# Medication-Assisted Treatment for Opioid Use Disorder: Proceedings of a Workshop in Brief

**DETAILS**

10 pages | 8.5 x 11 | PDF
ISBN 978-0-309-48707-8 | DOI 10.17226/25322



**CONTRIBUTORS**

Anna Nicholson, Rapporteur; Board on Health Sciences Policy; Health and Medicine Division; National Academies of Sciences, Engineering, and Medicine

Proceedings of a Workshop

IN BRIEF

November 2018

# Medication-Assisted Treatment for Opioid Use Disorder

## Proceedings of a Workshop—in Brief

On October 30 and 31, 2018, the Committee on Medication-Assisted Treatment (MAT) for Opioid Use Disorder (OUD) held a 1.5-day workshop in Washington, DC. To support the dissemination of accurate patient-focused information about treatments for addiction, and to help provide scientific solutions to the current opioid crisis, an ad hoc committee of the National Academies of Sciences, Engineering, and Medicine (the National Academies) was created to conduct a study of the evidence base on MAT for OUD. Specifically, the committee was asked to (1) review the current knowledge and gaps in understanding regarding the effectiveness of MAT for treating OUD, (2) examine the available evidence on the range of parameters and circumstances in which MAT can be effectively delivered (e.g., duration of treatment, populations, settings, and interventions to address social determinants of health as a component of MAT), (3) identify challenges in implementation and uptake, and (4) identify additional research needed. The public workshop was designed to assist the committee in gathering evidence, as well as to bring the committee together with a wide range of clinicians, academic experts, policy makers, and representatives of affected individuals and family members for a full discussion of the current initiatives related to MAT, existing evidence and research gaps, and barriers that discourage access to and use of MAT.

This Proceedings of a Workshop—in Brief highlights the presentations and discussions that occurred at the workshop. It should not be seen as reflecting findings, conclusions, or recommendations of the workshop participants or of the committee. Statements, proposals, and opinions expressed are those of individual presenters and participants and have not been endorsed or verified by the National Academies or the committee and they should not be construed as reflecting any group consensus. The committee's Consensus Study Report will be available in spring 2019.

## FEDERAL INITIATIVES

The first session focused on the current federal efforts to improve treatment for OUD and access to MAT. Committee members heard the perspectives of two speakers from the agencies sponsoring the study—the National Institute on Drug Abuse (NIDA) and the Substance Abuse and Mental Health Services Administration (SAMHSA)—as well as from other federal agencies also working in this domain: the Centers for Disease Control and Prevention (CDC), the Health Resources and Services Administration (HRSA), and the Food and Drug Administration (FDA).

Nora Volkow, director of NIDA, emphasized that OUD is rapidly lethal, killing 2 percent of the 2.1 million people with OUD in the United States each year. Medications are irrefutably the most effective way to treat OUD—reducing the likelihood of overdose death by up to three-fold—but fewer than half of patients receive them due to stigma and structural barriers, and treatment retention is poor, she said. NIDA is focusing on implementation science and service delivery research to expand access to MAT in the health care and criminal justice systems. Priority knowledge gaps include the effectiveness of different MAT modalities across the continuum of OUD severity, optimal duration of MAT, impact of individual factors, and transition off MAT. Volkow maintained that evidence should guide decisions about the type of MAT that is biologically optimal for an individual. She explained that OUD is highly heterogeneous,

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with outcomes shaped by disease severity and the environmental factors, thus patients need support systems to stay in treatment. Volkow remarked that educating all providers about treating OUD is low-hanging fruit. She pointed to insurance and reimbursement problems—as well as the traditional methadone clinic model—as key structural barriers to implementing MAT. She also added that a wider segment of the pharmaceutical industry should be engaged to develop better medications for treating OUD.

Deepa Avula of SAMHSA described how the agency is working to improve MAT service delivery. The State Opioid Response Grants program supports the development of comprehensive care systems for OUD with the flexibility for states to tailor system design to their specific needs and available resources. She noted that SAMHSA strengthened the language around the requirement that programs make MAT available. SAMHSA also engages peers with lived experience to help people with OUD to rebuild their lives and funds public awareness campaigns and extensive OUD-specific training and technical assistance. She said that SAMHSA is rolling out a program to embed buprenorphine-waiver training[1] within medical school curricula to expand access to the medication. She contended, "if every waivered physician were to serve patients even anywhere close to their limit, we would not have an opioid crisis in this country." Avula suggested conducting population-specific research to examine the comparative effectiveness of different care models for people with co-occurring conditions. She also highlighted the importance of community supports to complement medication across the spectrum of care.

Molly Evans outlined CDC's OUD-related activities: conducting surveillance and research; building state, local, and tribal capacity for prevention; supporting providers, health systems, and payers with guidance about opioid prescribing practices; partnering with public safety organizations on prevention strategies in high-intensity drug trafficking areas; and empowering consumers by raising awareness about the risks of prescription opioid misuse. Evans reported that CDC is funding an epidemiologic mixed-methods evaluation of OUD treatment in real-world outpatient settings to better understand the interaction among patients, providers, sites, and treatment type. The study's objectives are to improve treatment outcomes and to inform evidence-based decision making by policy makers, providers, and other stakeholders.

Judith Steinberg explained that HRSA supports health centers in implementing a patient-centered medical home model of care for OUD that integrates behavioral and psychosocial health interventions. The agency also supports workforce development and rural service delivery through telehealth modalities and is working to integrate treatment for OUD into primary care. She said that ongoing challenges include recruiting and retaining providers licensed to prescribe MAT; reimbursing services delivered by support providers; addressing stigma among providers and the community; and coordinating complex, timely, and comprehensive care for OUD. Steinberg said that establishing an evidence base for new models of care, such as MAT delivery in primary care, will be needed to satisfy the stringent requirements of payers. She said evidence is also needed to support the scale up of models that target vulnerable populations that need a customized care approach.

There are currently three FDA-approved medications for treating OUD: methadone, buprenorphine, and naltrexone. According to Rigo Roca, FDA, there are currently 55 active marketing applications related to these three medications, including new drug applications and abbreviated new drug applications (for generic formulations). Recent approvals include buprenorphine depot and another buprenorphine-naloxone film. He explained that they have fast-track and breakthrough therapy designations that can help to expedite regulatory approval for eligible new therapies for MAT. FDA has hosted various meetings to explore ways to expand MAT access and to support patient-focused drug development. Lastly, he noted that FDA also recently published draft guidance on the development of depot buprenorphine products and on endpoints for MAT effectiveness.

## CURRENT EVIDENCE AND PRACTICE ON MEDICATION FOR TREATING OPIOID USE DISORDER

The second session surveyed the current evidence and practice on medication for treating OUD. Specifically, the session explored—for each medication—the evidence of effectiveness and evidence gaps related to use (e.g., what is known regarding dosing ranges and optimal duration of treatment); regulations, infrastructure, and care settings required for delivery; and provider and patient preferences and challenges.

Charles O'Brien, University of Pennsylvania, traced the history of opioids as pain treatment from ancient Mesopotamia to the synthesis of heroin in the 19th century to the federal policy restricting or criminalizing opioids for most of the 20th century. Widespread opioid prescribing for non-cancer pain in the 1990s catalyzed the parallel epidemic of street opioids at the core of the current crisis, he explained. Providers remain largely uneducated about addiction and opioids, he said, and he emphasized the need to distinguish between physical dependence, which is a normal physiological process, and addiction, which involves compulsive drug-seeking behavior despite harmful consequences. He also highlighted the need for education and comprehensive approaches for pain management and more extensive use of non-pharmacological pain treatments, which have no risk of addiction.

[1]The Drug Abuse Treatment Act of 2000 (DATA 2000) requires physicians to obtain a waiver to prescribe buprenorphine in office-based settings.

Methadone and buprenorphine are the two FDA-approved opioid agonist medications[2] for OUD. Methadone's effectiveness in treating OUD is indisputable, said Gavin Bart, University of Minnesota. Methadone reduces all-cause mortality, opioid-related mortality, and the risk of acquiring and transmitting HIV (Larochelle et al., 2017; MacArthur et al., 2012; Sordo et al., 2017). He explained that treatment retention improves when people receive higher doses of methadone and with structural advantages such as take-home dosing privileges and nearby treatment settings (Bart et al., 2012; Chutuape et al., 1999; Hser et al., 2011; Simpson et al., 1997; Villafranca et al., 2006). Concerns about methadone's safety persist, he added, despite clear evidence that methadone prescribed at clinics contributes minimally to overdose deaths and that the incidence of cardiac adverse events is not clinically significant (Bart et al., 2017; Johnson and Richert, 2015; Jones et al., 2016; Lofwall and Havens, 2012). Despite the wealth of evidence supporting methadone treatment, it remains stigmatized and excessively regulated; as a result, most people with OUD lack access to long-term methadone treatment (IOM, 1995).

Michelle Lofwall, University of Kentucky, explained that buprenorphine is effective in decreasing mortality (Larochelle et al., 2017; Schwartz et al., 2013). Concerns about diversion and misuse[3] underpin stringent regulatory policies—such as the buprenorphine prescribing waiver and prior authorization criteria—that reduce treatment access, despite evidence that most buprenorphine diversion is actually driven by lack of access to treatment (Lofwall et al., 2014).

Adam Bisaga, Columbia University Medical Center, addressed some common concerns about naltrexone, the only FDA-approved opioid antagonist medication.[4] Starting treatment with naltrexone is challenging, he said, because it requires a period of opioid withdrawal before initiation, unlike agonist medications. He noted that it is important to distinguish between oral naltrexone and the long-acting injectable formulation. A recent study found that treatment retention with injectable naltrexone was better than oral naltrexone (Sullivan et al., 2018). Naltrexone has similar effects on retention, cravings, and opioid use as buprenorphine, he said, with a comparable overdose risk while patients are in treatment. However, he said it is easier to discontinue treatment with naltrexone—because it does not cause dependence—with the risk of overdose increasing after treatment dropout. Naltrexone tends to be a less popular MAT option, he said, but many patients and providers are not aware of its benefits or its superior injectable formulation. He maintained that naltrexone should be seen as among the range of choices for patients, in addition to methadone and buprenorphine.

John Brooklyn, University of Vermont, described how Vermont's hub-and-spoke model integrates OUD treatment into primary care. Spokes, including all buprenorphine-waivered providers, link bi-directionally to one of six regional hubs, which are federally certified opioid treatment programs (OTPs). The model aims to prevent overdoses by providing continuous treatment to everyone with OUD in the state. He reported that as of September 2017, Vermont no longer has a waiting list, OUD treatment is available on demand at any OTP, and most of the state has access to buprenorphine treatment in an office-based setting. He reported that 1.47 percent of the entire population of the state is currently on MAT. In Vermont, the per capita rate of health care expenditures (excluding OUD treatment costs) for people on MAT has declined steadily over the past decade and the expansion of access to MAT has helped stabilize overdose rates.

Maia Szalavitz, American reporter and author, argued that "MAT" is a deeply inappropriate term because medication is the cornerstone of effective OUD care, not an optional add-on. She suggested that "counseling-assisted treatment" would be more apt. As a former patient, she said the treatment she received in methadone clinics was carceral and humiliating. Treating OUD in "ghettoized" methadone clinics is deeply problematic, she said, because it perpetuates stigma and discrimination against people who deserve equitable, respectful, evidence-based care. She said that some people want to come off methadone because the system is so horrible and they perceive it as a "chemical parole," not because of the medication itself. Stipulating that life-saving medications for OUD are contingent on conditions such as counseling, 12-step programs, or abstinence from other drugs would be unthinkable for any other chronic condition, she remarked. Two-thirds of drug courts prohibit MAT entirely and they often mandate participation in Narcotics Anonymous, which does not consider people on medication to be "clean." She added that the demeaning and hostile language used by the health care and judicial systems to describe addiction exacerbates that stigma.

Panelists discussed why treatment programs that discourage or prohibit medications are still so prevalent, given the known effectiveness of MAT. Bart said that such programs will continue to exist as long as they are funded. Several participants noted that many persons on MAT are also denied housing, prevented from participating in sober living environments, taken off medication while incarcerated, and denied other services because of their medication status. Bart emphasized the need to clarify the Americans with Disabilities Act and the Fair Housing Act as including MAT to prevent the ongoing discrimination of persons on MAT. Lofwall commented that the language around addiction must change to better align with the concept of OUD

[2]Opioid agonist medications work by activating the mu-opioid receptor in ways that yield some rewarding effects. Methadone is a full agonist that fully activates the receptor, while buprenorphine is a partial agonist that partially activates the receptor with a ceiling effect that diminishes its potential to cause rewarding effects.

[3]Lofwall defined diversion as the misappropriation of medication prescribed to somebody else, whether or not money is exchanged, and misuse as taking medication in a way other than intended.

[4]An opioid antagonist medication prevents opioids from activating the opioid receptor system, unlike methadone or buprenorphine.

with other chronic medical conditions. In the context of medication choice, Brooklyn and Szalavitz emphasized the importance of patients' preferences and shared decision making. Several participants discussed that the strong public bias toward getting off medications and tapering is largely due to the stigma of addiction and its treatment; for patients with conditions such as diabetes and HIV, the focus primarily is on staying on medications that treat the condition. Lofwall commented that the patient's insurance largely dictates the choice of MAT, while Bisaga noted that many programs only offer a single type of medication.

## IMPLEMENTATION AND UPTAKE: EXPLORING OPPORTUNITIES AND BARRIERS

During the third session of the workshop, opportunities and barriers with respect to the implementation and uptake of MAT were explored. The session featured three panels that covered education and training; health care delivery, payment approaches, and economic measures; and social determinants of health. The speakers' presentations are organized here according to the panel in which they spoke, but many touched on a full range of these often interconnected barriers and opportunities.

### Education and Training

The first panel focused on the opportunities and barriers related to education and training, including exploring the currently required education and training for providers and potential improvements; identifying the best practices and hurdles to achieving the required workforce to treat OUD; and examining the communication and education needs for patients, families, policy makers, law enforcement, the public, and other stakeholders.

Jeannette Tetrault, Yale University, said that they are developing a thread of addiction content throughout all medical training at the residency, advanced, and fellowship levels of the university. A component of the curriculum is explicitly designed to stop perpetuating the stigmatizing language around addiction in medical training and among faculty educators and mentors. Medical students today tend to be committed to social justice issues and eager to take on the task of ending the OUD epidemic, she said, and making education on addiction care a core requirement would bolster those efforts.

Stephen Patrick, Vanderbilt University, discussed ways to improve outcomes for pregnant women, babies, and adolescents. MAT access is substantially inadequate for vulnerable populations with OUD: only half of pregnant women and one-quarter of youths receive treatment; less than 5 percent of adolescents on Medicaid receive methadone or buprenorphine (Hadland et al., 2017, 2018; Haight et al., 2018; Short et al., 2018). He said that this gap underscores the urgent need for more pediatricians and obstetricians to become buprenorphine-waivered. He reported that both buprenorphine and methadone are recommended for OUD in pregnant women to decrease their risk of overdose and relapse and their infants will have a greater chance of going to term and having a higher birth weight. Infants have an elevated risk of neonatal abstinence syndrome if the mother receives MAT, but new models of trauma-informed, standardized, collaborative care are significantly reducing the length of stay in the hospital and are more inclusive of the mother's needs (Wachman et al., 2018). Patrick noted that the literature on long-term outcomes from neonatal abstinence syndrome is limited, but the long-term effects do not appear profound. He added that early intervention and home nursing visitation services for children born with neonatal abstinence syndrome are effective, but likely underutilized.

Eugenia Oviedo-Joekes, University of British Columbia, described the benefits of short-acting injectable medications for treating patients with the most severe OUD. She said that in addition to methadone, buprenorphine plus naloxone, and slow-release oral morphine, Health Canada offers diacetylmorphine (pharmaceutical-grade heroin) and hydromorphone (dilaudid) short-acting injectable medications as treatment options in controlled settings for people who cannot or will not stop using street drugs. She said that this is a critically important, evidence-based treatment modality for those whom the system failed—for example, people from indigenous communities disproportionately affected by OUD with a history of oppression that discourages care seeking. Offering the option of short-acting injectables engages patients in shared decision making with their provider, reduces the stigma and judgment, and "meets people where they are" to address their full spectrum of needs.

Jules Netherland, Drug Policy Alliance, situated drug use and addiction within a broader public health approach for expanding access to MAT. She called for addressing the social determinants of OUD, decriminalizing drug use, eliminating punitive policies, and integrating harm reduction services. She suggested exploring outcomes other than abstinence within this broader view, such as quality of life, family reunification, stabilization, and employment. People who use drugs should contribute meaningfully to the development of policies and provider training to represent the voices of those directly impacted, she stressed. Netherland described a host of innovative service delivery models to expand access to MAT, including office-based methadone, pharmacy-based methadone and buprenorphine, induction and maintenance in emergency departments (EDs), telemedicine, and mobile delivery. She also said education and training on MAT should be expanded beyond medical providers to individuals that work with hard-to-reach populations, such as street-based medicine, homeless service, and housing providers.

Kathleen Johnson, Advocates for Opioid Recovery, shared her experience of supporting a son with OUD to illustrate its destructive effect on the infrastructure of people's lives. People with OUD often struggle to stay afloat and on treatment in

the face of overwhelming obligations to their families, work, school, finances, and the criminal justice system. She said that broad structural changes are urgently needed so that patients, families, and communities can surmount this multigenerational, decades-long challenge. She remarked that a delicate balance needs to be struck in supporting patients' and families' decision making without overstepping the bounds.

During the panel discussion on mandating or incentivizing provider education on OUD, Tetrault suggested that institutions should be incentivized to have faculty who can model integrated addiction care and that all medical schools should have addiction fellowships. Patrick proposed that medical education at all levels and for all providers, including allied health professionals, should include addiction training and trauma-informed care. He noted that some states require continuing medical education on opioid prescribing for medical licensure, which could be a mechanism to expand provider knowledge on addiction and MAT. He added that patients' and families' experiences in the health system should be integrated into provider education to help mitigate the stigmatizing, mistaken belief that MAT is simply trading one drug for another.

Panelists discussed how to disseminate information about MAT to patients, families, and communities at large. Johnson said that information from grassroots and social media sources is often more helpful than official sources of information that are siloed and difficult to access in a crisis. Oviedo-Joekes explained that when her group publicized the results of a large clinical trial on hydromorphone, an entire team—including patients—collaborated to create a full media communication plan with a clear message that everyone would adhere to, which was vital to preventing the message from being distorted by the media. Netherland suggested partnering with advocacy organizations with experience translating technical findings into lay language for targeted dissemination. She said that crafting the product's format and delivering it in appropriate ways requires working closely with patients and families directly impacted by OUD. Patrick remarked public perception drives policy change and it is incumbent on providers and researchers to frame the narrative carefully using language that reduces stigma and is inclusive of all communities affected by the opioid epidemic since its inception decades ago. Netherland added that efforts to remedy some of the social injustices inflicted on people of color with OUD, for example, might frame the narrative with the same type of humanizing backstories afforded to white victims of the epidemic.

### Health Care Delivery, Payment Approaches, and Economics Measures

The second panel explored the opportunities and barriers related to health care delivery, payment approaches, and economics measures to improve the treatment of OUD. The objectives were to discuss how health care access and delivery impact patient access to medications to treat OUD; consider regulations around hospital capacity, administrative burdens, and the tight regulation of medical products; explore the cost, reimbursement, and coverage of medications to treat OUD and discuss measures to help facilitate quality improvement and access; and examine the regulatory differences of for-profit versus nonprofit treatment providers.

Richard Frank, Harvard University, focused on economic issues in improving the treatment for OUD. He began with the demand side: 11–26 percent of people with OUD receive treatment, and among those who do, 34 percent receive MAT (Knudsen et al., 2011); around 50 percent of people are still in treatment after 1 year (Blanco et al., 2013); and people with OUD tend to wait between 4 and 7 years after developing the condition before starting treatment (Wang et al., 2005). On the supply side, he said, around 40 percent of treatment facilities offer MAT—with less than 3 percent offering all three forms (Jones et al., 2015) and less than one-quarter of publicly funded facilities offering MAT (Knudsen, 2015). Wide disparities in Medicaid coverage of OUD treatment across states have serious implications for access, because OUD disproportionately affects people with low income. He explained that MAT has traditionally been highly constrained by insurance regulations, but recent Medicaid expansions have spurred rapid growth in MAT, driven largely by office-based buprenorphine (Maclean and Saloner, 2017). Integrating MAT into general medical practices could substantially increase access, he suggested, but low reimbursement levels disincentivize providers from offering it. He advised that payment models should be better aligned with effective care models and that some of the care management burden should be shifted to non-physician providers—e.g., through bundled payments that link payment to services from outreach to retention. Frank said that the policy levers with the greatest potential payoff to expand MAT access include Medicaid expansion and design, parity implementation, and state regulation of OUD programs and licensure.

Allan Coukell, The Pew Charitable Trusts, remarked that few state-level policy makers have the holistic vision needed to address widespread shortfalls in treatment capacity. Addiction is still not commonly understood as a chronic disease and is compounded by the lingering preference for residential, abstinence-only care among many patients, families, policy makers, and payers. He explained that insurance companies often limit their coverage of MAT; thus discouraging providers while continuing to provide full coverage for non-evidence-based care. He added that administrative burdens arise from low reimbursement levels and lack of uniform prior authorization criteria across payers.

Katrina King, George Mason University, shared her experience as a patient with OUD and as the mother of a child who died by heroin overdose shortly after requesting MAT and being waitlisted. She outlined some of the obstacles that prevent

people from receiving life-saving treatment: lack of insurance coverage, expensive providers, waitlisting, stigma among providers, and the lack of peer recovery support. King has drawn on her firsthand experiences to become a community health navigator. Peer navigators have the shared lived experience to guide and mentor people with OUD who need help in staying on treatment, finding housing and employment, and accessing existing supports in the community. Peer navigation meets people where they are, she explained, and helps them to rebuild connections with their community.

Yngvild Olsen, Institutes for Behavior Resources, Inc., described an alternative payment model that mitigates reimbursement barriers by providing patient-centered opioid addiction treatment in outpatient (non-OTP) settings. The model aims to reimburse appropriately through a one-time initial payment to cover treatment initiation followed by ongoing monthly payments for medical, psychological, and social support services. She explained that some providers offer fully integrated care under one roof, while others join formal collaborative care arrangements. Providers are required to meet quality standards in providing evidence-based services and costs are controlled by eliminating unnecessary spending on ineffective treatments, she said.

During the discussion, panelists explored options for restructuring payments and setting performance measures for MAT. Coukell said that ideally, coverage would attach to the patient and not the facility, so the patient can go to any site and receive the most appropriate care. Frank contended that the performance metrics integrated into current measures used for accountable care organizations are deeply inadequate for mental health and addiction. To create better performance measures that are not as contingent on payment structures, he suggested creating targeted measures to capture access, quality, and retention. Olsen noted that current financial incentives and performance measures based on discharge metrics are not suitable for OUD or other chronic conditions treated by primary care or addiction medicine. She also warned that often bundled payments lack transparency and can incentivize the wrong practices in the absence of targeted performance measures linked to outcomes.

### Social Determinants of Health and Special Populations

The third panel focused on the social determinants of health and treatment for OUD. The objectives were to explore the impact of comorbidities on treatment and how this may impact the uptake and overall effectiveness of medications to treat OUD; consider how pregnancy, age, race, gender, genetic variables, mental health, chronic pain, and other factors may influence treatment; and identify further evidence needed to better deliver culturally appropriate care and serve diverse populations.

Mishka Terplan, Virginia Commonwealth University, remarked that women are highly motivated to maximize the health and well-being of their pregnancy, including significant behavior change. Virtually all women with OUD who become pregnant will try to stop using, he said, but their addiction can make it difficult or even impossible to stop without medication to treat withdrawal symptoms. Overdose is one of the leading causes of maternal deaths in the United States and the risk of overdose increases as the postpartum period progresses (Schiff et al., 2018). He explained that the standard of care for pregnant women with OUD is a set of comprehensive collocated services that integrate medication, behavioral counseling, and prenatal care. When women with addiction are treated during pregnancy, birth outcomes are almost identical to women without addiction (Kotelchuck et al., 2017). Even though medications are known to be protective during pregnancy and postpartum, he warned that access to care is extremely limited. Most pregnant women with OUD receive no treatment at all (Terplan et al., 2015) and only half of those who are treated receive MAT (Short et al., 2018). He emphasized that among women who are treated during pregnancy, the postpartum period (the “fourth trimester”) is a critical inflection point when women can easily fall out of treatment due to gaps in insurance coverage and the siloed reproductive health care system.

Anand Kumar, University of Illinois at Chicago, described two vulnerable populations with OUD: people with psychiatric comorbidities and the elderly. He explained that a combination of biological and psychological risk factors plays a role in OUD and given the overlap in the neuronal circuitry underlying OUD and other psychiatric conditions, there is considerable comorbidity of psychiatric disorders. Common comorbidities include major depression, anxiety disorders, posttraumatic stress disorder, other substance use disorders, antisocial personality disorder, and borderline personality disorder. Comorbidities are associated with poorer outcomes in OUD, he said, with some evidence suggesting that treating comorbid conditions may improve the treatment, psychosocial, and functional outcomes of OUD. He added that a range of evidence-based, non-pharmacological psychotherapeutic approaches can also be used to help manage anxiety and depression in the context of addiction treatment. Kumar also noted that older adults present a vulnerable population with regard to opioid use, but receive comparatively little attention. Kumar reported that individuals ages 65 and older represent 25 percent of long-term users of opioids (Mojtabai, 2018), and he emphasized the need for provider education about the special biological and psychosocial vulnerabilities of this population.

Josiah Rich, Brown University, described the process of incorporating MAT into OUD treatment for incarcerated populations in Rhode Island. After implementing a universal screening program, starting everyone with OUD on treatment, and connecting people to continuation treatment upon release, the number of post-release overdose deaths dropped by 60 percent

within 1 year. He found that most people want to be treated when they have access and that people generally have a strong preference for either methadone or buprenorphine; few choose depot naltrexone. He noted that MAT is not offered in most correctional facilities and if it is, only one medication is typically offered—usually depot naltrexone, due to the stigma about agonist therapies. Investing in treatment for incarcerated populations and connecting people to maintenance treatment after release are critically important, he said, but parallel efforts need to work toward diverting people with OUD directly into treatment rather than into the criminal justice system.

Helena B. Hansen, New York University, sketched the history of racial inequalities in addiction treatment to spotlight the biases that continue to permeate U.S. drug policies. She explained that the perceived universality of the opioid crisis today is the product of the specific ethnic marketing of opioids through a separate track of legal, protected narcotics for middle-class whites as well as drug policies that favor white consumers, such as buprenorphine deregulation. During the narcotic epidemic among the black working class decades ago, racial imaging was used to justify the war on drugs, she said. This led to racially disparate law enforcement and mass incarceration, instead of public outcry and efforts to address the social determinants of drug use. The impact of the opioid crisis on whites opens a window of opportunity to address those social determinants, said Hansen. Achieving a population-level public health impact with MAT will require intervening on social structures and inequalities through structural change, she added. To help dispel the historical legacy of suspicion and distrust of health care providers and medication among low-income communities of color, she suggested packaging medication together with social services, community building, and other deliberate social technologies for fostering connections and providing assistance with basic needs. She added that educating providers on the social determinants of addiction would help work against the bias and stereotyping that abounds in clinical practice.

## KNOWLEDGE GAPS, FUTURE RESEARCH, AND POTENTIAL POLICY CHANGES

The fourth session focused on knowledge gaps, future research, and next steps. As in previous sessions, speakers addressed a mix of interconnected topics, speaking both of the need to take immediate action to help those now suffering from OUD, as well as the need to advance understanding of how best to deliver and increase access to MAT.

The opioid epidemic has generated unprecedented demand for services, said Sharon Walsh, University of Kentucky, and the most impactful intervention against the rising overdose death toll is expanding treatment for OUD (Pitt et al., 2018). Of the small proportion of people with OUD who get treatment at all, the majority receives treatment that is not evidence-based and potentially harmful, she said. Many people enter prison-like, full-abstinence inpatient facilities where they painfully detoxify without medications that could alleviate their withdrawal symptoms. More affluent people may go to expensive luxury facilities, she added, but regardless of the setting, the end result is usually the same: most people will relapse and then begin the cycle anew. Walsh argued that policy must drive a paradigm shift toward quality, evidence-based, integrated care and against the abstinence-only dogma believed by many patients, communities, providers, and the justice system. She called for an immediate end to federal funding of programs that prohibit evidence-based care. Excessive regulatory barriers to MAT access also need to be lifted, she said, including insurers' fail-first policies and the requirement that both prescriber and implementer must be waivered for the new buprenorphine implant.

Gail D'Onofrio, Yale University, described the role that EDs can play in fighting the opioid crisis. EDs can identify patients, initiate treatment with buprenorphine, distribute naloxone, and link patients to treatment. Only 28 percent of opioid overdose survivors are linked to MAT (Larochelle et al., 2018) despite evidence that people given ED-initiated buprenorphine are twice as likely to be engaged in treatment after 1 month (D'Onofrio et al., 2015). To integrate research into practice, a quality framework for ED treatment of OUD was developed (Samuels et al., 2018). D'Onofrio suggested starting patients on treatment in the ED with high-dose buprenorphine that will last for a few days to sustain them until they can get into treatment, using new longer-acting buprenorphine injectables, and creating referral pathways out of the ED. D'Onofrio said that training on OUD care should be an expectation—not a request—of clinicians that is required by all health systems. The time to act is now, she urged, rather than waiting for research and knowledge gaps to be addressed.

Jonathan Watanabe, University of California, San Diego, discussed the pivotal role pharmacists can play in improving access to MAT. Evidence suggests that having pharmacists directly interface with clinicians to inform them about MAT has the potential to increase access. He suggested that analytics could accelerate efforts to reach more patients by monitoring opioid use and managing the availability of MAT for facilities. Pharmacies and community care clinics can serve as access points and mechanisms for reaching patients in areas hard hit by OUD but underserved by health care systems, he explained. Watanabe reported that there is interest among the pharmacy community about the possibility of allowing pharmacists to obtain waivers to administer buprenorphine, using the rationale that OUD is a public health threat.

Jessica Hulsey Nickel, founder of the Addiction Policy Forum, an OUD patient advocacy group, said that bridging the gap among clinicians, scientists, and the patient community will help to reduce the isolation and stigma that patients and families experience. She shared stories of patients and families to humanize the devastating consequences of the epidemic. Nickel

noted that the current treatment system is built for adults, even though OUD often begins to develop in adolescence. She said that "catch and release" practices in hospitals are far too common: the same person is revived from overdoses on multiple occasions without ever being guided into treatment for OUD. Patients seeking MAT are regularly refused treatment based on insurance companies' fail-first policies and many go on to overdose shortly after. Patients and their families face pervasive stigma about addiction as a decision, not a disease, and must navigate a "troubling constellation of myths and misinformation" about OUD to find effective, evidence-based care for their loved ones. Her organization is working to build awareness and fight against entrenched misconceptions.

During the discussion on research needs, Watanabe suggested more operational research to address logistical and reimbursement challenges related to addiction care. D'Onofrio called for research on starting and retaining patients in treatment, high-risk behaviors in adolescents and how to intervene, harm reduction, reaching young adolescents, and the integration of psychosocial therapies with MAT. Walsh remarked that better medications to treat OUD are needed, but if structural barriers prevent patients from accessing them, then the pharmaceutical industry will not invest in developing them. She added that evidence should be used to eliminate the policies and practices that do *not* work—for example, detoxification without medication and barriers to buprenorphine delivery. Nickel suggested using multidisciplinary approaches to investigate various combinations of medications and psychosocial interventions to treat OUD of different severity levels.

In closing the workshop, Alan Leshner, chair of the Committee on Medication-Assisted Treatment for Opioid Use Disorder, thanked all of the speakers, noting that the presentations and discussions generated a great deal of thought and discussion and will be a valuable supplement to the literature reviews. He reminded attendees that the committee will draft a Consensus Study Report that will undergo the National Academies peer-review process and be released in spring 2019.♦♦♦

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**REVIEWERS:** To ensure that it meets institutional standards for quality and objectivity, this Proceedings of a Workshop—in Brief was reviewed by **Gavin Bart,** University of Minnesota; **Anand Kumar,** University of Illinois at Chicago; **Maia Szalavitz,** American reporter and author; and **Stephen Patrick,** Vanderbilt University. **Lauren Shern,** National Academies of Sciences, Engineering, and Medicine, served as the review coordinator.

**SPONSORS:** This workshop was supported by the National Institute on Drug Abuse and the Substance Abuse and Mental Health Services Administration.

For additional information regarding the workshop, visit nationalacademies.org/OUDtreatment.

Suggested citation: National Academies of Sciences, Engineering, and Medicine. 2018. *Medication-assisted treatment for opioid use disorder: Proceedings of a workshop—in brief.* Washington, DC: The National Academies Press. doi: https://doi.org/10.17226/25322.

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