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Patient barriers and facilitators to medications for opioid use disorder in primary care: an in-depth qualitative survey on buprenorphine and extended-release naltrexone

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INTRODUCTION

The opioid epidemic remains a major public health emergency confronting the United States.[1] Medications for opioid use disorder (MOUD) in the primary care setting, including buprenorphine and extended-release naltrexone (XR-NTX), offer highly effective approaches to reducing the burden of opioid use disorder (OUD).(Lee et al., 2017; Volkow, Frieden, Hyde, & Cha, 2014; Williams et al., 2018) However, linkage and retention to office-based opioid treatment (OBOT) with buprenorphine or XR-NTX has been limited due to numerous systems-, provider-, and patient-level factors.(Teruya et al., 2014; Schwartz et al., 2008)

Patient variables attributed to reduced initiation with OBOT include younger age, poly-substance use, limited experience with buprenorphine, inadequate relief of withdrawal and/or pain symptoms with lower doses of buprenorphine, recent criminal activity, and injection heroin or cocaine use.(Gryczynski et al., 2014; Hillhouse, Canamar, & Ling, 2013; Neale & Tompkins, 2007; Warden et al., 2012) In addition, Caucasian ethnicity, satisfaction with opioid agonist therapy, and preferences to continue opioids for pain were associated with reduced willingness to receive XR-NTX.(Ahamad et al., 2015; Marcus et al., 2017) However, prior in-depth qualitative surveys among recipients of OBOT with buprenorphine

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or XR-NTX suggest that linkage may be influenced by positive rapport with clinic staff, receipt of medications in primary care versus specialty addiction treatment settings, and flexible follow-up visit intervals.(Cheryl Teruya et al., 2014; Uebelacker, Bailey, Herman, Anderson, & Stein, 2016) Systems-level barriers elucidated by patient interviews to linkage with OBOT consisted of disruptions in insurance coverage, cost, and inability to locate a program.(Gryczynski et al., 2014; Neale & Tompkins, 2007; Schwartz et al., 2008; Warden et al., 2012)

The chronic and relapsing nature of OUD also impacts retention in OBOT and risk for overdose death following early termination of buprenorphine and XR-NTX.(Lee et al., 2017; Sordo et al., 2017) As such, factors attributed to early termination of OBOT have been studied and include patient conflicts with providers and staff over medication dose adjustments, shortened follow-up intervals, persistent cravings for opioids due to inadequate dosing of buprenorphine and symptomatic management, and involuntary discharge by program staff due to unanticipated circumstances (i.e., hospitalization, incarceration, family care), or failure to adhere to strict clinic requirements, such as negative urine drug screen results and mandatory self-help group attendance.(Duncan, Mendoza, & Hansen, 2015; Gryczynski et al., 2014; Kelly et al., 2012; C. Teruya et al., 2014) Additional findings among Medicaid enrollees receiving buprenorphine have also identified risk factors for early discontinuation of OBOT, including comorbid substance use disorders, low initial buprenorphine dose, race/ethnicity, opioid overdose history, and inpatient admissions in the preceding six months.(Samples, Williams, Olfson, & Crystal, 2018)

Numerous federal and local efforts have sought to enhance access to MOUD through expanded Medicaid coverage and training for primary care physicians, nurse practitioners, and physician assistants to prescribe buprenorphine.(Abraham et al., 2017; Drug Enforcement Administration, 2018; Volkow et al., 2014) The OUD treatment Cascade also offers a unified quality measurement framework improve engagement and retention on MOUD.(Williams et al., 2018) However, further data are needed to inform how systems may enhance and bridge pragmatic, low-cost, and patient-centered approaches with optimal clinical outcomes (i.e., linkage to care, retention in OBOT), particularly for populations at higher risk of exclusion or discontinuation along the OUD treatment cascade (i.e., people of color, low income, uninsured, unstably housed).

We conducted an in-depth qualitative study to explore knowledge and experiences across the OUD treatment cascade among a diverse sample of adults with OUD admitted for inpatient detoxification in a tertiary public hospital center in New York City. More nuanced elements of patient-centered care undergirding optimal engagement with OBOT were also elucidated, including shared decision making with providers, coordination of care (i.e., referrals to OBOT), experiences in OBOT versus specialty addiction treatment, previous attempts to transition from methadone to buprenorphine or XR-NTX, and voluntary discontinuation of MOUD. Lastly, we assessed personal network attributes relating to exposure to MOUD, including diversion and illicit sales of buprenorphine.

METHODOLOGY

Study Design

We approached patients in the inpatient detoxification unit of Bellevue Hospital in New York City and conducted in-depth, semi-structured qualitative interviews between January and February of 2018. Patients with OUD admitted for inpatient detoxification are typically heroin-involved adults with frequent homelessness, unemployment, limited social supports, who are eligible but historically unlikely to follow-up with in-house OBOT referrals. Patients are offered 3-5 days of withdrawal regimes with methadone or buprenorphine, or may be inducted on MOUD (i.e., methadone, buprenorphine, XR-NTX) and transition to a community treatment program. Eligibility criteria included: 1) over 18 years of age; 2) fluent in spoken English; and 3) diagnosed with OUD by the admitting physician in the inpatient detoxification program. Exclusion criteria included: 1) inability to read and comprehend an informed consent; and 2) severe, unstable psychiatric condition. Patients were approached by study staff in the detoxification unit and invited to a private room to assess for eligibility and obtain informed consent. Reimbursement included a transportation voucher at the time of discharge for their participation in the interview. The New York University School of Medicine Institutional Review Board approved the study protocol.

Data Collection and Analysis

The principal investigator (BT) and research coordinator (SS) conducted all interviews. The interview guide assessed patients' experiences with accessing OBOT in primary care, interactions with OBOT program providers and staff, preferences around MOUD, potential barriers to OBOT post-discharge from detoxification, and suggestions for facilitating access to OBOT.

The interview guide was left purposely open-ended to allow for new information and more detailed explanations of experiences. For example, if participants confirmed that they had been in OBOT in the past, follow up questions around experiences of buprenorphine/XR-NTX induction and dosing, and relationships with clinicians and clinic staff were asked. If participants reported that they had never received OBOT in the past, follow up questions regarding existing knowledge or perceptions of MOUD were asked, as well as questions regarding experiences with other OUD pharmacotherapies, such as opioid agonist therapy with methadone. Participants also completed a background questionnaire of demographics and OUD history. Data collection, analysis, and interpretation occurred simultaneously through an iterative thematic coding process that includes the continuous comparison method and use of grounded theory, the established practice of qualitative research.(Creswell & Clark, 2007; Neale, Allen, & Coombes, 2005) Individual interviews were audio recorded, transcribed, de-identified, and verified for accuracy. Transcribed interviews were entered into *Dedoose*, a secure online platform and powerful analytical tool for qualitative coding and analysis. Preliminary analysis included an individual line-by-line reading of initial interviews by each member of the research team to identify key themes and ideas. These corresponded to codes that were discussed in depth and developed into a codebook after consensus between the principle investigator, research staff and collaborators.

Codes were developed from a grounded theory approach after multiple readings of each transcript and the resulting codebook was applied to all interviews. The codebook was continuously adjusted after group consensus when new themes emerged and coding schemes were assessed for consistency using the constant comparison method. To ensure inter-coder reliability, the principal investigator, research coordinator, and research assistant read and coded each transcript separately and then discussed the findings together until a consensus was reached on the main code findings and all discrepancies were resolved.

The significant thematic categories relevant to study objectives were organized from the data in *Dedoose* as coded text. These major themes emerged as the following categories: systems level experiences with OBOT, induction on buprenorphine and/or XR-NTX, physician relationships, transitions from methadone to buprenorphine or XR-NTX and their comparison, as well as barriers and facilitators to care.

RESULTS

During the study period, 27 patients were approached and 23 agreed to be consented for interview. Subjects were mostly male (78%) with an average age of 44 (range 21-62), admitted for inpatient detoxification of opioids with demographic and clinical characteristics typically associated with reduced engagement with OUD care, including: people of color (n=14), uninsured (n=5), history of injection drug use (n=15), poly-substance use [i.e., alcohol (n=16), crack and/or cocaine (n=12), and benzodiazepine use (n=6)], and hepatitis C infection (n=12).(Hillhouse et al., 2013; Mays, Jones, Delany-Brumsey, Coles, & Cochran, 2017; Samples et al., 2018; Warden et al., 2012) In addition, eight participants were HIV positive, and many self-reported at least one medical (n=13) and/or psychiatric comorbidity (n=11). All participants self-reported use of illicitly obtained buprenorphine and only once participant had been administered XR-NTX by a physician. Key findings of this qualitative study are described in Table 1.

Linkage to OBOT programs

Access to OBOT was challenging in both urban and suburban settings. Respondents typically relied on internet searches and peer networks to locate a program rather than government resources. Several respondents presented to inpatient detoxification after failed attempts to locate OBOT in order to ensure linkage to programs post-discharge (see Table 2). Other participants described harrowing experiences with emergency room visits following overdose from heroin, abrupt termination of prescription opioids as a result of prescription monitoring programs, or cessation of pain management by their providers without any referrals to OBOT (see Table 2). One respondent, who relocated to another city without any resources to enroll in OBOT, was helped by a stranger to locate a program since he assumed the individual to also have OUD "…because of the way he was looking, pathetic. The Suboxone package was hanging out of his pocket." Additional participants unable to transition from methadone to buprenorphine in their methadone treatment programs presented to inpatient detoxification to be inducted to buprenorphine and enroll in OBOT:

> "I'm thinking of cutting from 160mg [methadone]… I talked to my doc [at the methadone program] to switch from methadone to Suboxone, and they wanted me to do it, but because I used heroin the day before I took Suboxone, I got really sick, and switched back to methadone. I have friends that switched from methadone to Suboxone and they all had good experiences."

Similarly, information regarding XR-NTX and providers offering the injections in OBOT was scarce and typically disseminated via peers, advertisements, and in residential treatment programs. Misinformation about XR-NTX included: treatment for alcohol use disorder only, "that if you drink when you're on Vivitrol, you can actually die," and confusion with naloxone (i.e., "if someone overdoses, you can give them that)". Perceived advantages of XR-NTX included: "not putting opioids in your body," "it's kind of like an insurance policy," as being a "cure," "it may help me to get back to normal a lot quicker [versus methadone or buprenorphine]," and the benefits of monthly injections in primary care. Only one participant received XR-NTX and was able to identify programs in which he would be eligible to receive XR-NTX.

Concerns regarding XR-NTX included the cost of monthly injections or co-pays required by some providers to administer injections, that "you could still overdose" if treatment was discontinued, chronic pain issues, and the impact on occasional drug and alcohol use. One participant referred to XR-NTX by his parole officer was deterred from treatment after a friend had attributed their suicidal ideations to XR-NTX:

> "My parole officer almost obligated me to do that [XR-NTX]. I did everything to not go. I got a friend who went and did great for eight months, and then one day, I see the house full of police, and he wants to kill himself. She [the friend's wife] said it [XR-NTX] did something to his brain."

Subjects expressed frustration with abrupt Medicaid coverage termination, obstacles encountered during attempts to reenroll in Medicaid, and restrictions imposed by Medicaid to pharmacies or clinics to reduce unnecessary or inappropriate utilization. Another participant experienced treatment disruption with buprenorphine after his wallet was stolen, losing his Medicaid and identification cards, and being notified by clinic staff that he was ineligible to receive care for OBOT until he could verify his enrollment in Medicaid (see Table 2).

Initiation on buprenorphine/XR-NTX in criminal justice, inpatient detoxification, and residential treatment settings was uncommon, and few respondents successfully transitioned to OBOT programs post-discharge. Concerns for receiving buprenorphine included "getting dope sick coming off of Suboxone," acceptability of buprenorphine in 12-step groups and residential treatment, limited capacity and access to behavioral health services in Medicaid-based OBOT programs, and impersonal or conflictual encounters with clinic staff.

However, participants who had received buprenorphine in primary care described mostly positive experiences with buprenorphine, including the convenience of receiving prescriptions during weekly or monthly follow-up intervals in a primary care setting, access to integrated care for OUD, HIV, Hepatitis C, and depression, perceived improvements in cognitive functioning, quality of life, and general health compared to extended periods of

active opioid use (see Table 2). Only one individual received XR-NTX and relapsed shortly after due to self-discontinuation of treatment.

Perceived benefits of OBOT versus Opioid Treatment Programs

Although perceptions regarding opioid agonist therapy with methadone were not a primary aim of this study, respondents expressed mostly negative experiences with opioid agonist therapy with methadone, including mandatory daily clinic visits, reduced cognitive functioning (i.e., "people nodding out") attributed to elevated doses of methadone or poly-substance use, opinions that methadone "eats your bones" and leads to sexual dysfunction, exposure to drug dealers and actively using peers in proximity to programs, and limited awareness on how to transition from methadone to buprenorphine (see Table 3).

Induction to buprenorphine and XR-NTX

Induction to XR-NTX was perceived as challenging due to the inability to maintain periods of abstinence in an outpatient setting prior to the injection, and lack of familiarity with inpatient settings offering detoxification, induction to XR-NTX, and linkage to OBOT. In contrast, induction to buprenorphine prescribed by a primary care provider was conducted at home without physician supervision and minimal adverse events. Benefits of induction included the quelling of withdrawal symptoms "almost immediately" and experiencing "normalcy." After an extended duration on prescribed opioids for chronic pain leading to cravings and acute withdrawal symptoms, one participant recalled how her primary care provider had recently obtained a DEA waiver to prescribe buprenorphine and successfully transitioned her from opioid analgesics to buprenorphine:

> "I went in and I remember I was in bad withdrawals, shaking, shivering, nausea diarrhea, vomiting, the whole thing. And, it was such an amazing, instantaneous, getting better than even taking a Vicodin or something. It's a miracle drug in a lot of ways if you do the right thing with it."

An adequate dose of buprenorphine was associated with how individuals felt "before using drugs" or as if they had "never used drugs." Routine activities such as "eating a meal" or "hugging my daughter" were experienced almost immediately following induction. One participant described taking too many doses of buprenorphine during induction and experiencing feelings of "flying" or "zooming." For other respondents, buprenorphine was not perceived as a "miracle drug" since they never "reached that level" and endured ongoing cravings and mild withdrawal symptoms with the maximum recommended dose of 24mg (see Table 4).

Most respondents recalled first obtaining buprenorphine from friends, family, actively using peers, and even informal encounters with neighbors or other acquaintances after harrowing experiences of being unable to enroll in OBOT or procure heroin. One participant recalled first receiving buprenorphine from his brother after traveling from New York to Virginia and being unable to locate a drug dealer for additional heroin:

> "One time I had went to Virginia, and I had to take stuff [heroin] with me to survive. But we ended up staying longer than the supply I had. By the grace of God,

> my brother had some Suboxone, and I didn't really know anything about Suboxone, and he gave it to me, and I was like, these things work!"

Another participant described receiving his initial dose of buprenorphine from a neighbor, who then became a reliable source to obtain or share diverted buprenorphine over time if either required additional doses:

> "Yeah, he is my next-door neighbor and he does Suboxone and sometimes he don't have none and he might knock on my door, and he asks me do you have anything. I am kind of sick, I am out and if I have it, I will give it to him…gladly. I won't even charge him. But the day comes when I am sick and if I don't have none, I will knock on his door, and I will ask him, do you have anything, if he has some, he will give it to me because we are friends."

However, transactional relationships with peers who sold buprenorphine to respondents were complicated when asking peers about entry in OBOT programs:

> "They don't tell you where they getting [buprenorphine] from because they think you taking money [selling diverted buprenorphine] from them. They'll tell you they got them so they could make money. So it leaves a large percentage of people that don't know where Suboxone clinics are."

Buprenorphine was also obtained from drug dealers as a last resort when participants were unable to enroll in OBOT programs or receive extra doses from peers. One participant recalled approaching a drug dealer for buprenorphine after relocating to New York City and lacking peer support networks or access to OBOT programs and received instructions to self-administer buprenorphine by "putting it under the tongue to dissolve." However, one respondent who relied on drug dealers to obtain buprenorphine, subsequently relapsed to heroin after his dealer offered free bags of heroin several times. A participant, who had been dependent on prescription opioids, recalled her first episode of heroin use after being unable to enter any OBOT programs or obtain buprenorphine from drug dealers:

> "So my boyfriend went out and said, 'All I could get was heroin, I am sorry. I couldn't find any Suboxone on the street.' He had used heroin years ago. He came home and I sniffed a bag. I was still sick. I wanted the instant relief from Suboxone, and it wasn't coming. He ran out to the store to get the needles, and he came back. It's such a fine, small needle, you barely feel it… He found a vein, and I felt immediately like this whoosh, and it's like nothing you've ever felt in your life."

Criminal-justice involved participants frequently utilized diverted buprenorphine following detention or incarceration due to lack of access to MOUD: "being on Suboxone was amazing since my withdrawal detox in prison was so bad." Induction to buprenorphine was carried out by some respondents by dissolving 2-4mg of buprenorphine in water and snorting it to quell withdrawal symptoms. Snorting a smaller dosage of buprenorphine was preferred to sublingual administration due to its perceived higher potency and lower cost, since the cost of buprenorphine in jail would range from $50-70 per film:

> "The first time I did Suboxone was in 2012, it was in jail. People gave me a strip. I put it in water with a spoon and snorted it. Yea, chinata or "orange". I felt high. I felt good. But I was clean in jail."

For other respondents, illicitly obtained buprenorphine was perceived as a temporary measure, “about once every two weekends,” allowing them to “take breaks” from illicit activities relating to obtaining, using, and recovering from the effects of heroin use. Several respondents obtained buprenorphine “ahead of time” during extended periods of active substance use as “back up” in case they were unable to purchase heroin, or for the occasional “Sunday morning withdrawals” when dealers weren’t available until later in the afternoon. Other participants used buprenorphine intermittently to “get through the day” and fulfill familial or work responsibilities. One respondent described the benefits of intermittent use of buprenorphine since “I probably wouldn’t have went to work if I didn’t have something like that [buprenorphine].” However, such positive experiences with buprenorphine during periods of active substance use were noted by many as important factors influencing future engagement with OBOT.

Retention

Factors attributed to long-term engagement in care included supportive relations with family members, access to subsidized housing, participation in normal every day activities where “I don’t want to be running in, and out. They [family] know when I am high,” improved quality of life and cognitive functioning while abstinence, and reallocating time and money for family rather than ongoing substance use.

Risks of relapse and subsequent discontinuation of buprenorphine treatment were intensified after exposure to actively using peers, including in self-help groups, coping with periods of “boredom”, and inability to transfer OBOT to another city following travel or relocation. Other respondents relapsed to heroin as a result of ongoing poly-substance use. One participant described how crack/cocaine use led him to use heroin to “calm down” while still adherent to buprenorphine, then feeling uncomfortable, and drinking alcohol to “numb out”:

> “I took Suboxone and felt good. But I still go out, and buy crack. And once I start smoking crack, I am gonna need some heroin to calm down, and even though I ain’t sick off heroin, I find myself doing heroin, and now I am feeling sick because I mixed the heroin with Suboxone which turns me to get something to drink, and then get some more heroin. Now, I am just trying to numb out.”

Receipt of buprenorphine and XR-NTX in primary care combined with access to multi-specialty clinical staff, behavioral health services, and administrative support, typically available in specialty addiction treatment settings, were emphasized for ensuring treatment adherence. For instance, the Veterans Affairs network was lauded for reinforcing OBOT with readily available peer support groups, housing placement, employment, hepatitis C treatment services, and longer inpatient detoxification admissions which facilitated linkage or reentry to OBOT:

> “I was in a drug and alcohol support group [in the VA]. They hired me, got me housing, started Hep C treatment, and in treatment for 60 days which I completed.”

Lack of such resources (e.g., social work, counseling) in addition to brief visits with physicians were perceived as “carelessness” in OBOT programs identified as serving primarily Medicaid-clients: “They’re not requiring me to do anything [counseling, self-help

groups] except take Suboxone." One female participant elaborated on her experience in a primarily Medicaid-based OBOT program as lacking meaningful patient-physician relationships, impersonal clinic environments, and "farming out" of patients:

> "You have to wait to see the primary care doctor. You don't create a relationship with anybody, nothing like that. It's like being farmed out into these large medical environments, and there is a certain type of people [other patients]. Everybody is not working, everyone is on disability, nobody is white, I am the only white person. But because I became part of that drug culture and join public assistance, this became something I had to kind of deal with it."

Some participants described even more harrowing circumstances exacerbating treatment disruption and relapse following enrollment in "pill mill" OBOT programs situated in poorer communities frequented by drug dealers to solicit Medicaid clients for their prescribed supplies of buprenorphine. Patients would typically be approached in close proximity to the clinic or in the waiting area. In turn, these supplies of buprenorphine, in addition to a variety of illicit substances, were also available for sale adjacent to the clinic without interference by clinic staff or security:

> "Yeah, it could happen inside…where you know I'm sitting here, and I got my Suboxone in my pocket, and you might come in as a customer and you just might sit next to me, and everything. And we just transactioning under the table, and that's just the way it goes. The clinic staff, they know what's going on but you know they getting paid. They don't care. This is not just one clinic I am telling you about. As soon as you come out from the clinic, you always got guys saying, 'yo you got anything?'" The same respondent emphasized how similar schemes existed in non-OBOT settings in his neighborhood, including Cardiologists offering patients to "get a stress test, and you get $50."

Physician and Staff Relationship

The overt financialization of care was described in several instances among providers serving both Medicaid-enrollees and patients paying out-of-pocket, since "they're [buprenorphine providers] just trying to pay for their next car." Several participants perceived that providers were incentivized to treat abstinent and less medically-complicated patients since "they don't want to lose their money for nothing." Several respondents noted excessive disciplinary measures (i.e., shorter follow-up intervals, reductions in buprenorphine doses, threats of transferring care to methadone) upon submitting a urine positive ("dirty") for opioids:

> "I gave him dirty one time, and he threatened me, told me, you know what if you give me another dirty, I'm gonna put you back on methadone because one time, he found out I was doing heroin while on Suboxone."

Long-term maintenance treatment was also perceived as a profit-driven strategy by some participants since:

> "These people [doctors] are all about the money. And, to be honest with you, I feel they do not want to get you off of it. They do not want to get you off Suboxone

> because that's money… and you give them dirty urine one time, they'll try to up your milligrams on Suboxone. That's what methadone programs do. They're to get it up."

Participants expressed disdain for physicians and staff they felt mistreated them for having a substance use disorder. One interviewee recounted how his physician "wouldn't even make eye contact", while another physician had told a different respondent that, "You can't get attached to people." Another participant described remarks by physicians and staff implying the ease of abstinence:

> "I do think it's really intimidating or sad when in a program, you're treated a certain way. Even yesterday, I met with someone [clinic staff] who was like, 'do you really think you have a problem? Could you just stop?' To me, that's ridiculous. Just stop everything like cold turkey? If I could do that, then I wouldn't be here. That makes me feel bad about myself."

Negative interactions with administrative staff perceived to have "the least power" were also cited by some participants. One participant recalled an encounter with staff in a clinic offering care for uninsured patients with OUD:

> ""The receptionist was acting like the Suboxone was coming right out of her pocket! Like she was paying for it, she wasn't trying to help me. I think that was a real bad experience, coming from that particular clinic because she did nothing to help me. I never even got a chance to talk to the doctor or anything."

Frustration was also expressed with providers who delayed tapering of buprenorphine leading some participants to reduce their daily dosage. In one instance, a participant recalled: ""I tapered myself down because the doctor wouldn't taper me down. When I got off, I felt fine. But a week later, I got 3 bags of heroin, walked into a bathroom, almost overdosed." Another participant self-admitted to inpatient detoxification to taper off of buprenorphine.

Positive attributes of buprenorphine providers included flexibility in scheduling follow-up appointments, promptly addressing administrative needs (i.e., referrals, prior authorizations), "[the doctor] takes time, to talk to me, tell me about my symptoms" during clinical encounters, promotes holistic care practices via encouragement to attend self-help groups and individual counseling.

Discussion:

Willingness to engage with MOUD in primary care settings among this sample of largely heroin-involved inpatient detoxification patients was influenced by a complex array of practical considerations regarding illicit and licit access to buprenorphine, including dissemination of health information and diverted buprenorphine among peer networks, and differential experiences pertaining to MOUD in primary care versus specialty addiction treatment settings. Responses were generally favorable towards OBOT with buprenorphine, yet attitudes and knowledge regarding XR-NTX was limited and only one participant reported having previously accessed monthly XR-NTX injections for OUD.

Patient-level factors

Findings from this qualitative study highlight the benefits and challenges of navigating actively using peer networks to access buprenorphine and OBOT programs. Several respondents described episodes of precipitated withdrawal after being offered buprenorphine without any instructions from peers immediately following methadone or heroin use. However, most patients reported illicitly obtaining buprenorphine for either intermittent or longer-term durations of abstinence and favorable to linkage with OBOT with buprenorphine as a result of prior exposure to diverted buprenorphine. Unobserved induction to buprenorphine was done with brief instructions from actively using peers, family, friends, and even drug dealers, and aligned with findings from Lofwall and colleagues describing drug dealers (58.7%) and peers (31.6%) as the most common source of diverted buprenorphine.(Lofwall & Havens, 2012) Several respondents credited illicit access to buprenorphine as mitigating acute withdrawal symptoms, decreasing risks of procuring additional amounts of heroin or sharing needles. While some individuals obtained buprenorphine illicitly from drug dealers, most relied on friends, family members, and neighbors for medications at no cost. Despite the risks of illicitly obtaining buprenorphine, participants highlighted the importance of such “back-up” supplies of buprenorphine to quell withdrawal symptoms.

Provider-level factors

Providers that offered elements of patient education, access to specialty care (i.e., HIV care, psychiatry), self-help groups, individualized treatment plans, as well as administrative support (e.g., Veterans Affairs network) to secure housing or employment, were distinguished from physicians perceived to be profit-driven by rushing visits or neglecting to link patients to specialty care. Many of these findings overlap with the key components of the patient-centered medical management platform that is generally underutilized among buprenorphine providers due to persistent administrative and clinical barriers.(Kermack, Flannery, Tofighi, McNeely, & Lee, 2017) Innovative health services approaches, such as the Massachusetts Collaborative Care Model, expand the role of nurse care managers, program coordinators, and medical assistants in OBOT to offset clinical and administrative barriers experienced by physicians while also improving clinical outcomes.(LaBelle, Han, Bergeron, & Samet, 2016)

Patients were often frustrated by their providers when requesting to transition from methadone to buprenorphine or safely taper from buprenorphine entirely. Although some studies have reported encouraging findings following careful methadone tapering strategies and protocols to safely induct patients to buprenorphine, clinical decision support could improve provider confidence and patient engagement with safely transitioning from methadone to buprenorphine or XR-NTX.(Glasper, Reed, De Wet, Gossop, & Bearn, 2005; Levin, Fischman, Connerney, & Foltin, 1997) In addition, decision aids should also be offered throughout the OUD treatment cascade, including facilitating linkage to OBOT, offering evidence-based content regarding emerging MOUD, including XR-NTX and injectable forms of buprenorphine, and strategies to reinforce retention and/or reentry in treatment.

Participant dissatisfaction with inflexible clinic protocols, penalizing administrative discharges, shorter follow-up intervals for positive urine drug screen results, and conflicts with clinic staff are aligned with prior findings among patients enrolled in OBOT.(Teruya et al., 2014; Schwartz et al., 2008) Although recent federal regulations have allowed for more flexible dosing parameters, expanded coverage of OBOT, and reductions in prior authorizations, providers remain apprehensive about diversion, overdose risk, and law enforcement agency audits.(Kermack et al., 2017) Other physician surveys suggest that numerous barriers exist in routine buprenorphine prescribing, including insufficient administrative and clinical support, particularly during induction to buprenorphine, inadequate training related to OUD and treatment, medico-legal concerns, and prior authorization requirements.(Gordon et al., 2011; Hutchinson, Catlin, Andrilla, Baldwin, & Rosenblatt, 2014)

Systems-level factors

Although the Affordable Care Act (ACA) expanded coverage for over 1.6 million individuals with substance use disorders and mandated insurers to ease access to addiction treatment in primary care,(Abraham et al., 2017) findings from this study echo prior data describing obstacles among individuals with OUD to accessing and maintaining Medicaid coverage.(Duncan et al., 2015; Hansen, Siegel, Wanderling, & DiRocco, 2016; Mays et al., 2017; Samples et al., 2018) Perceived racial and socioeconomic disparities in OBOT program availability reported previously were also described in this study.(Duncan et al., 2015; Hansen et al., 2016; Mays et al., 2017) Our findings shed light on OBOT programs in underserved neighborhoods serving Medicaid-clients that lack guideline-based care combined with overt solicitations by drug dealers for patients' supplies of buprenorphine in proximity to the clinic. Respondents seeking care in suburban settings also described limited access to OBOT. These results highlight the need for sustained-release formulations of buprenorphine or XR-NTX combined with mobile health interventions to address limited availability of OBOT programs.(Andrilla, Moore, Patterson, & Larson, 2019)

Limitations

Despite the importance of qualitative surveys, the ecological validity and reproducibility of such study findings remain limited. Interviews were conducted among a convenience sample of participants enrolled in a publicly funded inpatient detoxification program in New York City and may not be representative of experiences among the general population of individuals with OUD. Interviews were conducted in early 2018 and may not reflect ongoing efforts by health systems and providers to expand and improve the delivery of buprenorphine for vulnerable patient populations, nor had most of the participants previously enrolled in any form of office-based opioid treatment. Bias and misrepresentation of select topics traditionally stigmatized by providers and patients, such as opioid agonist therapy with methadone, may be exaggerated in such a survey and not reflect actual practices and preferences by patients.

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Table 1.

Overview of findings

Domain	Summary of findings
Linkage to OBOT (Office-based opioid treatment)	Respondents relied on internet search engines and actively-using peers regarding information on MOUD (medications for opioid use disorder) and access to OBOT
	Linkage to OBOT post-discharge from healthcare and criminal justice settings was suboptimal with limited access to case management or patient navigators to facilitate entry to OBOT
	Positive experiences with diverted buprenorphine obtained from peers and drug dealers motivated entry to OBOT
Patient-level factors influencing retention in OBOT	Factors attributed to discontinuation of OBOT included exposure to actively using peers (including in self-help groups) and drug dealers in proximity to OBOT programs, coping with “boredom”, benzodiazepine misuse, inadequate pain management, conflicts with clinic staff, and unstable housing
Provider-level barriers to OBOT	Negative perceptions of providers stemmed from the commercialization of care, strict protocols pertaining to positive urine drug screen results, limited time spent during encounters, lack of access to support staff, and inability to transition patients from methadone to buprenorphine
Systems-level barriers to OBOT	Challenges with insurance coverage for OBOT included unanticipated deactivation of Medicaid coverage and restrictions to pharmacies and clinics that are far away or offer low-quality care
Perceptions of buprenorphine and XR-NTX (extended-release naltrexone) versus methadone	Respondents preferred the destigmatized primary care experience combined with support staff (behavioral health, case management) offered in methadone maintenance treatment
	Negative experiences with methadone elicited high favorability for engagement with OBOT with buprenorphine and XR-NTX
	Positive attributes of XR-NTX included a non-opioid mechanism of action and monthly injections versus daily dosing
	Barriers to XR-NTX included limited information regarding the medication, access to providers offering the injection, cost, chronic pain, maintaining abstinence and adequate management of withdrawal symptoms prior to induction, fear of precipitated depression symptoms, and misinformation about XR-NTX (e.g., for alcohol use disorder only, confusion with naloxone, risk of acute psychosis)

Table 2.

Barriers and facilitators to linkage with OBOT

Domain	Representative quotes
Administrative support in OBOT	"They [OBOT programs] could give me more of a guarantee whether or not it [insurance] would be accepted or if that program is right for you, and not have you waste your time getting copies of this paperwork, this ID, this insurance information, and like for a whole week running around then not getting accepted."
Admission to inpatient detoxification to link with OBOT	"A lot of the numbers I was calling in Long Island, they wouldn't pick up. I would call ten times, leave a message, please call me back, and nobody calls back. They have a flood of people. They are understaffed, underpaid, whatever. So, I kind of gave up on treatment until recently, when I decided let me just try to walk into this place."
Family commitments	"In my thought, it was my daughter who has to go to the hospital or my husband has to. But never thought I had to go to the doctor."
Medicaid plan type	"If you have straight Medicaid [a fee for service plan rather than managed care], they have Suboxone clinics. But they are few and far between, and they're really hard to get into. There is like a four-month waiting list. "
Unanticipated deactivation of Medicaid	"They just shut it off and I had to go through this whole huge thing. I had to go to a Medicaid office several times, I had to keep calling them up and trying to turn it back on."
Missing ID/ documentation	"I know a lot of people who need Suboxone, but since they have no form of ID, there is no way they can go, because I was also one of them."
Facilitators	
Receipt of buprenorphine in primary care	"I was in a doctor's office. He was seeing people for different things. One of things he did was prescribe Suboxone. It was more or less going to see my family provider; you don't get that in methadone clinics."
Seeking OBOT and improved general health	"I want to be with someone [physician] where I work up to do something positive for myself and see the outcome of it. I need tests, like prostate, colon cancer… cause I'm 52 now."
Co-location of OBOT with psychiatric care	"The addiction and the mental health together – I think that was the spark for me trying to move on… I really believe in Ability. It's really helped me. I can get so down and depressed."

Table 3.

Perceptions of opioid agonist therapy with methadone

Domain	Representative quotes
Personal safety	"You'd walk out to the clinic and there would be a roll of dealers… Someone actually slashed me on my neck for a phone."
Impaired cognitive functioning	"I knew I didn't wanna do methadone forever. It's like paralyzing, hypnotizing. It's like being on heroin. I find the Suboxone to be more activating, like a little of high. I don't find it down at all."
Side effects	"Hearing about the after effects of methadone, it turned me away. I don't want to leave one evil, and go to something more evil… we turn from a street junky to a government junky."
Daily dosing of methadone	"The bad part was having to go there every day. And some days I couldn't because of my job. I didn't want them to know I was on methadone. I know I was protected under the law but they could still find reasons to fire me. There were days when I had to open the store at 7AM. Methadone program opens at 9:30, so, I'd be sick all day. Sundays were horrible for me. I was sick all Sunday into Monday morning. I would just kind of ride that out."

Table 4.

Induction experiences with buprenorphine

Domain	Representative quotes
Initial dose too high	"When I took the pills, he gave me 8mg right away; I was so high off of it. I don't know if it might have been better off giving me 2mgs at first seeing how it goes rather than 8mgs … If it doesn't work, then go to 4mg, 6mg. Do the minimal amount possible rather than 'all right let's start you with this 8mg pill'. It wasn't tailored to me."
Persistent cravings	"It [buprenorphine] didn't do anything. I was on three of them a day. I was still having withdrawal symptoms. They weren't horrible. But, it really didn't make me feel good physically at all. For me, it was good in a way. It helped me to build life back. The problem was I was still thinking about heroin everyday."
Precipitated withdrawal	"I was on methadone in Puerto Rico, one of the sons of the owner used to steal the pill from his dad. I didn't know about it but he gave me a couple. That day, I failed to go to the methadone program and realized that shit [buprenorphine] is for that. I was scared because I never taken it before. I cut it in 4 pieces. That shit caught [precipitated withdrawal] the methadone I had. I almost died. So then, I get scared of that pill. I didn't want it anymore. When I came to the U.S. they offered me that, I was like no."