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CME Objective
After studying this article, you should be able to:

- Take steps to avoid perpetuating racial stigma in the provision of treatment for opioid use disorder

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A Patient-Centered Approach to Opioid Use Disorder

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LESSONS LEARNED AT THE INTERFACE OF MEDICINE AND PSYCHIATRY

The Psychiatric Consultation Service at Massachusetts General Hospital sees medical and surgical inpatients with comorbid psychiatric symptoms and conditions. During their twice-weekly rounds, Dr Stern and other members of the Consultation Service discuss diagnosis and management of hospitalized patients with complex medical or surgical problems who also demonstrate psychiatric symptoms or conditions. These discussions have given rise to rounds reports that will prove useful for clinicians practicing at the interface of medicine and psychiatry.

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Have you ever struggled to provide comprehensive evaluations and management of your patients with opioid misuse? Have you been uncertain about whether you can involuntarily admit one of your patients with persistent opioid misuse? Have you been concerned about recurrent complications of opioid misuse in your patients despite your best efforts? If you have, the following case vignette, historical overview, and discussion should prove useful.

The current opioid epidemic is a public health emergency; it has resulted in abundant morbidity and mortality, lost economic productivity, and a breakdown of important social connections. This crisis affects everyone; therefore, it is essential for clinicians to understand the myriad biological, psychological, and social factors that contribute to opioid misuse. This article describes the neurobiological, psychological, psychosocial, and cultural determinants of opioid use disorder. Approaches to integrated care and public policy interventions that address the opioid crisis are also reviewed.

Case Vignette Part 1

Mr A is a 72-year-old white man with atherosclerotic cardiovascular disease, atrial fibrillation, heart failure with reduced

Clinical Points

- Knowledge about psychosocial determinants of misuse of opioids (eg, structural racism, lack of economic opportunity, social isolation, and trauma) can help clinicians provide patient-centered care for opioid use disorder and facilitate recovery.
- Ready access to naloxone (a pure opioid antagonist that can reverse opioid overdoses) is a key public health strategy to help control the opioid overdose epidemic.
- Individuals with opioid use disorder are more vulnerable to complications from the COVID-19 pandemic; however, streamlined changes such as telemedicine medication-assisted treatment appointments and lessened prescribing restrictions have increased access to care.

ejection fraction (45%–50%), chronic obstructive pulmonary disease, hypertension, hyperlipidemia, and osteomyelitis of the left foot status post recent transmetatarsal amputation who was admitted for management of a left foot ulcer and heart failure exacerbation. At admission, he reported that he had not been taking his medications for the past 3 weeks, including furosemide, metoprolol, and apixaban. He ran out of his medications and reported being unable to get them filled. He was also recently discharged from the anticoagulation clinic due to repeatedly missing appointments. He reported daily heroin use (via intranasal route of administration but denied intravenous use). He had a history of cocaine use, although he denied any current use. He reported smoking marijuana about 1 to 2 times per week. During a prior medical admission, he was evaluated by the substance use disorder treatment team but was not interested in engaging in treatment. His urine toxicology screen at admission was positive for fentanyl and cocaine but negative for opiates or marijuana. Coronavirus disease 2019 (COVID-19) testing was negative, and his brain natriuretic peptide level was elevated at 2,000 pg/mL (normal range, 10–100 pg/mL).

Mr A was initiated on a symptom-triggered opioid withdrawal protocol with buprenorphine based on the Clinical Opiate Withdrawal Scale (COWS),[1] an 11-item scale used to reproducibly rate common signs and symptoms of opioid withdrawal (eg, sweating, yawning, pupil dilation, and gastrointestinal symptoms like nausea and vomiting). Higher total scores on the COWS indicate more symptoms or more severe symptoms. Four hours after admission, Mr A received a score between 5 and 12 (mild withdrawal) and received 2 mg of buprenorphine sublingually. He then received 4 mg 5 hours after admission and 4 mg 9 hours after admission for scores that were between 13 and 24 (moderate withdrawal). The psychiatry consultation-liaison team was consulted to help evaluate and treat the patient. On clinical interview with the psychiatry team, Mr A reported severe symptoms of opioid withdrawal (including muscle aches, joint pain, and abdominal spasms) and was doubled over writhing in discomfort.

What Are the Psychosocial Determinants of Opioid Addiction?

Media coverage of the US opioid crisis has emphasized the "vector model," which casts opioid "pain killers" as toxic medications, physicians as inadvertent facilitators of addiction, and profit-driven pharmaceutical companies as sinister promoters through a combination of pharmaceutical detailing (ie, a 1:1 marketing technique used by pharmaceutical companies to educate a physician about their products in hopes that the physician will prescribe these products more often) and direct-to-consumer advertising.[2,3] Indeed, in the mid 1990s and early 2000s the medical community increasingly focused their attention on the subjective pain reports of their patients in accordance with the guidance of the Joint Commission. Pain was commonly referred to as "the fifth vital sign."[4] In addition, many communities became besieged by a proliferation of "pill mills" that wantonly afforded easy access to large quantities of opioids. In this climate, the frequency and dosing of prescribed opioids to treat pain dramatically increased. A tragic surge in morbidity and mortality followed, and the prescription of narcotics to manage chronic pain started to fall out of favor. Medical facilities across the country reduced or discontinued opioid prescriptions for their patients despite a paucity of data on whether such a rapid taper was safe, leaving many individuals caught in the crossfire of these contrasting prescribing philosophies.[4]

However, the factors that served as root causes for the misuse of opioids and other substances were often overlooked.[5] Driving factors include a lack of economic opportunity, poor working conditions, eroded social capital in depressed communities, systemic racism, hopelessness, and despair. Individuals with opioid use disorder also report increased rates of being a victim of childhood maltreatment,[6] and there has been a dose-response relationship between exposure to childhood maltreatment and accelerated progression from opioid use to dependence.[7] Additionally, the earlier children are exposed to psychoactive substances, the more likely it is they will have problems (and more severe problems) with substance use disorder as adults.[8]

In the 1970s, Khantzian et al[9] proposed "the self-medication hypothesis" which posited the psychodynamic understanding of individuals with substance use disorder. Khantzian and colleagues[9,10] conceptualized opioids as a means of coping with conflicts that encompassed ordinary human pain, disappointment, anxiety, loss, anguish, and other forms of suffering. Fricchione[11] applied the human attachment theory of a British child psychoanalyst, John Bowlby, to his own thinking on substance use disorder: "As mammals our survival advantage is based on secure attachment behavior; and to the extent that addictive substances deflect us from social attachment supports, isolation and solipsism are accentuated and a subsequent loss of resiliency puts us at risk for escalating addiction and maladaptive behaviors."(p175)

In Hari's Ted Talk, "Everything You Think You Know About Addiction Is Wrong,"[12] the journalist asserted that "the

opposite of addiction is connection." Hari further explored how disordered attachment and unhealthy environments can lead to and perpetuate substance use disorder in his book *Chasing the Scream: The First and Last days of the War on Drugs*.[13] Hari described Billie Holiday's challenging life experiences, including parental neglect and abandonment, poverty, sexual assault, prostitution, and incarceration. Following incarceration, Holiday became addicted to heroin. She believed that "it's the one thing that makes me know there is a person called Billie Holiday."[13(p21)]

In 1939, Holiday sang the iconic lyrics of "Strange Fruit," which described the lynching of Black Americans, and it became a Civil Rights anthem. The authorities ordered Lady Day, the nickname saxophonist Lester Young gave to Holiday, to stop singing that song, but she refused. Shortly afterward, the Federal Bureau of Narcotics began a campaign of racist and systematic harassment of Billie Holiday, and the criminalization of her drug use led to her untimely death. Stanley Nelson's documentary, *Miles Davis: Birth of the Cool*,[14] supported the link between racial discrimination and substance use by detailing how Davis used heroin to cope with the discrimination he suffered as a Black man living under Jim Crow laws in the 1940s.[15] Davis became disillusioned by American racism after spending time in France, where he could live and love without restrictions.

Racism insidiously affects all domains of the social determinants of health.[16] Bailey and colleagues[17] define *structural racism* as "the totality of ways in which societies foster racial discrimination through mutually reinforcing systems of housing, education, employment, earnings, benefits, credit, media, health care, and criminal justice."[(p1,453)] Alexander describes the devastating effects of structural racism in drug policy on communities of people of color in her book *The New Jim Crow: Mass Incarceration in the Age of Colorblindness*.[18] Since the start of the punitive US drug control policies called the "war on drugs" in 1971, people of color have disproportionately been targeted, arrested, and incarcerated through overtly racist policies (eg, "stop and frisk").[16] During the 1980s, stiffer criminal penalties were administered for crack cocaine (which was more likely to be used by Black people) than powder cocaine.[19] Although Black Americans are not more likely than White Americans to use illicit drugs, they are 6–10 times more likely to be incarcerated for drug offenses.[20] These systemically racist policies cause downstream effects that worsen economic, educational, and housing opportunities, which increase the incidence and consequences of substance use disorders such as opioid use disorder.[21]

Media coverage of the suburban and rural opioid epidemic of the 2000s symbolically divided the addiction to heroin of urban people of color from the prescription addiction to opioids of suburban and rural White people.[19] Media portrayals of Black people who use substances as criminal deviants and White people who misuse substances as victims of a brain disease support the racialized deployment of the war on drugs. "Color blind" ideologies and the lack of specific discussion on race perpetuate the harmful effects of structural racism.[19]

Like drug policy, therapeutic intervention is also racially stratified due to disparities in access to buprenorphine (more flexibly prescribed than methadone) for people of color relative to White people.[16,20] Racially targeted marketing for buprenorphine took place after its US Food and Drug Administration approval, focusing on suburban middle-class White people with opioid use disorders through the internet (rather than television or radio ads). Nearly 20 years after the introduction of buprenorphine into the market, treatment disparities based on race, ethnicity, and income continue as buprenorphine is most frequently prescribed for White persons and those with private insurance or use of self-pay.[22] The national treatment-focused response to the opioid crisis prioritizes White individuals and categorizes it as a White epidemic.[20] The "White drug war" serves as a microcosm for White privilege as a whole by creating a decriminalized, medicalized conceptualization for White people who use psychoactive substances, while more punitive systems remain for the use of substances by people of color.[20]

What Causes Opioid Use to Turn Into a Disorder?

Koob and Volkow[23] conceptualized substance use disorder as dysregulation of motivational circuits with 3 stages: binging/intoxication, withdrawal/negative affect, and preoccupation/anticipation. The reward provided by the effects of psychoactive substances, the development of incentive salience, and drug seeking involves changes in dopamine and opioid peptides. Conditioned reinforcement of psychoactive substances has a profound effect on response to previously neutral stimuli (eg, seeing drug paraphernalia or the house where drugs are used) to which drugs become paired.

Evolutionary neurobiological adaptations lead people to seek potentially pleasurable and nurturant objects and to avoid painful or life-threatening situations. Reward, mediated by the brain reward circuitry,[24] induces approach behavior.[23] *Incentive salience*, defined as the motivation for reward derived from one's physiologic state and previously learned associations about a reward cue, is relevant to drug use.

Those who develop substance use disorders evolve from a state of impulsivity (ie, using for pleasure/gratification) to one of compulsivity (ie, thereby reducing tension/anxiety), with the drive for drug-using behavior paralleling shifts in reinforcement from positive to negative.[23] During the withdrawal/negative affect stage, negative emotional states are heightened, dysphoria arises, and stress response leads to decreases in the dopaminergic component of the reward system and in recruitment of stress-modulating neurotransmitters (eg, corticotropin-releasing factor and dynorphin).[23] Antireward circuits become engaged as neuroadaptation occurs and produce aversive or stress-like states during withdrawal and protracted abstinence.[25]

The preoccupation/anticipation stage has been thought to be a critical element in relapse, and it characterizes

Table 1. Consequences of Opioid Use Disorder[a]

Medical: physical	Excess morbidity and mortality from cancers (eg, hepatocellular carcinoma secondary to hepatitis C), cardiovascular disease (eg, endocarditis), endocrine disorders (eg, reproductive dysfunction), infectious disease (eg, viral hepatitis, HIV), gastrointestinal side effects (eg, constipation), pulmonary/respiratory illness (eg, worsening of sleep apnea, pneumonia), renal dysfunction (eg, nephrotic syndrome from hepatitis C)
Medical: psychiatric	Exacerbation of underlying mental health conditions and decreased adherence to treatment (eg, medications and appointments), cross-addiction (eg, alcohol, tobacco, other illicit drugs, and prescription drug misuse), excess mortality from suicide, suicide via drug overdose, accidental drug-related overdose, homicide
Social	Breakdown of important social connections (religion, community, friendships, loss of spouse/partner, involvement in Department of Children and Family Services/loss of children)
Legal	Increased crime and criminal charges, incarceration
Economic	Lost work productivity, unemployment, housing instability, food insecurity

[a]Based on Substance Abuse and Mental Health Services Administration[26] and Strang et al.[27]

substance use disorders as chronic relapsing conditions.[23] Executive control over incentive salience is necessary to maintain goal-directed behavior and flexibility of stimulus-response associations, in addition to distinguishing between potentially helpful and harmful attachments. Individuals with opioid use disorder lose control over incentive salience and continue use despite often dire consequences (Table 1).

Does Nature or Nurture Cause Opioid Addictions?

Genetic factors such as susceptibility genes, augmented by environmental factors, contribute to vulnerability to develop opioid use disorder and disease etiology.[28] Relatives of probands with opioid use disorders were found to be 10 times more likely to have opioid-related disorders (adjusted odds ratio [OR] = 10.2, 95% CI, 3.2–32.6).[29] Initiation of drug use may be more influenced by environmental factors, while the transition from use to dependence may be more influenced by genetic factors.[28] Further, genetic factors play a strong role in the response to treatment of opioid addiction.[30]

To study environmental contributions to development of opioid addiction, psychologists Alexander and colleagues built 2 sets of homes for laboratory rats.[13,31] One home was a solitary chamber, while the other home was a rat paradise (called "rat park") complete with wheels, great food, and the companionship of other rats. The rats in the isolated environment used up to 25 mg of morphine per day, an amount consistent with other trials, while the rats in rat park used less than 5 mg per day.[13,31] Adding further support to addictions as an adaptation to one's environment, a study showed that during the Vietnam War almost half of a random sample (n = 943) of US Army soldiers tried narcotics and 20% reported addiction to opioids.[13,32] Within a year of military discharge, usage and addiction rates decreased to the levels observed prior to their deployment.

What Are Commonly Misused Opiate and Opioid Drugs and How Are They Tested?

The term *opiate* refers to naturally occurring drugs (eg, morphine and codeine, which are naturally occurring alkaloids from the opium poppy seed [*Papaver somniferum*]).[33] The term *opioid* refers to semisynthetic (eg, heroin) and completely synthetic agents (eg, methadone and buprenorphine), which have morphine-like actions (eg, analgesia, respiratory depression).

The most used specimen in mental health and substance use treatment settings continues to be urine.[33] Urine tests are easy to administer, are inexpensive, and give instant results. However, they are easy to tamper or substitute, although adulteration of samples can often be detected by the laboratory. Urine tests have a narrow window of detection (often < 3 days). Blood tests detect recent drug use (over the past few hours), thus if an incident is suspected to be the result of drug use, blood samples are preferred to urine. However, blood tests are invasive and more difficult to collect and thus are less frequently used in clinical practice.

Most urine drug screens for opiates detect morphine (also the primary metabolite of heroin and codeine).[33] Table 2 provides a review of commonly misused opiate and opioid drugs and information about urine screening tests for these substances.[34–37] It should be noted that there are agents with potential to cause false positives (eg, codeine from cough syrup, poppy seeds, quinolones, rifampicin, verapamil), and positive tests warrant further confirmatory testing, especially if there are discrepancies between patient report and the laboratory results.

What Medications and Medical Settings Can Treat Opioid Use Disorder?

Opioids are μ-opioid receptor agonists, which cause activation of mesolimbic dopamine reward pathways and euphoria.[38] Table 3 provides medication-assisted treatment options for opioid use disorder. Medication-assisted treatment is well established as a therapeutic strategy that decreases overdose and all-cause mortality among individuals with opioid use disorder.[39] Methadone, a μ-opioid receptor agonist, is available only in federally regulated treatment facilities (eg, outpatient licensed substance use disorder treatment programs, often called "methadone clinics," although buprenorphine is also frequently prescribed), except for its use in outpatient management of chronic pain. Buprenorphine, a partial μ-opioid agonist, κ-opioid receptor antagonist, and nociceptin receptor agonist, can be prescribed sublingually in a monthly administered long-acting injection or as a subdermal implant lasting 6 months. This medication requires a practitioner Drug Enforcement Administration (DEA) waiver to prescribe or dispense and should be started when a patient is withdrawing to avoid precipitated withdrawal symptoms. It should be noted that any physician (eg, internists or psychiatrists) in the inpatient

Table 2. Commonly Misused Opiate and Opioid Drugs and Urine Screening Tests[a]

Drug	Oral Morphine Equivalent Conversion to mg/d (unless otherwise noted)	Duration of Action (h)	Positive Urine Test	Window of Detection on Urine Test	Special Considerations
Fentanyl	0.13 mcg (buccal or sublingual tablets or lozenge/troche) 0.16 mcg (nasal spray) 0.18 mcg (film or oral spray) 0.2 mcg (parenteral [intravenous, intramuscular, or subcutaneous]) 7.2 mcg/h (72-h transdermal patch)	Intravenous: 0.5 to 1 h; intramuscular: 1 to 2 h; transmucosal: related to blood level; transdermal (removal of patch after 72 h with no replacement): related to blood level; fentanyl plasma concentrations decrease by ~50% approximately 17 h after removal of patch; some effects may last ≥ 24 h after removal of patch due to extended half-life and absorption from the skin	Fentanyl	1 to 2 days	Screens negative on opiate screen and can be specifically tested for; respiratory depressant effect of potent opioids such as fentanyl may last longer than analgesic effect
Carfentanil	10,000 times more potent than morphine	Unknown, but likely longer than that of fentanyl	Unlikely to show up on standard urine drug screen	Unknown	Unlikely to show up on standard urine drug screen
Heroin	2 to 5 times more potent than morphine	Analgesic effects typically last 3 to 5 h; peak pleasurable (and toxic) effects are reached usually within 10 minutes via intravenous injection, within 30 minutes via intramuscular injection (or intranasal administration), and within 90 minutes via subcutaneous injection	Morphine, codeine	1 to 2 days	6-monoacetylmorphine (6-MAM) metabolite has short half-life of 36 minutes and is detected in urine only up to 8 h after heroin use
Hydrocodone	1.2 (oral)	4 to 8	Hydrocodone, hydromorphone	2 days	Can be tested for specifically, as it may screen negative on opiate test
Hydromorphone	5 (oral) 17.5 (parenteral [subcutaneous, intravenous])	4 to 5	Possibly avoids detection	1 to 2 days	Can be tested for specifically, as it may screen negative on opiate test
Morphine	1 (oral) 3 (parenteral [subcutaneous and intravenous])	3 to 4 (immediate release)	Morphine, hydromorphone	1 to 2 days	Ingestion of poppy plant/seed may screen positive
Oxycodone	1.5 (oral) 3 (parenteral [subcutaneous and intravenous])	3 to 4 (immediate release)	Oxymorphone	1 to 1.5 days	Can be tested for specifically, as it often screens negative on opiate test
Codeine	0.15 (oral) 0.25 (parenteral [subcutaneous, intravenous])	3 to 6	Morphine, codeine, high-dose hydrocodone	1 to 2 days	Screens positive on opiate test
Tramadol	0.2 (oral)	4 to 6	Often screens negative on opiate test	1 to 4 days	Can be tested for specifically, as it often screens negative on opiate test
Meperidine	0.1 (oral) 0.4 (parenteral [intravenous, intramuscular, or subcutaneous])	2 to 4	Often screens negative on opiate test	Unknown	Can be tested for specifically, as it often screens negative on opiate test; contraindicated in patients taking monoamine oxidase inhibitors due to potentially fatal interaction; serotonin syndrome can occur if mixed with serotonergic agents

[a]Based on Substance Abuse and Mental Health Services Administration,[26] Nielsen et al,[34] Centers for Disease Control and Prevention,[35] Emedicine,[36] and Cone et al.[37]

Table 3. Medication-Assisted Treatment Options for Opioid Use Disorder[a]

Considerations for Prescribers	Methadone	Naltrexone	Buprenorphine
Route of administration	Oral	Oral, intramuscular extended release	Sublingual, buccal, extended-release subcutaneous injection, subdermal implant
Dosing	Daily oral administration as liquid concentrate, tablet, or oral solution from dispersible tablet/powder Initial dosage: 20–30 mg; maintenance dosage (titration often required): 80–120 mg/d	Daily oral administration as 25 mg tablet (limited effectiveness due to poor adherence) or intramuscular injection of 380 mg every 4 weeks To avoid precipitation of opioid withdrawal, patients must be opioid free for a minimum of 7–10 d before starting naltrexone, and patients transitioning from buprenorphine or methadone may be vulnerable to precipitation of withdrawal symptoms for as long as 2 weeks Oral dosage: initial dosage: 25 mg once daily with food; maintenance dosage: if no withdrawal signs occur with the 25-mg dose, the patient may be started on 50 mg once daily with food Oral naltrexone tablets have not been shown to be more effective than placebo for opioid use disorder due to poor patient adherence[26]	Daily sublingual or buccal tablet or film, mean daily dosage of 12–16 mg but approved up to 24 mg if needed; monthly subcutaneous injection of extended-release formulation in abdominal region (300 mg subcutaneous once monthly for first 2 months followed by maintenance dosage of 100 mg subcutaneous per month) for patients treated with transmucosal buprenorphine for at least 1 week Each subcutaneous buprenorphine implant contains 74.2 mg (equivalent to 80 mg of buprenorphine hydrochloride) and should be used only in opioid-tolerant patients; each dose consists of 4 implants inserted subdermally in the inner side of the upper arm, intended to stay in place for 6 months of treatment, then removed
Potential adverse effects	Respiratory depression, bigeminy, bradycardia, cardiac arrest, cardiac arrhythmia, cardiac failure, agitation, confusion, disorientation, dizziness, diaphoresis, hemorrhagic urticaria, biliary tract spasm, anorexia, abdominal pain, constipation, hyperhidrosis, sedation, QT prolongation, sexual side effects, severe hypotension and syncope, neonatal abstinence syndrome, potential for misuse and diversion	Data are relatively limited (particularly long-term outcome data) for pregnant women taking intramuscular extended release; listed in Category C (opioid withdrawal can lead to spontaneous abortion or premature labor and delivery), but each patient and her physician will have to individually make a decision whether to stop this medication during pregnancy and use something else (risking relapse); potential adverse effects: precipitated opioid withdrawal, nausea, anxiety, insomnia, opioid overdose vulnerability, depression, suicidality, muscle cramps, dizziness, syncope, sedation, somnolence, anorexia, decreased appetite, syncope, headache, diarrhea, pharyngitis, hypertension, elevated liver enzymes, skin rash, influenza-like symptoms Potential intramuscular injection side effects: pain, swelling, and induration at the injection site	Pregnant women ideally should use buprenorphine without naloxone, although recent data suggest that buprenorphine-naloxone can safely be used in pregnancy and breastfeeding[43]; potential adverse effects: precipitated opioid withdrawal, hypertension, peripheral edema, anxiety, depression, anemia, bronchitis, bruise, nasopharyngitis, hyperhidrosis, nausea, constipation, insomnia, pain, peripheral edema, respiratory depression (particularly combined with central nervous system depressants, eg, benzodiazepines), misuse/diversion potential, neonatal abstinence syndrome Adverse effects of implant: chest pain, depression, cough, dizziness, excoriation, cough, dyspnea, chills, nerve damage during insertion/removal, local migration or protrusion, and accidental overdose or misuse if extruded; subcutaneous injection can cause injection site pain or itching and death from intravenous injection
Drug-drug interactions	Antiretrovirals, antidepressants, antibiotics, antifungals, anticonvulsants, antiarrhythmics, benzodiazepines, barbiturates, cimetidine, naltrexone	Blocks the effects of standard doses of opioid medications	Drugs that may decrease buprenorphine serum levels: anticonvulsants, antibiotics, and immune suppressants Drugs that may increase buprenorphine serum levels: antibiotics, antidepressants, antifungals, antihypertensives, antiarrhythmics, hormones, sedative/hypnotics, immune suppressants, statins, gastric agents, analgesics, antihistamines, chemotherapies, blood thinners, combination antiretroviral therapies

[a]Based on Substance Abuse and Mental Health Services Administration,[26] Maiti et al,[41] and Smith et al.[42]

setting can prescribe methadone or buprenorphine to prevent withdrawal during an admission if the patient has it prescribed as an outpatient and this information is verified. The only barrier may be if the hospital requires the DEA buprenorphine waiver, though the waiver should not be required for the maintenance of outpatient medications. Ready access to naloxone (a pure opioid antagonist that can reverse opioid overdoses) is a key public health strategy to help control the opioid overdose epidemic.[40] Naltrexone, a μ-opioid receptor antagonist, can be administered orally or in a monthly long-acting injection that can be prescribed by any practitioner without a waiver. To avoid precipitation of opioid withdrawal, individuals using short-acting opioids and long-acting opioids should abstain for 7–10 days and at least 10–14 days, respectively, before beginning naltrexone. Patients transitioning to naltrexone from buprenorphine or methadone may be vulnerable to precipitation of withdrawal symptoms for as long as 2 weeks. The naltrexone long-acting injection can be particularly helpful for those who are not interested in taking either methadone or buprenorphine.[38] However, oral naltrexone tablets have not been shown to be more effective than placebo for opioid use disorder due to poor patient adherence.[26]

How Can Collaborative Care and Integrated Care Treat Opioid Use Disorder?

Collaborative care models feature close collaboration between mental health practitioners and medical/nursing providers, while integrated care systematically coordinates general and mental/substance use health care. These models emphasize increasing access to care for those suffering from opioid addictions. In 2003, an office-based opioid treatment (OBOT) program using a collaborative care model with nurse care managers was started at Boston Medical Center. The program successfully treated patients with opioid use disorder while making efficient use of physicians' time while prescribing buprenorphine.[44] The expansion of OBOT with buprenorphine to 14 statewide community mental health centers increased the overall annual admissions into these programs from 178 to 1,210 over a 5-year period, clearly demonstrating the increased access to care provided by collaborative care models for opioid use disorders.[45] The Vermont Hub-and-Spoke Model of Care for Opioid Use Disorder led to substantial increases in the state's opioid use disorder treatment capacity by creating an integrated health system utilizing hubs (eg, methadone clinics and complex addiction treatment centers) and spokes (eg, nurse-counselor teams with prescribing physicians, pain management clinics, medical homes, corrections, and in-person services).[46] The collaborative opioid prescribing (CoOp) program model developed and implemented at Johns Hopkins Hospital (Baltimore, Maryland) incorporates specialized addiction treatment with comprehensive wrap-around services (such as case management, peer recovery, occupational therapy, vocational training, family engagement, and links to transitional and recovery housing).[47,48]

What Public Policy Interventions Can Help Address Opioid Use Disorder?

Historically, US policy has relegated substance misuse as a societal problem best addressed through punishment.[49] Facing a growing opioid epidemic and recognizing the failure of punitive approaches to substance use disorder, Portugal developed a National Drug Strategy (Comissão para a Estratégia Nacional de Combate á Droga [1998]).[50] In July 2001, Portugal decriminalized possession of all categories of illicit drugs for up to 10 days' supply.[51] The overarching principles of the public health policy include prevention, harm reduction, treatment, social reintegration, supply reduction, and channeling minor drug offenders into the drug treatment system. Portugal made the decision to invest in job programs for those recovering from substance use disorder instead of investing in incarceration. The results have included reductions in problematic use, drug-related harms, and criminal justice system overcrowding. Moreover, major increases in drug use have not materialized.[51] In the United States, law enforcement is mostly opposed to decriminalization, despite its benefits.[52] Morally, the general public sentiment is against decriminalization as well,[53] which constitutes another example of systemic racism due to the more severe impact of the war on drugs on people of color.

Establishing access to treatment is paramount in our battle against the opioid crisis. Sadly, the opening of drug treatment facilities in the United States is often met with public outcries fueled by fears of increased crime and social nuisance. Prevailing attitudes about substance use disorder include intolerance, stigma, and moralistic condemnation.[49] However, the sentiments driving the so-called "not in my backyard" syndrome are not supported by evidence.[54]

Harm-reduction strategies, such as needle exchange programs and supervised injection facilities (SIFs), may seem counterproductive by providing a convenient means for those who are intent on continuing their intravenous (IV) drug use. SIFs, also called safe injection spaces and drug consumption rooms, are legally sanctioned facilities that provide a hygienic space for drug users to inject (previously obtained) drugs under the supervision of medically trained staff.[49] SIFs provide clean needles to reduce infections, immediate medical intervention to reduce overdose death/complications, and access to care. They serve as a stabilizing force for one of the most marginalized populations. There are at least 98 SIFs operating in 66 cities around the world in 10 countries (Switzerland, Germany, the Netherlands, Norway, Luxembourg, Spain, Denmark, Greece, Australia, and Canada).[55] SIFs do not encourage additional drug use, and naive users are not initiated by presence of consumption rooms.[56] SIFs provide enhanced opportunities for health care workers to connect with people who inject drugs and refer them into primary care and substance use disorder treatment.[57] Consistent use of the SIF (Insite) in Vancouver, Canada has been associated with safer practices (eg, less reusing of syringes and outdoor injecting), which can lead to a lower rate of transmission of infectious diseases, such as HIV and hepatitis C,[58] and improvement of public order by

reduction of discarded syringes.[59] SIFs are cost effective and lead to enormous life-years gained for those suffering from opioid use disorder.[56]

Currently, in the United States, SIFs are in violation of federal criminal laws (using narcotics, maintaining a premise for purpose of narcotics use under the Controlled Substance Act).[49] Other criticisms of SIFs include that they are an affront to federal control, governments should not facilitate drug use, and supervised injection sites do nothing to deter drug use or help individuals with opioid use disorder.[60] Evidence from existing SIFs is not consistent with these concerns.[61]

Are There Involuntary Commitment Statutes That Can Be Used to Treat People With Substance Use Disorders?

Thirty-five states and the District of Columbia have a statute that provides a legal means to compel individuals with substance use disorder into treatment through a form of civil commitment.[62] Vermont's law only applies to those with substance use disorders, while Rhode Island's law applies to only those suffering from alcohol use disorder. Many of these statutes contain criteria such as dangerousness to oneself or others, grave disability, lack of decision-making capacity, inability to take care of basic needs, and loss of control/addiction.[62] Involuntary treatment of people with substance use disorders involves a legal process that can be initiated by desperate family members or loved ones.[63] Civil commitment orders are generally issued in a formal court proceeding, wherein a judge weighs the evidence whether life-threatening behaviors justify temporarily depriving an individual of their liberty.[64] Arguments in support of this approach include opportunities to improve diagnostic clarity and select appropriate treatment options, enhance motivation, use diversion to mental health care as an alternative to the criminal justice system, and provide a "safety net" for families.[63] Arguments against civil commitment for those with substance use disorder include the deleterious impact of coercion on the therapeutic alliance and patient self-esteem and the resulting deprivation of individual freedom and autonomy. A common criticism of these procedures is the perception that enforced treatment is at its core a mechanism of state control of deviance rather than medical care.

A recent review[65] documented that Florida (known as the Marchman Act for involuntary treatment of individuals with addiction) and Massachusetts (covered by Section 35 of the Mental Health Code, Mass. Gen. L. ch. 123 Section 35) annually committed thousands of individuals to evaluation and treatment (9,000 and 4,500 on average, respectively). The Massachusetts involuntary addiction treatment protocol is controversial, insofar as individuals may not receive an appropriate standard of medical care following confinement.[66] The state provides no medication-assisted treatment at its facility for men involuntarily committed to treatment for substance use disorder. After achieving abstinence and with it a significantly decreased opioid tolerance in a compulsory program, these patients are at risk for an inadvertent overdose following discharge. This has become especially dangerous since 2012, when the maximum period of commitment was extended to 90 days (Act of October 27, 2011, ch. 142, Section 18, 2011 Mass. Acts 830, 855).

Overall, civil commitment procedures are a poor conceptual fit for individuals with substance use disorder, constituting an awkward hybrid of the judicial/legal and medical models.[63] There are also troubling concerns that such orders may serve manipulative or punitive motives by family members.

How Might the COVID-19 Pandemic Affect Individuals With Opioid Use Disorder?

The COVID-19 pandemic is fueling the next wave of the opioid crisis.[67] Drug overdose deaths in the United States previously set a new record high in 2019 per the Centers for Disease Control (70,980 projected overdose deaths, with over 50% of these deaths involving fentanyl and other synthetic opioids),[68] and increases in opioid deaths are trending (as of this writing) upward in 2020 during the COVID-19 pandemic in the United States. For example, in the state of Vermont, opioid overdose deaths were up 36% in July 2020 compared to July 2019.[69] Vulnerable individuals become more vulnerable during a pandemic.[67] Individuals with opioid use disorder are often alienated from traditional news sources and are less likely to learn about their risk of infection and best practices. They are more likely to use opioids alone (where another person is not around to administer naloxone to reverse the overdose) during the pandemic due to social distancing and lockdown measures.[69] They often suffer from financial insecurity, live in shelters or prison/jail, and have medical comorbidities with reduced access to health care and are less able to follow pandemic-related guidelines. Moreover, individuals with opioid use disorder can be skeptical of authority (eg, due to previous interactions with law enforcement). Disruption of drug supply chains can paradoxically cause overdoses to increase as supplies go down.[67] Drugs are harder to purchase in this climate, and people may substitute drugs with which they are less familiar, thereby increasing risks of adverse effects. There is less access to treatment programs, and residential programs have cut down their number of beds. In addition, there are no in-person groups, and video sessions are difficult for some if they do not have a cell phone or are homeless. Telepsychiatry appointments also may make it harder to detect intoxication (eg, harder to see pupil constriction due to opioid intoxication).

On a more positive note, the easing of restrictions by the Substance Abuse and Mental Health Services Administration and the DEA to decrease COVID-19 infection risk and spread have allowed health care providers unprecedented freedom to prescribe medications for substance use disorder treatment by way of telemedicine (eg, take-home 28-day doses of methadone, new buprenorphine prescriptions after an initial telephone call).[70] The DEA leveraged the public health emergency exception to the Ryan Haight Online Pharmacy Consumer Protection Act (which restricts the prescribing of controlled substances via telehealth with

certain exceptions), which has helped improve access.[71] Several states currently have reciprocity so that physicians do not have to get licensed in other states to treat patients there (though this is unlikely to be permanent). Many hope that these streamlined changes can continue after the pandemic to increase access and ability to meet patients "where they are at." The easing of these restrictions and limitations could become the "new normal" as the pandemic subsides.

Case Vignette Part 2

The symptom-triggered administration of buprenorphine did not appear to be adequately treating Mr A's opioid withdrawal symptoms. The psychiatry consultation-liaison team was consulted and recommended an immediate order of buprenorphine 4 mg and an additional standing dose of buprenorphine 4 mg sublingual tablets 3 times a day to treat Mr A's uncomfortable symptoms of opioid withdrawal. He received a total dose of 26 mg of buprenorphine over the next 24 hours and robustly responded to this intervention. He was much more comfortable and interactive with the interview on hospital day 2 and voiced concerns about becoming "addicted" to buprenorphine, and the medication was gradually tapered as per his request. He did not want to engage with outpatient substance use disorder services, stating that he knew how to manage on his own. His hospitalization lasted for 2 weeks despite resolution of his foot ulcer pain and successful treatment of his heart failure, as it was difficult for social work to find placement for him for subacute physical rehabilitation. Admission requests to multiple local skilled nursing facilities were rejected due to his treatment with buprenorphine (the facilities reported inability to prescribe this medication in the physical rehabilitation setting even on a short-term taper). Following the end of his buprenorphine taper, admission requests were again denied, as the facilities expressed concerns about Mr A's history of psychoactive substance misuse and his potential influence on other patients. Fortunately, the social work department was eventually able to find a nursing home in which Mr A could temporarily stay and complete physical rehabilitation.

Summary

The current opioid epidemic is a public health emergency that has been associated with a variety of poor medical outcomes, including increased risk of mortality. Psychodynamic and socioeconomic factors can clearly play a contributory role in the development of opioid use disorders, along with genetic and neurobiological factors. Structural racism against people of color has preserved punitive approaches and hampered the efforts of public health approaches, and future programs for opioid use disorder should take steps to avoid reproducing racial stigma and criminalization.[16] Policy efforts should specifically address racial/ethnic and economic differences in treatment access and engagement.[22] We described medication-assisted treatments and public policy interventions (eg, harm-reduction strategies, drug court) that have been shown to be effective in treating opioid use disorder and relieve patient suffering. Involuntary commitment statutes, although widely used in the United States, are a poor conceptual fit for substance use disorder. Individuals with opioid use disorder are more vulnerable to complications from the COVID-19 pandemic; however, streamlined changes such as telemedicine medication-assisted treatment appointments and lessened prescribing restrictions have increased access to care. Improved access to treatment through health care policy and education is most essential in our battle against the opioid crisis.

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Disclosure of off-label usage: The authors have determined that, to the best of their knowledge, no investigational information about pharmaceutical agents or device therapies that is outside US Food and Drug Administration–approved labeling has been presented in this article.

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POSTTEST

To obtain credit, go to http://www.cmeinstitute.com/activities/Pages/PCC.aspx to complete the Posttest and Evaluation. A $10 processing fee is required.

1. **Bettina is a 25-year-old Black woman with sickle cell disease who presents to the emergency department reporting severe joint pains. When you consider an opioid prescription for Bettina's pain, which of the following factors would decrease her risk to develop opioid use disorder?**
   a. Bettina experienced childhood maltreatment.
   b. With her illness, Bettina doesn't get out much and has few social connections.
   c. Bettina has no family history of opioid use disorder.
   d. Bettina has used marijuana edibles to relax for the last 12 years but has decided she needs to cut down.
2. **If Bettina were to develop an opioid use disorder and began using illicit opioids, which of the following experiences is more likely for her than for a White individual with opioid use disorder?**
   a. Stigma as someone deserving criminal punishment instead of medical treatment
   b. Implementation of a holistic approach emphasizing that opioids are often used as a means of coping with trauma and that social connection can facilitate recovery
   c. Ready access to medication-assisted treatment
3. **Which of the following public health approaches can help prevent perpetuation of racial stigma in the provision of treatment for opioid use disorder?**
   a. Avoid specific discussions on race
   b. Acknowledge devastating effects of structural racism in drug policy on communities of color
   c. "Color-blind" ideologies
   d. Assumption that all patients have been informed about standard treatment options for opioid use disorder