities of Opioid Use Disorder Treatment.		
Myth	Reality	Possible Policy Response
Buprenorphine treatment is more dangerous than other chronic disease management.	Buprenorphine treatment is simpler than many other routine treatments in primary care, such as titrating insulin or starting anticoagulation. But physicians receive little training in it.	Amend federal buprenorphine-treatment eligibility requirements to include training completed during medical school and require training during medical school or residency. Add competency questions to U.S. Medical Licensing Examination and other licensing exams.
Use of buprenorphine is simply a “replacement” addiction.	Addiction is defined as compulsively using a drug despite harm. Taking a prescribed medication to manage a chronic illness does not meet that definition.	Public health campaign to reduce stigma associated with addiction treatment, similar to past campaigns (e.g., HIV) that provided education and challenged common myths.
Detoxification for opioid use disorder is effective.	There are no data showing that detoxification programs are effective at treating opioid use disorder. In fact, these interventions may increase the likelihood of overdose death by eliminating tolerance.	Advocacy from professional physician organizations to educate federal and state agencies and policymakers about evidence-based treatment and the lack of evidence for short-term “detoxification” treatment.
Prescribing buprenorphine is time consuming and burdensome.	Treating patients with buprenorphine can be uniquely rewarding. In-office inductions and intensive behavioral therapy are not required for effective treatment.	Develop and disseminate protocols for primary care settings that emphasize out-of-office induction and treatment.
Reducing opioid prescribing alone will reduce overdose deaths.	Despite decreasing opioid prescribing, overdose mortality has increased. Patients with opioid use disorder may shift to the illicit drug market, where the risk of overdose is higher.	Develop a national system of virtual consultation for physicians to reach addiction and pain specialists who can support treatment of patients with suspected opioid use disorder.

ing buprenorphine treatment is particularly onerous and time consuming. In our experience, it is no more burdensome than treating other chronic illnesses. A typical visit includes assessing medication adherence, examining disease control (e.g., cravings and use), titrating doses, and ordering laboratory tests. Moreover, buprenorphine treatment provides one of the rare opportunities in primary care to see dramatic clinical improvement: it’s hard to imagine a more satisfying clinical experience than helping a patient escape the cycle of active addiction. The fact that, for in-office inductions, patients must wait until withdrawal begins to take an initial buprenorphine dose under observation undoubtedly contributes to fears about the demand on physicians’ time. But this process has not been shown to be more effective than having patients start the medication out-

side the office. In fact, buprenorphine management provided by a PCP is effective with or without additional psychosocial interventions. This myth could be countered by developing and disseminating protocols emphasizing home induction and primary care models for treatment, including approaches consistent with efforts to transform practices into patient-centered medical homes.

Finally, some observers believe that physicians should simply stop prescribing so many opioids. The crisis began with increased opioid prescribing, yet as prescribing rates have fallen since 2011, overdose deaths have accelerated. If prescribing patterns were the sole driver of overdoses, then decreased prescribing should have had a measurable effect on opioid-related mortality over the past several years. In reality, research has demonstrated that interventions like the introduction of

abuse-deterrent Oxycontin, which reduce access to frequently misused prescription opioids, have resulted in people shifting their opioid of choice predominantly to heroin. Rising overdose mortality despite decreasing opioid prescribing suggests that merely reducing the prescription-opioid supply will have little positive short-term impact. Reducing prescribing could even increase the death toll as people with opioid use disorder or untreated pain shift into the unstable, illicit drug market. Instead, we need safer, more thoughtful opioid prescribing and accessible support, such as electronic consultations with addiction specialists, to help physicians offer buprenorphine for people with opioid use disorder.

We are in the midst of a historic public health crisis that demands action from every physician. Without dramatic intervention, life expectancy in the United States will

continue to decline. Mobilizing the PCP workforce to offer office-based buprenorphine treatment is a plausible, practical, and scalable intervention that could be implemented immediately. The opioid-overdose epidemic is complex and will require concerted efforts on multiple fronts, but few other evidence-based actions would have such an immediate lifesaving effect. It won't be easy, but we are confident that U.S. PCPs have the clinical skill and grit to take on this challenge.

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1. Sordo L, Barrio G, Bravo MJ, et al. Mortality risk during and after opioid substitution treatment: systematic review and meta-analysis of cohort studies. *BMJ* 2017;357:j1550.

2. Saloner B, Karthikeyan S. Changes in substance abuse treatment use among individuals with opioid use disorders in the

United States, 2004-2013. *JAMA* 2015;314:1515-7.

3. Creedon TB, Cook BL. Access to mental health care increased but not for substance use, while disparities remain. *Health Aff (Millwood)* 2016;35:1017-21.

4. Jones CM, Campopiano M, Baldwin G, McCance-Katz E. National and state treatment need and capacity for opioid agonist medication-assisted treatment. *Am J Public Health* 2015;105(8):e55-e63.

5. Kakko J, Svanborg KD, Kreek MJ, Heilig M. 1-Year retention and social function after buprenorphine-assisted relapse prevention treatment for heroin dependence in Sweden: a randomised, placebo-controlled trial. *Lancet* 2003;361:662-8.

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## Moving Addiction Care to the Mainstream — Improving the Quality of Buprenorphine Treatment

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More than 40,000 Americans died from opioid overdoses in 2016 — more than the number killed in motor vehicle accidents. The stunning increase in overdose deaths since the 1990s has revealed a pervasive lack of capability to meet the need for treatment in the 2.1 million Americans who have an opioid use disorder.<sup>1</sup> Since less than one fifth of people with opioid use disorder receive addiction treatment,<sup>1</sup> recent national initiatives have understandably focused on increasing access to care, and especially access to medications, for addiction treatment. Even when patients do obtain treatment, however, they often experience care as fragmented and difficult to navigate. These challenges exist worldwide but are particularly acute in the United States, given the magnitude of opioid-related injury and death rates

in this country and the historical marginalization and underfunding of addiction care. Payers and health systems can help move treatment to the mainstream, and increase the proportion of patients who recover, by expanding the pool of clinicians who treat opioid use disorder, improving measurement of treatment quality, and linking payment to outcomes.

Like HIV/AIDS or diabetes, opioid use disorder is a chronic condition that can be managed using medication as a component of care. Medications reduce cravings and withdrawal in people habituated to opioid use, supporting remission of the core symptoms of opioid use disorder. Medicines can also blunt or block the euphoric effects of opioids should relapse occur. Each medication approved by the Food and Drug Administration (FDA) for opioid use disorder — buprenorphine, methadone, and naltrexone — addresses physiological and psychological changes associated with long-term opioid use, reducing illicit opioid use and overdose risk. Outside the United States, some patients with severe opioid use disorder are also successfully treated with injectable diacetylmorphine (heroin) or hydromorphone, treatments that are not approved by the FDA. Medications are optimally paired with counseling and social support to address the needs of people with co-occurring mental health and social problems.<sup>1</sup>

Although all three medications have important roles in treatment, buprenorphine currently presents the greatest opportunity for expanding treatment into the general medical system (see the Perspective article by Wakeman and Barnett, pages 1–4). In the United

States, some patients with severe opioid use disorder are also successfully treated with injectable diacetylmorphine (heroin) or hydromorphone, treatments that are not approved by the FDA. Medications are optimally paired with counseling and social support to address the needs of people with co-occurring mental health and social problems.<sup>1</sup>