

Overdose Prevention Through Medical Treatment of Opioid Use Disorders

In 2016, 42 249 Americans fatally overdosed on an opioid (1). Although prescribing of opioid analgesics has declined thanks to greater awareness and new guidelines, increasing numbers of individuals are initiating opioid use with heroin, and nearly half of the fatal opioid overdoses in 2016 involved fentanyl and synthetic analogues. Expanding access to medications for opioid use disorder (OUD) is essential if we are to reverse these trends.

The opioid agonist methadone, the partial agonist buprenorphine, and the antagonist naltrexone in its extended-release formulation have been repeatedly shown to reduce opioid use and its health consequences, including overdose, compared with behavioral therapy alone or no treatment (2-4). Methadone and buprenorphine (the oldest and most thoroughly studied medications) have also been shown to improve social functioning; reduce other medical complications associated with OUD, such as infectious disease transmission; and reduce criminality. Despite this evidence, fewer than half of persons with an OUD receive medication for it, and the average treatment lasts less than 6 months.

The study by Laroche and colleagues (5) (which is, to our knowledge, the first prospective cohort study of patients enrolled from an emergency department who had had a nonfatal opioid overdose) further solidifies the evidence of the benefits of methadone and buprenorphine in preventing opioid-related deaths. The authors looked at mortality and medication-assisted treatment (MAT) use or nonuse among 17 568 opioid overdose survivors over 12 months after overdose. Both methadone and buprenorphine were associated with significant reductions in opioid-related and all-cause mortality (5). No association was found for treatment with naltrexone, although this might reflect the limited number of participants who received it.

This study also highlights the gross underuse of these effective medications. All persons in the study population had a history of overdose, which is a recognized risk factor for future overdoses. However, just 30% ($n = 5273$) received any medication for OUD in the year after overdose: 11% received methadone for a median of 5 months, 17% buprenorphine for a median of 4 months, and 6% naltrexone for a median of 1 month (these tallies were not mutually exclusive because 5% of the sample received more than 1 medication). This number is consistent with the OUD "treatment gap" shown by national data. According to the Treatment Episode Data Set maintained by the Substance Abuse and Mental Health Services Administration, 37% of patients treated in specialty facilities for a heroin use disorder and 31% for a nonheroin OUD had treatment plans that included MAT in 2015 (6). The number is also consistent with the low treatment reten-

tion rates reported in the Treatment Episode Data Set: Approximately 50% of patients who start MAT for OUD interrupt it within the first 6 months. This highlights the need for interventions to facilitate treatment retention.

Laroche and colleagues' results are also alarming because, although participants met criteria for OUD and had had an overdose, many were subsequently given prescriptions for opioids (34%) or benzodiazepines (26%) in the 12 months after the overdose. This indicates that guidelines cautioning against prescription opioids and their co-use with benzodiazepines are not being followed.

Overall, the findings identify major deficiencies in OUD treatment, including underuse of MAT and a fracture in the engagement of health care on how to manage OUD. Stigma is a root reason for both. Despite increased integration of the opioid treatment system with the rest of health care (thanks to health care reform), policy and infrastructural factors continue to impede MAT uptake. Treatment facilities often lack medical personnel who can prescribe medications; even if staff at opioid treatment programs are able to dispense methadone, they may not be waived to prescribe buprenorphine. In addition, insurers may not cover all forms of MAT, and when they do, coverage is usually subjected to limits on duration that lessen treatment effectiveness.

Receiving an agonist medication for maintenance is pharmacodynamically distinct from sustaining an addiction to prescription analgesics or illicit opioids (7), yet misperceptions that methadone and buprenorphine "substitute a new addiction for an old one" persist. Where maintenance medications are used, they are often prescribed for too short a time or at too low a dose. According to the Substance Abuse and Mental Health Services Administration, nearly half of patients receiving buprenorphine in opioid treatment facilities receive 90 days or fewer of continuous treatment with this medication (8), indicating that many providers are not following evidence-based practices.

Several strategies might increase MAT delivery to those at risk for opioid overdose, including initiating buprenorphine therapy in the emergency department for overdose survivors and linking them to treatment by a primary care physician waived to continue providing the medication (9). Currently, hospital physicians may administer, but not prescribe, buprenorphine or methadone for up to 3 days. Other approaches to increase MAT use (Table) include engaging persons with OUD in criminal justice settings into treatment, such as prescribing MAT during incarceration or initiating it before release; these measures have been shown to reduce opioid use and overdoses after reentry into the community (10).

Table. MAT Facilitators

Description	Evidence
Treatment-level	
Increasing adherence with access to ER formulations	Methadone requires daily dosing, usually in a methadone clinic. The FDA has not approved any ER methadone formulations. Buprenorphine is dispensed in a medical office and does not require daily dosing. The FDA has approved 1-mo and 6-mo ER formulations. ER naltrexone requires injection only once a month.
Provider-level	
Using telehealth and other models of care to prescribe and monitor MAT	Telehealth can expand access to MAT in rural areas or those without providers. Nurses, nurse practitioners, and physician assistants can monitor MAT.
Using care models to link patients to MAT after nonfatal overdose or initiate MAT in ED settings and primary care	ED initiation of office-based opioid treatment, clinicians identify OUD, initiate buprenorphine treatment in the ED, and connect patients to primary care for ongoing management. In inpatient initiation of MAT, clinicians identify OUD among hospitalized patients, initiate MAT, and link patients to community-based treatment after discharge.
Increasing the number of waived providers for buprenorphine	Primary care and specialty physicians, nurse practitioners, and physician assistants could provide buprenorphine.
Providing MAT in primary care, especially federally qualified health centers	The Medicaid Health Home model is a federal program that allows states to apply for a Medicaid waiver to integrate MAT and behavioral health therapies with primary care for patients with OUD. The Massachusetts Nurse Care Manager model reimburses nurse care managers in federally qualified health centers who support physicians with the delivery of buprenorphine or naltrexone for OUD.
Increasing access to MAT in criminal justice settings	A 2010 survey of drug courts showed that only 56% offered MAT. Further, only 55% of prisons offered methadone, 14% offered buprenorphine, and fewer than half referred persons to MAT programs upon release.
Allowing pharmacists to administer MAT	Pharmacists could be trained to provide MAT injections. This would increase availability in areas without easy access to physicians.
Community-level	
Reducing the stigma and increasing the public's understanding of MAT for OUD	A common misconception is that MAT just replaces one addiction with another. Better education about MAT and how it works is necessary to change these beliefs. Resources describing MAT are available from both the National Institute on Drug Abuse and the Substance Abuse and Mental Health Services Administration.

ED = emergency department; ER = extended-release; FDA = U.S. Food and Drug Administration; MAT = medication-assisted treatment; OUD = opioid use disorder.

A great part of the tragedy of this opioid crisis is that, unlike in previous such crises America has seen, we now possess effective treatment strategies that could address it and save many lives, yet tens of thousands of people die each year because they have not received these treatments. Larochelle and colleagues' study reveals the challenges in changing attitudes toward MAT and overcoming infrastructural barriers across the health care system to treat OUD. Ending the crisis will require changing policies to make these medications more accessible and educating primary care and emergency providers, among others, that opioid addiction is a medical illness that must be treated aggressively with the effective tools that are available. To do this, we must remove the stigma from the disease of addiction and from the medications that can be used to treat it.

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