



# HHS Public Access

Author manuscript

*Drug Alcohol Depend.* Author manuscript; available in PMC 2021 May 01.

Published in final edited form as:

*Drug Alcohol Depend.* 2020 May 01; 210: 107958. doi:10.1016/j.drugalcdep.2020.107958.

## ***On my own terms: Motivations for self-treating opioid-use disorder with non-prescribed buprenorphine***

**Sydney M. Silverstein<sup>a</sup>, Raminta Daniulaityte<sup>b</sup>, Shannon C. Miller<sup>c,d</sup>, Silvia S. Martins<sup>e</sup>, Robert G. Carlson<sup>f</sup>**

<sup>a</sup>Center for Interventions, Treatment, and Addictions Research, Department of Population and Public Health Sciences, Boonshoft School of Medicine, Wright State University; 3171 Research Blvd, Kettering, OH, USA

<sup>b</sup>College of Health Solutions, Arizona State University, 425 N 5<sup>th</sup> Street, Arizona Biomedical Collaborative 121, Phoenix, AZ 85004

<sup>c</sup>Dayton VA Medical Center/Middletown CBOC; 4337 Union Road, Middletown, OH 45005

<sup>d</sup>Departments of Psychiatry & Population and Public Health Sciences, Boonshoft School of Medicine, Wright State University; 3171 Research Blvd, Kettering, OH, USA

<sup>e</sup>Columbia University Mailman School of Public Health, 722 West 168th Street 5th Floor Room 509, New York, NY, USA

<sup>f</sup>Center for Interventions, Treatment, and Addictions Research, Department of Population and Public Health Sciences, Boonshoft School of Medicine, Wright State University; 3171 Research Blvd, Kettering, OH, USA

### **Abstract**

**Introduction:** The opioid overdose crisis in the United States has prompted an expansion of treatment services, including pharmacotherapy with buprenorphine. However, many people who use illicit opioids (PWUIO) self-treat their opioid-use disorder (OUD) with non-prescribed buprenorphine (NPB) in lieu of attending formal treatment. The present study aims to qualitatively understand motivations of people who are self-treating their OUD with NPB.

---

**Corresponding Author:** Sydney M. Silverstein; Center for Interventions, Treatment, and Addictions Research, Department of Population and Public Health Sciences, Boonshoft School of Medicine, Wright State University, 3171 Research Blvd, Kettering, OH; sydney.silverstein@wright.edu; 937-344-7138.

Contributors:

R. Daniulaityte, S. Silverstein, S. Martins, and R. Carlson designed the study. S. Silverstein reviewed the literature and wrote the first draft of the paper. S. Silverstein conducted qualitative analyses. R. Daniulaityte and S. Miller contributed to the analytical approach. All authors reviewed, commented, and edited the manuscript. All authors contributed to and have approved the final manuscript.

**Publisher's Disclaimer:** This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Potential conflicts of interest:

SM has provided expert testimony on related subjects.

Conflict of Interest:

No conflict declared.

**Methods:** Qualitative study designed to supplement and contextualize quantitative findings from natural history study of buprenorphine diversion, self-treatment, and use of substance use disorder treatment services. Interviews were audio-recorded, transcribed, systematically coded and analyzed via Iterative Categorization.

**Study Setting:** The Dayton, Ohio metropolitan area in the midwestern United States; a site previously characterized as high impact in the national opioid overdose crisis.

**Participants:** Sixty-five individuals (35 men and 30 women) who met the DSM-5 criteria for OUD (moderate or severe) and had used NPB at least one time in the six months prior to their intake interview.

**Results:** Participants described four key motivators for self-treating with NPB: perceived demands of formal treatment, the desire to utilize non-prescribed buprenorphine in combination with a geographic relocation, to self-initiate treatment while preparing for formal services, and to bolster a sense of self-determination and agency in their recovery trajectory.

**Conclusions:** Use of NPB is a recognized self-treatment modality among PWUIO, with some PWUIO transitioning into sustained recovery episodes or enrollment in formal treatment. Understanding the motivations for opting out of treatment is crucial for improving forms of care for people with OUD.

### Keywords

buprenorphine; non-prescribed buprenorphine; buprenorphine diversion; opioids; opioid use disorder; qualitative research; self-treatment; treatment avoidance

---

### Introduction

The opioid overdose crisis continues to haunt communities across the United States (Pardo et al., 2019; Scholl, Seth, Kariisa, Wilson, & Baldwin, 2018). Responses to this crisis include wider distribution of the overdose-reversing medication naloxone (Guy Jr et al., 2019; Naumann et al., 2019; Wheeler, Jones, Gilbert, & Davidson, 2015) and efforts to increase availability of pharmacotherapies (Saitz, 2019) for opioid use disorder (OUD) (Pardo et al., 2019; Williams, Nunes, Bisaga, Levin, & Olfson, 2019). The availability of pharmacotherapy, which includes treatment with the opioid agonist methadone, partial agonist buprenorphine (Suboxone, Subutex, ZubSolv and generic buprenorphine/naltrexone formulations), or antagonist naltrexone, has expanded across the U.S. (Stein et al., 2012; Turner, Kruszewski, & Alexander, 2015). In some states, this has been supported by the expansion of the public insurance program Medicaid (Mojtabai, Mauro, Wall, Barry, & Olfson, 2019; Sharp et al., 2018; Wen, Hockenberry, Borders, & Druss, 2017), which now includes a provision guaranteeing coverage for mental health and substance use treatment services (Services, 2019). However, pharmacotherapy for OUD remains underutilized (Krawczyk, Feder, Fingerhood, & Saloner, 2017; Volkow & Wargo, 2018).

Research into the underutilization of OUD pharmacotherapy has focused largely on the barriers to treatment access. Noted barriers include lengthy waiting lists (Sigmon, 2014), transportation (Andrilla, Moore, & Patterson, 2019), drug court regulations (Matusow et al.,

2013), challenges in obtaining the necessary Drug Enforcement Agency (DEA) waiver (Andrilla, Moore, & Patterson, 2019; Andrilla, Moore, Patterson, & Larson, 2019), and stigma (McFarling, D'Angelo, Drain, Gibbs, & Rae Olmsted, 2011; Molfenter et al., 2019; Rapp et al., 2006; Wakeman & Rich, 2018). While methadone pharmacotherapy remains strictly regulated (Jaffe & O'Keeffe, 2003), a series of recent legal actions have reduced some of the barriers to accessing treatment with buprenorphine. In 2000, the Drug Abuse and Treatment Act in the United States created opportunities for waived physicians to prescribe buprenorphine as part of an office-based clinical practice. The subsequent Comprehensive Addiction and Recovery Act of 2016 increased the ceiling for the allowed number of unique patients receiving buprenorphine prescriptions per prescriber and extended the variety of professional disciplines eligible to prescribe buprenorphine (Congress, 2016). Despite these efforts to increase access to buprenorphine pharmacotherapy for OUD, recent research has shown that people who use illicit opioids (PWUIO) still perceive access to buprenorphine treatment to be unevenly distributed across geographic locations (Allen & Harocopos, 2016; McLean & Kavanaugh, 2019), and race and social classes (Hatcher, Mendoza, & Hansen, 2018; Krawczyk et al., 2017; Netherland & Hansen, 2017).

In response to perceived treatment barriers, many PWUIO have developed strategies to manage their problematic drug use, including the use of non-prescribed buprenorphine (NPB) as a self-treatment modality (Carroll, Rich, & Green, 2018; McLean & Kavanaugh, 2019). Indeed, use of NPB is becoming prevalent among PWUIO in the United States. A study that utilized Researched Abuse, Diversion and Addiction-Related Surveillance (RADARS) data collected between 2009 and 2013, for instance, found sharp increases in NPB use among people with OUD entering treatment programs in the U.S. (N=10,568). These increases were particularly steep among people who use heroin, with nearly half reporting past month use by the end of 2013 (Cicero, Ellis, Surratt, & Kurtz, 2014). A more recent study utilizing RADARS data collected in 2016 found that 58% of a sample of people with OUD reported use of NPB for reasons consistent with therapeutic use (Cicero, Ellis, & Chilcoat, 2018)

While in the wake of the current opioid overdose epidemic, there is much panic over the diversion of prescription opioids (Daniulaityte, Carlson, & Kenne, 2006; Dart et al., 2015) including buprenorphine (Lofwall & Walsh, 2014), a number of studies have demonstrated that, among people with OUD, the use of NPB is motivated by reasons consistent with its therapeutic purposes (Bazazi, Yokell, Fu, Rich, & Zaller, 2011; Monte, Mandell, Wilford, Tennyson, & Boyer, 2009; Schuman-Olivier et al., 2010; Yokell, Zaller, Green, & Rich, 2011). A smaller number of qualitative studies have suggested some primary motivations for self-treatment with NPB, including the desire to cut back or manage opioid use without full cessation (Furst, 2013; Mitchell et al., 2009), as a backup strategy to manage withdrawal symptoms (Allen & Harocopos, 2016; Silverstein, Daniulaityte, Martins, Miller, & Carlson, 2019), or because formal treatment was perceived to be difficult or burdensome to access (Carroll, Marshall, Rich, & Green, 2017; McLean & Kavanaugh, 2019). It is urgent to better understand more about these motives, and how they impact long-term recovery trajectories. In other words, what drives people to use NPB to self-treat their OUD in lieu of attending formal treatment, and how effective are these strategies?

The present study aims to understand the motivations of people who are self-treating their OUD with NPB. We draw on 65 semi-structured interviews conducted with people living with OUD in the Dayton area (Ohio, USA), who are all participants in a larger, longitudinal study to analyze motivations for and perceptions of the use of NPB as a self-treatment modality. By situating this qualitative analysis within a life-history study, we enrich the existing qualitative literature on NPB self-treatment by showing how this treatment modality transitions into longer-term recovery outcomes.

## 1.1 Study Setting

Research was conducted in the Dayton metropolitan area of Southwestern Ohio. In recent decades, this region has transformed from a hub of industry to an overdose epicenter, as waves of illicit drugs seeped in to take the place of fleeing manufacturing jobs (Alexander, 2017; McLean, 2016; Quinones, 2015). In 2017 Ohio earned the grim credential of having the second-highest overdose death rate in the United States, with an age-adjusted death rate of 46.3 per 100,000 (Centers for Disease & Prevention, 2017). In 2017, Dayton's home county of Montgomery had the highest per capita overdose mortality rate in the state of Ohio, with 521 overdoses, at an age-adjusted rate of 95.24 per 100,000 (Rossen, 2019). These alarming numbers of overdoses can largely be attributed to the dominance of illicit, non-pharmaceutical fentanyl and fentanyl analogues (henceforth NPF) in the drug supply. Local toxicology findings demonstrate that about 90% of all fatal overdose cases in the area tested positive for NPFs (Daniulaityte, Carlson, Juhascik, Strayer, & Sizemore, 2019; Daniulaityte et al., 2017).

Perhaps owing to these grim statistics, treatment of OUD has become increasingly available in the Dayton area. Ohio was one of the states that opted in to the expansion of Medicaid as part of the federal Affordable Care Act, and in the first 18 months of the program, 626,000 individuals enrolled in Ohio Medicaid through the expansion (Seiber & Berman, 2017). While the precise number fluctuates, a recent survey of the licensed treatment providers in and around Montgomery County showed no fewer than 21 Medicaid-accepting treatment centers that offered buprenorphine pharmacotherapy (MCADAMHS & Montgomery County Alcohol, 2019).

## 1. Methods

The 65 qualitative interviews analyzed in this paper form part of a longitudinal, mixed-methods study entitled "A Natural History Study of Buprenorphine Diversion, Self-Treatment, and Use of Drug Abuse Treatment Services" (Daniulaityte, Nahhas, et al., 2019). To be eligible for this study, participants had to be at least 18 years of age, live in the Dayton, OH metropolitan area (Miami Valley), meet the DSM-5 criteria for moderate-severe opioid use disorder, and self-report use of NPB within the last six months. Eligibility determination was a two-stage process that used phone-based pre-screening followed by office-based assessment; all participants who passed both stages of screening were accepted into the study. The study was approved by the Wright State University and Columbia University IRBs.

Baseline structured questionnaires were conducted with 357 eligible participants between May 2017 and October 2018, and ongoing follow-up interviews are being conducted every six months for a period of two years. Baseline data were analyzed using Latent Class Analysis (LCA) to identify three discrete classes characterized by distinct patterns of NPB and other opioid use—a class characterized by heavy heroin/fentanyl use and minimal NPB use, a class characterized by more use of formal treatment and less use of heroin/fentanyl or NPB, and a class characterized by more frequent NPB use and less use of heroin/fentanyl or formal treatment services (Daniulaityte, Nahhas, et al., 2019). The qualitative sample was chosen to proportionally represent the three discrete classes of people using opioids, although a larger percentage of frequent NPB user class was sampled in order to more thoroughly tease out the motives for NPB use. This qualitative sub-sample represented the sociodemographic characteristics of the broader sample, although non-whites were slightly over-sampled (Silverstein et al., 2019).

Qualitative interviews lasted between 60 and 90 minutes, and participants were compensated with a \$40 check or an equal value WalMart gift card. The interview protocol contained broad biographical questions about the individual's opioid use history and health consequences resulting from drug use (such as those related to overdose experiences and drug use-related infections) as well as more detailed questions about experiences with both formal treatment and informal (self-) treatment with NPB. All interviews were conducted by the lead author in a private field office. Interviews were digitally recorded in their totality and then transcribed by a member of the study team, with transcription accuracy verified by the first author. All names mentioned in this paper are pseudonyms.

The lead author coded all 65 transcribed interviews using NVivo 11 software. The coding process began with a thematic analysis that organized information under nodes drawn from key themes of the interview protocol (e.g., drug use history, treatment experiences, self-treatment experiences). Once thematic broad codes were established, the lead author began a close analysis of the information related to formal treatment experiences, self-treatment experiences, treatment barriers, and NPB use. During this phase of the coding process, selected nodes were explored line by line to identify emergent themes, categories, and concepts, which were then analyzed in relation to existing research using iterative categorization (Neale, 2016).

## 2. Results

### 3.1 Participants

65 individuals (35 male and 30 female) were selected from the full study sample for qualitative interviews. The average age at the time of the baseline intake interview was 39.28 years (SD = 10.67). Of the sample, 54 participants (83%) identified as non-Hispanic white, and the remainder identified as African American (n=10, 15.4%) or Hispanic/Latino (n=1, 1.5%). 15 participants (23.1%) completed less than a secondary school education, 17 (27%) had completed secondary school or equivalent, and the remaining 33 (50.8%) had been enrolled in some form of tertiary education (technical school or college).

Most of the sample reported heroin/NPF as their drug of choice, with 61 out of the 65 participants reporting primary use of heroin/NPF during periods of active addiction; the remaining four used non-prescribed pharmaceutical opioids. The group averaged 18.12 years of non-prescribed pharmaceutical opioid use, 13.94 years of heroin use, and 3.49 years of NPF use. All but ten members of the qualitative sample had been injection drug users, with the remainder split between intranasal (nine) and oral (one) as their primary route of drug administration. Based on discussions of recent drug use patterns in the qualitative interviews, methamphetamine was the second most commonly used drug among the sample, with 27 participants reporting daily or near daily use of methamphetamine in addition to heroin/NPF at the time of the interview. Three participants mentioned daily or near daily cocaine use, and two mentioned daily or near daily use of non-prescribed benzodiazepines. Only one participant mentioned daily or near daily alcohol use at the time of the interview.

The vast majority of participants (95.4%) had, at some point in their life, been enrolled in formal treatment for substance use disorder, and 83.1% had been enrolled in buprenorphine pharmacotherapy programs. At the time of their qualitative interview, 25 participants received some form of pharmacotherapy for OUD. Four were receiving methadone, and 20 had prescriptions for buprenorphine, either through specialized opioid treatment programs (14) or prescribing office-based practice (6).

Use of NPB among the sample was largely consistent with therapeutic purposes. It was often used as a temporary solution to alleviate opioid withdrawal symptoms or opioid craving on occasions when the participant was unable to obtain their drug of choice (pharmaceutical opioids, heroin, or NPF). For many participants, use of NPB also factored into a more long-term recovery strategy, either as a gateway to formal treatment, as part of a self-directed detoxification, or as a long-term, self-directed strategy of OUD-management.

Interestingly, a significant majority of our sample (n=54, 83.1%) reported having health insurance at the time of their baseline interview, making them eligible to receive no-cost treatment (including pharmacotherapy with methadone or buprenorphine) through a variety of providers in the area. Yet many participants opted to obtain buprenorphine products off the streets or from friends or acquaintances, purchasing these products for between \$8-15 per 8 mg pill or film. In analyzing our data, we aimed to clarify the factors that mediated the burdens of NPB acquisition and use (financial cost, safety, legal risks), and for some participants made the purchase of NPB appear more viable than formal treatment.

### 3.2 Motivations for self-treatment in lieu of attending formal treatment

#### 3.2.1 Jumping through the hoops: Perceived demands of formal treatment—

A key motivation articulated for self-treatment with NPB was to avoid the ‘burden’ of Intensive Outpatient Programs (IOP). Patients beginning buprenorphine-based pharmacotherapy, those with more severe OUD, or those at higher risk of relapse were often required to attend IOP to receive a buprenorphine prescription. IOP requirements were frequently described by participants as attendance at three-to-five, three-hour groups per week, in addition to meetings with an individual counselor and prescribing doctor. Some, like 35-year old Marco, did not feel that the environment of groups supported his recovery. He explained:



M: I'm not the type of person that needs to be in a room with 30 other drug addicts that are struggling with addiction. I have a hard time focusing on myself and just being in there for the right reasons. I'm bored already; I've already heard what they've got to say.

While it was common advice in treatment centers to “focus on recovery” in the early transition away from opioid use, many participants also expressed frustration at the assumption that they could opt not to work and dedicate all of their time to therapy. 23-year old Amanda, for instance, maintained full-time employment despite her heavy use of heroin/NPF, and expressed frustration at the temporal demands of treatment:

A: I know for me, if I wanted treatment, I couldn't just up and leave [work]. Other people that are addicts don't have a car and a job and a house and they can just get up and go. So, I don't know what's holding them back? They probably just don't want to get clean. But for others, they can't just leave for a month. I've got bills to pay.

Similarly, 62-year old Sue, a former antiques dealer, greatly valued her ability to work. Now retired, Sue enrolled in an intensive outpatient treatment program through her public insurance plan, but quickly grew frustrated with its demands:

S: You have to jump through the hoops with these damn treatment centers. No one wants to go. You can't work because you have to go to three groups a week and go to case management, see the doctor. Who can work? Most of these young people, unless they get a [welfare] check every month they can't do that. Treatment centers are set up for failure here. Totally.

In other cases, required attendance at numerous groups was perceived to incur additional psychological risks. John, for instance, is a 52-year old man with muscular dystrophy, who uses an electric wheelchair. He found the demands of IOP to be particularly challenging given his constrained mobility:

J: Well and with outpatient I don't try to use my wheelchair as an excuse but sometimes there isn't anyone to get my chair out so I can't leave the house. I was at [Treatment Facility] and was fifteen minutes late after going there for a month and they told me I couldn't see the doctor that week and had to go to three meetings that week at 9 [AM] to compensate. If I can't get there by 10, how am I supposed to get to another town by 9? For educated people they are stupid. I can't do everything that everyone else does. I'll try but I am limited.

John's struggles to meet the demands of treatment reinforced the marginalization he felt as an individual with a disability. He turned to a trusted group of friends with experience obtaining NPB for help in self-treating:

J: There is a whole circle of us that get those [Suboxone] because we don't want to start doing heroin again. Some people work so they don't get to go to the doctor. Some people have kids so they can't go to all the meetings. So, we work together.

For participants who were able to build a relatively strong social network of acquaintances that would sell or barter buprenorphine, this strategy could be somewhat sustainable. For 41-

year old Vivian, a combination of work responsibilities and perceived psychological stress of attending treatment motivated her to self-treat with NPB in lieu of attending formal treatment. Vivian, who formerly supported her drug use through sex work, felt that the groups were not only a drain on time, but could also incur an added emotional burden.

V: I think people get it [buprenorphine] off the street just because it's easier. Honest to god I think it's easier. Cause like I said, it's, you walk into that [public transportation terminal], everybody knows you can get anything at the [terminal]. So, you walk in there and people are like yeah, I got this I got that I got Subs [Suboxone] I got Subs. Well it's easy if you've got the money in your pocket, you're gonna' buy it right then and there because you're not gonna' wanna sit in all those groups. You don't wanna sit there and be judged.

Vivian was able to manage her OUD by self-administering NPB for nearly four years. When she lost her job at a local chain grocery store, however, Vivian sought formal treatment, since she no longer had the extra income to buy NPB. Ironically, her joblessness also gave her the time to be able to meet IOP requirements. While she did not enjoy being 'judged' in group, she was able to graduate from her IOP program and, at the time of her interview, was obtaining her buprenorphine prescription from her primary care physician and attending weekly counseling sessions with a therapist.

**3.2.2 Out of sight out of mind: self-administered NPB tapers and geographic cures**—Despite the availability of affordable substance use disorder services, some participants felt that the best option for the cessation of illicit opioid use was getting out of town, a lay strategy known sometimes as a “geographic cure” (Biernacki, 1986). 42-year old Jamey, for instance, struggled to stop using heroin/NPF in Dayton, where his social circles had been built around others who used illicit drugs. He moved out of state, and used a self-administered taper of NPB to ease the transition:

J: I moved to Atlanta just out of sight out of mind. I bought like 20 Suboxone, took those and just rationed them. I started off taking a half of one and then moved to one, back to half of one and just phased myself down. I think I had 20 of them.

SMS: So, you did a taper?

J: Yeah...[...]...I had used Suboxone in the past. A few times-handful. I knew what it was. I bought 20 of them and moved to Georgia and just tapered. I ended up being clean for about 14 months.

The geographic cure was particularly meaningful for participants like Amanda, who began using illicit opioids at 14. Most of her immediate family members had struggled with OUD, and at the time of our interview, three out of her four sisters were dead from opioid use-related causes (overdose, sepsis, endocarditis). Her remaining sister was receiving methadone maintenance and her mother, who had long struggled with opioids and crack-cocaine, had quit using drugs years earlier and moved to a small town in the Southern United States. When Amanda wanted to stop using drugs, she felt that it was crucial for her to get out of Dayton. Her formula was to buy a few Suboxone “strips” (sublingual film) from a friend, and self-administer a Suboxone taper as she traveled by bus to stay with her mother:



A: I did the rest of my dope [heroin] and by the time I got there –I even think I started taking some [Suboxone] on the bus because I was starting to feel sick. [...]Then each day I would just take a tiny sliver [of Suboxone film], I still felt like shit but not as bad as if I didn't have the Suboxone.

Amanda did this on three separate occasions, each time managing to accrue extended periods of time without using heroin/NPF. For Jamey, Amanda, and a number of other participants, a relocation strategy was chosen to remove them from elements that they perceived would trigger their drug use. In these cases, self-administered tapers with NPB helped ease the discomfort of withdrawal as they attempted to start over in a new location.

**3.2.3 I didn't feel like waiting: NPB as treatment gateway**—Among our sample, the self-administration of NPB was a crucial tactic that helped begin recovery episodes when the internal motivation for change gained momentum. Use of NPB could help 'bridge the gap' as participants waited for treatment to become available, acquired the necessary resources, or felt psychologically prepared to enter a treatment setting. Jamey, for instance, was motivated by the upcoming holidays to begin treating his OUD, and did not want to risk losing his drive as he waited for a spot in a treatment program:

SMS: The last time you bought one [Suboxone] off the street was three months ago?

J: Yeah at the end of November before I went into treatment.

SMS: Ah, so you kind of tried to ween yourself off first?

J: Yeah, I bought some on the street. I knew I was getting into the program I just had to wait so I bought some off the street. Then I got into the program.

SMS: How come you wanted to start before you started treatment?

J: I was just at that point where I didn't feel like waiting. With Christmas coming I needed to quit and get off of it.

Jamey's experience shows how NPB can be used to remedy an issue of waiting time, a barrier to treatment entry among people who use drugs (Peterson et al., 2010; Redko, Rapp, & Carlson, 2006; Sexton, Carlson, Leukefeld, & Booth, 2008). Jamey's self-treatment episode was brief, as he was able to quickly transition into a formal program. In the case of a number of other participants, however, NPB helped carry forward the motivation to cease heroin/NPF use into a much longer episode of self-directed abstinence from use of those drugs.

Although she had been using heroin for 12 years, 36-year old Katelyn grew increasingly frightened when NPFs came to dominate the local opioid supply towards the end of 2016 (Daniulaityte, Carlson, et al., 2019). A series of unintentional overdose experiences motivated her to attempt a self-directed detoxification. Katelyn accepted a sublingual Suboxone film from a friend to help with the withdrawal process. This was the first time that she had ever tried a buprenorphine product, and the experience was impactful. In her words,

K: I felt so good. I was so surprised. All this time I was hearing about Suboxone and I had never tried it. I told my mom, and she said I just looked good. I was up, moving around, and I was energized and not sick or high.

Katelyn immediately began to seek out NPB from other acquaintances. Despite having insurance and being eligible to enroll in no-cost treatment and receive a buprenorphine prescription, she opted to obtain her medication illicitly. She explained her choices in the following manner:

K: The only reason why I haven't gotten a prescription for it is because it's too hard. Then with the insurance, they want you to be dirty [test positive for illicit opioids] to receive the Suboxone. You can't just go in there saying you're an addict and get it. You have to be dirty and your levels [of illicit opioids in the tested urine] have to be so high. I'm not doing that. I've tried a few times, and it's hard.

Katelyn believed that she would face challenges attempting to enroll in an outpatient treatment center that prescribed Suboxone, worrying that she would have to present a urine specimen that was "dirty" with heroin/NPF at her intake appointment. However, when the lead author saw Katelyn eight months after the interview, she had enrolled in a formal treatment program and was receiving a prescription for Suboxone. She had grown tired after buying buprenorphine off the streets for nearly 18 months and enrolled in an outpatient treatment program that did not require for her to test positive for heroin/NPF to obtain a buprenorphine prescription.

**3.2.4: On my own terms: Self-determination in treatment initiation**—Autonomy and self-determination were also recurrent themes in discussions of self-treatment practices. Participants expressed, in different manners, the importance of having ownership over the recovery process, and particularly in its initiation. 24-year old Chance, for instance, moved back in with his mother when his drug use grew increasingly problematic. His mother, who had a Suboxone prescription, helped him to slow down his drug use, giving him "a piece every now and then when I was dope sick," and helped him to enroll in a treatment program. Despite this support, Chance delayed entering treatment, explaining his choice in the following terms:

C: It was like the fifth of some month, I want to say January. We went there [Treatment Center], and I did the residential meeting, and then they gave me the option of my bed date. "You can come in this Monday", in two days. But I felt like no one can make you get clean, right? So, if I went in that day, it would be like my mom made me get clean. So, I picked my own bed date to go in. It was like the 24<sup>th</sup> or 25<sup>th</sup>. I went in on my own. I considered that...I went in on my own. You know what I mean? I was ready to do it.

The importance of self-determination was also stressed by Jim, a 38-year old US Army veteran. Jim had insurance benefits through Veteran's Affairs (VA) which he described as "outstanding". But, a year before our interview, he also had an outstanding arrest warrant hanging over his head. Feeling more and more psychologically committed to attending treatment, Jim began experimenting with NPB. Growing more committed to his recovery, Jim turned himself in to the authorities. After serving his time, he transferred immediately to

inpatient treatment services through the VA, where he began buprenorphine pharmacotherapy. When asked if his experiences self-treating with NPB influenced this outcome, he responded:

J: Yeah, it did. Yeah, it definitely did. Cause if I wouldn't've known what to expect without having had it [Suboxone] before, and I knew that, and seeing other people that I know that are on it, people that were actually taking it as prescribed and everything, they're all successful and doing good. So, I, that's what, that's how I decided on whether or not I was gonna' do it.

When prompted to explain why he chose to experiment with NPB self-treatment rather than seeking help immediately through the VA, Jim explained: "Well, I wanted it to be on my terms." For Jim, this self-determination was important to the recovery narrative that he would later craft. Indeed, for many people who use drugs, self-treatment with NPB became not only a strategy for mitigating painful withdrawal symptoms, but a means for creating a sense of agency and self-determination in their recovery processes.

#### 4. Discussion and Conclusions

This paper qualitatively analyzes accounts of self-treatment practices with NPB by people with moderate to severe opioid use disorder in the midwestern region of the United States. Set in an area with expanded Medicaid coverage and a wide array of low- and no-cost treatment options (Abraham et al., 2017; Meinhofer & Witman, 2018), this study provides insight into the motivations for these practices, and insights on how they translate into longer-term recovery outcomes. Participants described four key motivators for self-treating with NPB in lieu of attending formal treatment: perceived demands of formal treatment, the desire to utilize NPB in combination with a geographic relocation, to self-initiate treatment while preparing for formal services, and to bolster a sense of self-determination and agency in their recovery trajectory.

While recent studies have indicated that difficulty in accessing buprenorphine treatment has been a primary motivator in the use of NPB to self-treat OUD (Carroll et al., 2018; Cicero et al., 2018; Lofwall & Havens, 2012), our results indicate a more expansive series of motivations. That lack of access to treatment did not emerge as a primary motivation for self-treatment with NPB may suggest that some progress has been made in increasing access to care, particularly in Ohio and some other regions that benefited from the expansion of public insurance.

Our findings demonstrate that the perceived burdens of treatment programs—particularly in regard to the temporal requirements of IOP-- may undercut their growing accessibility. Indeed, consistent with recent qualitative findings about NPB use in the American Midwest (McLean & Kavanaugh, 2019), our data indicate that PWUIO may perceive self-treatment modalities to be easier and less burdensome than the demands of IOP. What's more, there is some evidence that there is no significant difference in recovery outcomes for people engaged in intensive (three or more therapy sessions weekly) versus standard (one or two sessions weekly) outpatient treatment (McLellan, Hagan, Meyers, Randall, & Durell, 1997; Mitchell et al., 2013). Our data suggest the need for treatment programs to have the capacity

and flexibility to carefully adjust treatment protocols to unique needs of individual patients to maximize therapeutic benefits and eliminate potential burdens associated with intensive outpatient and other programming requirements.

Our findings suggest that the burdens of IOP are not just temporal, but also psychological. We recall Marco's comment that "I'm not the type of person that needs to be in a room with 30 other drug addicts that are struggling with addiction." Indirectly, this comment hints at the means by which social stigma becomes internalized (Bourdieu, 2013) and performed through the rejection of formal treatment (Luoma, 2010; McFarling et al., 2011; Myers, Fakier, & Louw, 2009). Similarly, Vivian expressed anxiety about being 'judged' at group therapy sessions, where she was required to process painful events of her past including the sex-work she engaged in to support her drug use. As has been suggested in prior studies on the role of gender in group therapy (Greenfield, Cummings, Kuper, Wigderson, & Koro-Ljungberg, 2013; Sugarman et al., 2016), Vivian may have experienced less anxiety if she had the option to attend all-female group therapy sessions.

Stigma may also impact the way that people who self-treat their OUD by administering NPB are understood both as legal and medical subjects. As people who divert prescription medications, their practices may be understood, by broader publics, as akin to the practices of prescription opioid misuse that are associated with generating the ongoing opioid epidemic in United States. Because their behaviors are considered unlawful, people who self-treat with NPB may be disqualified from receiving proper medical support for their health issues, as the stigma of their illicit behaviors discredits the forms of lay expertise developed through their drug use histories (Lancaster, Santana, Madden, & Ritter, 2015). As we have shown in this article, the non-prescribed use of buprenorphine is often employed in a therapeutic context among people with OUD and should not be written off or stigmatized as deviant behavior, nor penalized as a criminal act. Recent efforts in Philadelphia, PA (Whelan, 2020) and Vermont (Hirschfeld, 2019) to decriminalize possession of buprenorphine without a prescription are an important step in destigmatizing what our study demonstrates to be a vital tactic of harm reduction in the context of profound market shifts towards increased availability of highly potent synthetic opioids. Our findings also suggest the need for more novel approaches to the implementation of low-threshold OUD treatment protocols, such as mobile buprenorphine induction centers and increased support for home induction (Bhatraju et al., 2017; Krawczyk et al., 2019).

The saturation of local drug markets with highly-potent NPFs may also factor in to participants' desire to use NPB to assist with a geographic cure or as a bridge to treatment (Silverstein et al., 2019). What's more, our research team has found that, among our broader sample of 357 people with OUD, more frequent use of NPB is associated with less frequent overdose experiences (Carlson, Daniulaityte, Silverstein, Nahhas, & Martins, 2020), demonstrating that self-treatment with NPB may be related to improved health outcomes in areas saturated with unpredictably potent NPFs. A recent spike in unintentional overdose deaths (Daniulaityte et al., 2017) may have motivated participants to attempt recovery in a new location. Jamey and Amanda's experiences show that the "geographic cure" is employed as a treatment alternative for PWUIO (Biernacki, 1986; Dilkes-Frayne, Fraser, Pienaar, & Kokanovic, 2017; Granfield & Cloud, 1999). Our findings also demonstrate ways

in which the self-administration of buprenorphine pharmacotherapy has become an additional support strategy and may even form a bridge between treatment programs should individuals decide to seek formal treatment in a new locale. However, short-term use of buprenorphine may leave people more vulnerable to overdose if they re-initiate heroin/NPF use, and number of studies have demonstrated better recovery outcomes among people engaged in longer-term buprenorphine pharmacotherapy versus shorter-term buprenorphine-assisted detoxification (Katz et al., 2009; Williams, Samples, Crystal, & Olfson, 2020; Woody et al., 2008).

The qualitative interviews analyzed in this study demonstrate that PWUIO employ a variety of logics for their self-treatment practices. These logics articulate the complex subjectivities of PWUIO, who must make choices based on the constraints of formal treatment and the legal system while simultaneously preserving a vital sense of agency. Indeed, the desire articulated by participants to begin recovery episodes ‘on their own terms’ is consistent with studies that underlie the importance of recovery narratives for people rebuilding their lives after extended episodes of problematic drug use (Cain, 1991; Hanninen & Koski-Jannes, 1999). However, while autonomy and self-determination may be important to recovery narratives, prior research by our study team has shown some unforeseen risks related to the reactions between buprenorphine and novel NPFs that may curb the effectiveness of self-initiated treatment episodes utilizing NPB (Silverstein et al., 2019).

#### 4.1 Limitations

The study has some limitations. The choices made to selectively seek and avoid treatment, as they appear in our sample, may not be wholly generalizable to other populations of people who use drugs. These choices emerge from a complex calculus of available resources and personal circumstances and are framed by the particular risk environment present in the study setting. In other locations, decisions to self-treat with NPB might be driven by different rationales, such as inaccessibility of treatment or cost of treatment services. More research is needed to better understand the health consequences associated with the self-administration of treatment medications, and the use of other illicit drugs while self-treating OUD.

#### 4.2 Broader impacts

The findings from this study are useful in broader contexts. The qualitative data discussed offer the perspectives of people living with OUD on their self-treatment practices, the justifications used for self-treatment over formal treatment-seeking, and examples of how NPB self-treatment practices may translate into longer-term recovery outcomes. Further, these interviews offer structural critiques of formal treatment for OUD as expressed by the people these interventions are designed to help. As such, the findings should be helpful for both healthcare providers and public health initiatives interested in making treatment options more accessible. These findings are particularly important for treatment providers who are presented with patients already self-treating with NPB. As is evidenced by the story of Katelyn, and others in our sample, PWUIO are often hesitant to present at treatment centers if they have already begun a self-directed regime of maintenance with NPB, or are “clean” from drugs after a stint in jail or prison, because they fear that they will be deemed as

ineligible. We urge treatment providers to consider the fears, anxieties, and stigmas that may inform the decision to self-treat with NPB and encourage self-treatment to be conceptualized as part of a recovery trajectory that may ultimately transition to a formal treatment setting.

## Acknowledgments

Acknowledgements:

The authors would like to thank their participants for sharing their stories with us, as well as research assistants Kara Schaefer and Kylie Getz for their diligent transcription work, and Angela Zaragoza and Avery Moeller for their additional dedicated work on this project.

Funding Source:

This work was supported by the National Institutes of Health/National Institute on Drug Abuse: R01 DA040811 (Daniulaityte, PI). SM's time is supported in part by the Department of Veterans Affairs. The funding source had no further role in the study design, in the collection, analysis and interpretation of the data, in the writing of the report, or in the decision to submit the paper for publication. The contents do not necessarily represent the views of the Department of Veterans Affairs or the United States Government.

Role of Funding Source:

Nothing declared.

## REFERENCES CITED

- Abraham AJ, Andrews CM, Grogan CM, D'Aunno T, Humphreys KN, Pollack HA, & Friedmann PD (2017). The Affordable Care Act Transformation of Substance Use Disorder Treatment. *American Journal of Public Health, 707(1)*, 31–32. doi:10.2105/ajph.2016.303558
- Alexander B (2017). *Glass house: The 1% economy and the shattering of the all-American town*: St. Martin's Press.
- Allen B, & Harocopos A (2016). Non-prescribed buprenorphine in New York City: motivations for use, practices of diversion, and experiences of stigma. *Journal of substance abuse treatment, 70*, 81–86. [PubMed: 27692193]
- Andrilla CHA, Moore TE, & Patterson DG (2019). Overcoming barriers to prescribing buprenorphine for the treatment of opioid use disorder: recommendations from rural physicians. *The Journal of Rural Health, 35(1)*, 113–121. [PubMed: 30339720]
- Andrilla CHA, Moore TE, Patterson DG, & Larson EH (2019). Geographic Distribution of Providers With a DEA Waiver to Prescribe Buprenorphine for the Treatment of Opioid Use Disorder: A 5-Year Update. *The Journal of Rural Health, 35(1)*, 108–112. [PubMed: 29923637]
- Bazazi AR, Yokell M, Fu JJ, Rich JD, & Zaller ND (2011). Illicit use of buprenorphine/naloxone among injecting and noninjecting opioid users. *Journal of addiction medicine, 5(3)*, 175–180. doi:10.1097/ADM.0b013e3182034e31 [PubMed: 21844833]
- Bhatraju EP, Grossman E, Tofighi B, McNeely J, DiRocco D, Flannery M, ... Lee JD (2017). Public sector low threshold office-based buprenorphine treatment: outcomes at year 7. *Addiction science & clinical practice, 72(1)*, 7.
- Biernacki P (1986). *Pathways from heroin addiction: Recovery without treatment*: Temple University Press.
- Bourdieu P (2013). *Distinction: A social critique of the judgement of taste*: Routledge.
- Cain C (1991). Personal Stories: Identity acquisition and self-understanding in Alcoholics Anonymous. *Ethos, 19(2)*, 210–253.
- Carlson RG, Daniulaityte R, Silverstein SM, Nahhas RW, & Martins SS (2020). Unintentional drug overdose: Is more frequent use of non-prescribed buprenorphine associated with lower risk of overdose? *International Journal of Drug Policy*.



- Carroll JJ, Marshall BD, Rich JD, & Green TC (2017). Exposure to fentanyl-contaminated heroin and overdose risk among illicit opioid users in Rhode Island: A mixed methods study. *International Journal of Drug Policy*, 46, 136–145. [PubMed: 28578864]
- Carroll JJ, Rich JD, & Green TC (2018). The more things change: buprenorphine/naloxone diversion continues while treatment remains inaccessible. *Journal of addiction medicine*, 72(6), 459–465.
- Centers for Disease, C., & Prevention. (2017). 2017 Drug Overdose Death Rates. Retrieved from <https://www.cdc.gov/drugoverdose/data/statedeaths/drug-overdose-death-2017.html> from U.S. Department of Health & Human Services
- Cicero TJ, Ellis MS, & Chilcoat HD (2018). Understanding the use of diverted buprenorphine. *Drug and alcohol dependence*, 193, 117–123. [PubMed: 30359928]
- Cicero TJ, Ellis MS, Surratt HL, & Kurtz SP (2014). Factors contributing to the rise of buprenorphine misuse: 2008–2013. *Drug and alcohol dependence*, 142, 98–104. [PubMed: 24984689]
- Congress, U. (2016). Comprehensive Addiction and Recovery Act of 2016. Paper presented at the US Congress <https://www.congress.gov/114/plaws/publ198/PLAW-114publ198.pdf>.
- Daniulaityte R, Carlson RG, Juhascik MP, Strayer KE, & Sizemore IE (2019). Street fentanyl use: Experiences, preferences, and concordance between self-reports and urine toxicology. *International Journal of Drug Policy*, 7f 3–9.
- Daniulaityte R, Carlson RG, & Kenne DR (2006). Initiation to pharmaceutical opioids and patterns of misuse: Preliminary qualitative findings obtained by the Ohio Substance Abuse Monitoring Network. *Journal of Drug Issues*, 36(4), 787–808.
- Daniulaityte R, Juhascik MP, Strayer KE, Sizemore IE, Harshbarger KE, Antonides HM, & Carlson RR (2017). Overdose Deaths Related to Fentanyl and Its Analogs - Ohio, January-February 2017. *MMWR Morb Mortal Wkly Rep*, 66(34), 904–908. doi: 10.15585/mmwr.mm6634a3 [PubMed: 28859050]
- Daniulaityte R, Nahhas RW, Silverstein SM, Martins SS, Zaragoza A, Moeller A, & Carlson RG (2019). Patterns of non-prescribed buprenorphine and other opioid use among Individuals with opioid use disorder: a latent class analysis. *Drug and alcohol dependence*. doi:10.1016/j.drugalcdep.2019.107574
- Dart RC, Surratt HL, Cicero TJ, Parrino MW, Severtson SG, Bucher-Bartelson B, & Green JL (2015). Trends in opioid analgesic abuse and mortality in the United States. *The New England journal of medicine*, 372(3), 241–248. doi: 10.1056/NEJMsa1406143 [doi] [PubMed: 25587948]
- Dilkes-Frayne E, Fraser S, Pienaar K, & Kokanovic R (2017). Iterating ‘addiction’: Residential relocation and the spatio-temporal production of alcohol and other drug consumption patterns. *International Journal of Drug Policy*, 44, 164–173. [PubMed: 28578915]
- Furst RT (2013). Suboxone misuse along the opiate maintenance treatment pathway. *Journal of addictive diseases*, 32(1), 53–67. doi:10.1080/10550887.2012.759860 [doi] [PubMed: 23480248]
- Granfield R, & Cloud W (1999). *Coming clean: Overcoming addiction without treatment*: NYU Press.
- Greenfield SF, Cummings AM, Kuper LE, Wigderson SB, & Koro-Ljungberg M (2013). A qualitative analysis of women’s experiences in single-gender versus mixed-gender substance abuse group therapy. *Substance use & misuse*, 48(9), 750–760. [PubMed: 23607675]
- Guy GP Jr, Haegerich TM, Evans ME, Losby JL, Young R, & Jones CM (2019). Vital Signs: Pharmacy-Based Naloxone Dispensing—United States, 2012–2018. *Morbidity and Mortality Weekly Report*, 65(31), 679.
- Hanninen V, & Koski-Jannes A (1999). Narratives of recovery from addictive behaviours. *Addiction*, 94(12), 1837–1848. [PubMed: 10717962]
- Hatcher AE, Mendoza S, & Hansen H (2018). At the expense of a life: race, class, and the meaning of buprenorphine in pharmaceuticalized “Care”. *Substance use & misuse*, 53(2), 301–310. [PubMed: 29161171]
- Hirschfeld P (Producer). (2019, 3 5, 2020). *Health Experts Push To Decriminalize Addiction Treatment Drug*.
- Jaffe JH, & O’Keeffe C (2003). From morphine clinics to buprenorphine: regulating opioid agonist treatment of addiction in the United States. *Drug and alcohol dependence*, 70(2), S3–S11. [PubMed: 12738346]

- Katz EC, Schwartz RP, King S, Highfield DA, O'Grady KE, Billings T, ... Barksdale W (2009). Brief vs. extended buprenorphine detoxification in a community treatment program: engagement and short-term outcomes. *The American Journal of Drug and Alcohol Abuse*, 55(2), 63–67.
- Krawczyk N, Buresh M, Gordon MS, Blue TR, Fingerhood MI, & Agus D (2019). Expanding low-threshold buprenorphine to justice-involved individuals through mobile treatment: Addressing a critical care gap. *Journal of substance abuse treatment*, 103, 1–8. [PubMed: 31229187]
- Krawczyk N, Feder KA, Fingerhood MF, & Saloner B (2017). Racial and ethnic differences in opioid agonist treatment for opioid use disorder in a US national sample. *Drug and alcohol dependence*, 178, 512–518. [PubMed: 28719885]
- Lancaster K, Santana L, Madden A, & Ritter A (2015). Stigma and subjectivities: Examining the textured relationship between lived experience and opinions about drug policy among people who inject drugs. *Drugs: Education, Prevention and Policy*, 22(3), 224–231.
- Lofwall MR, & Havens JR (2012). Inability to access buprenorphine treatment as a risk factor for using diverted buprenorphine. *Drug and alcohol dependence*. doi:10.1016/j.drugalcdep.2012.05.025
- Lofwall MR, & Walsh SL (2014). A review of buprenorphine diversion and misuse: the current evidence base and experiences from around the world. *Journal of addiction medicine*, 3(5), 315–326. doi:10.1097/ADM.0000000000000045 [doi]
- Luoma JB (2010). Substance use stigma as a barrier to treatment and recovery In *Addiction Medicine* (pp. 1195–1215): Springer.
- Matusow H, Dickman SL, Rich JD, Fong C, Dumont DM, Hardin C, ... Rosenblum A (2013). Medication assisted treatment in US drug courts: Results from a nationwide survey of availability, barriers and attitudes. *Journal of substance abuse treatment*, 44(5), 473–480. [PubMed: 23217610]
- MCADAMHS, & Montgomery County Alcohol, D. A. M. H. S. (2019). Montgomery County Get Help Now. Retrieved from <http://gethelpnowmc.com/>
- McFarling L, D'Angelo M, Drain M, Gibbs DA, & Rae Olmsted KL (2011). Stigma as a barrier to substance abuse and mental health treatment. *Military Psychology*, 23(1), 1–5.
- McLean K (2016). “There’s nothing here”: Deindustrialization as risk environment for overdose. *International Journal of Drug Policy*, 29, 19–26. [PubMed: 26868674]
- McLean K, & Kavanaugh PR (2019). “They’re making it so hard for people to get help:” Motivations for non-prescribed buprenorphine use in a time of treatment expansion. *International Journal of Drug Policy*, 71, 118–124. [PubMed: 31330267]
- McLellan AT, Hagan TA, Meyers K, Randall M, & Durell J (1997). “Intensive” outpatient substance abuse treatment: Comparisons with “traditional” outpatient treatment. *Journal of addictive diseases*, 16(2), 57–84. [PubMed: 9083825]
- Meinhofer A, & Witman AE (2018). The role of health insurance on treatment for opioid use disorders: Evidence from the Affordable Care Act Medicaid expansion. *Journal of health economics*, 60, 177–197. [PubMed: 29990675]
- Mitchell SG, Gryczynski J, Schwartz RP, O'Grady KE, Olsen YK, & Jaffe JH (2013). A randomized trial of intensive outpatient (IOP) vs. standard outpatient (OP) buprenorphine treatment for African Americans. *Drug and alcohol dependence*, 128(3), 222–229. [PubMed: 22999817]
- Mitchell SG, Kelly SM, Brown BS, Schacht Reisinger H, Peterson JA, Ruhf A, ... Schwartz RP (2009). Uses of diverted methadone and buprenorphine by opioid-addicted individuals in Baltimore, Maryland. *The American Journal on Addictions American Academy of Psychiatrists in Alcoholism and Addictions*, 18(5), 346. doi: 10.3109/10550490903077820
- Mojtabai R, Mauro C, Wall MM, Barry CL, & Olfson M (2019). Medication treatment for opioid use disorders in substance use treatment facilities. *Health Affairs*, 53(1), 14–23.
- Molfenter T, Fitzgerald M, Jacobson N, McCarty D, Quanbeck A, & Zehner M (2019). Barriers to Buprenorphine Expansion in Ohio: A Time-Elapsed Qualitative Study. *Journal of psychoactive drugs*, 1–8.
- Monte AA, Mandell T, Wilford BB, Tennyson J, & Boyer EW (2009). Diversion of buprenorphine/naloxone coformulated tablets in a region with high prescribing prevalence. *Journal of addictive diseases*, 28(3), 226–231. doi: 10.1080/10550880903014767 [PubMed: 20155591]

- Myers B, Fakier N, & Louw J (2009). Stigma, treatment beliefs, and substance abuse treatment use in historically disadvantaged communities. *African Journal of Psychiatry*, 12(3).
- Naumann RB, Durrance CP, Ranapurwala SI, Austin AE, Proescholdbell S, Childs R, ... Shanahan ME (2019). Impact of a community-based naloxone distribution program on opioid overdose death rates. *Drug and alcohol dependence*.
- Neale J (2016). Iterative categorization (IC): a systematic technique for analysing qualitative data. *Addiction*, 111(6), 1096–1106. [PubMed: 26806155]
- Netherland J, & Hansen H (2017). White opioids: Pharmaceutical race and the war on drugs that wasn't. *BioSocieties*, 12(2), 217–238. [PubMed: 28690668]
- Pardo B, Taylor J, Caulkins JP, Kilmer B, Reuter P, & Stein BD (2019). The Future of Fentanyl and Other Synthetic Opioids, (RR-3117-RC, 2019). Retrieved from Santa Monica, CA: [https://www.rand.org/pubs/research\\_reports/RR3117.html](https://www.rand.org/pubs/research_reports/RR3117.html)
- Peterson JA, Schwartz RP, Mitchell SG, Reisinger HS, Kelly SM, O'Grady KE, ... Agar MH (2010). Why don't out-of-treatment individuals enter methadone treatment programmes? *International Journal of Drug Policy*, 21(1), 36–42. doi:10.1016/j.drugpo.2008.07.004 [PubMed: 18805686]
- Quinones S (2015). *Dreamland: The true tale of America's opiate epidemic*. Bloomsbury Publishing USA.
- Rapp RC, Xu J, Carr CA, Lane DT, Wang J, & Carlson R (2006). Treatment barriers identified by substance abusers assessed at a centralized intake unit. *Journal of substance abuse treatment*, 50(3), 227–235. doi:S0740-5472(06)00005-5 [pii]
- Redko C, Rapp RC, & Carlson RG (2006). Waiting time as a barrier to treatment entry: Perceptions of substance users. *Journal of Drug Issues*, 36(4), 831–852. [PubMed: 18509514]
- Rossen LM, Bastian B, Warner M, Khan D, Chong Y . (2019). Drug poisoning mortality: United States, 1999–2017. Retrieved from <https://data.cdc.gov/NCHS/NCHS-Drug-Poisoning-Mortality-by-County-United-Sta/rpvx-m2md>.
- Saitz R, Miller SC, Fiellin DA, Rosenthal RN. (2019). Recommended Use of Terminology in Addiction Medicine In Miller SC FD, Saitz R, Rosenthal RN (Ed.), *Principles of Addiction Medicine*, sixth edition (pp. 24–28). Hagerstown, Maryland: Lippincott, Williams, and Wilkins.
- Scholl L, Seth P, Kariisa M, Wilson N, & Baldwin G (2018). Drug and Opioid-Involved Overdose Deaths - United States, 2013–2017. *MMWR Morb Mortal Wkly Rep*, 67(5152), 1419–1427. doi:10.15585/mmwr.mm675152e1 [PubMed: 30605448]
- Schuman-Olivier Z, Albanese M, Nelson SE, Roland L, Puopolo F, Klinker L, & Shaffer HJ (2010). Self-treatment: illicit buprenorphine use by opioid-dependent treatment seekers. *Journal of substance abuse treatment*, 39(1), 41–50. doi: 10.1016/j.jsat.2010.03.014 [PubMed: 20434868]
- Seiber EE, & Berman ML (2017). Medicaid expansion and ACA repeal: evidence from Ohio. *American Journal of Public Health*, 107(6), 889–892. [PubMed: 28426315]
- Services, U. C.f. M. a. M. (2019). Health Benefits and Coverage. Retrieved from <https://www.healthcare.gov/coverage/mental-health-substance-abuse-coverage/>
- Sexton RL, Carlson RG, Leukefeld CG, & Booth BM (2008). Barriers to formal drug abuse treatment in the rural south: a preliminary ethnographic assessment. *Journal of psychoactive drugs*, 40(2), 121–129. Retrieved from <http://www.tandfonline.com/doi/pdf/10.1080/02791072.2008.10400621> [PubMed: 18720660]
- Sharp A, Jones A, Sherwood J, Kutsa O, Honermann B, & Millett G (2018). Impact of Medicaid expansion on access to opioid analgesic medications and medication-assisted treatment. *American Journal of Public Health*, 108(5), 642–648. [PubMed: 29565661]
- Sigmon SC (2014). Access to treatment for opioid dependence in rural America: challenges and future directions. *JAMA psychiatry*, 71(4), 359–360. [PubMed: 24500040]
- Silverstein SM, Daniulaityte R, Martins SS, Miller SC, & Carlson RG (2019). “Everything is not right anymore”: Buprenorphine experiences in an era of illicit fentanyl. *International Journal of Drug Policy*, 74, 76–83. doi:10.1016/j.drugpo.2019.09.003 [PubMed: 31563098]
- Stein BD, Gordon AJ, Sorbero M, Dick AW, Schuster J, & Farmer C (2012). The impact of buprenorphine on treatment of opioid dependence in a Medicaid population: recent service utilization trends in the use of buprenorphine and methadone. *Drug and alcohol dependence*, 123(1–3), 72–78. doi:10.1016/j.drugalcdep.2011.10.016 [PubMed: 22093488]

- Sugarman DE, Wigderson SB, lies BR, Kaufman JS, Fitzmaurice GM, Hilario EY, ... Greenfield SF (2016). Measuring affiliation in group therapy for substance use disorders in the Women's Recovery Group study: Does it matter whether the group is all- women or mixed- gender? *The American Journal on Addictions*, 25(1), 573–580. [PubMed: 27647710]
- Turner L, Kruszewski SP, & Alexander GC (2015). Trends in the use of buprenorphine by office-based physicians in the United States, 2003–2013. *The American Journal on Addictions*, 24(1), 24–29. [PubMed: 25823632]
- Volkow ND, & Wargo EM (2018). Overdose prevention through medical treatment of opioid use disorders. *Annals of Internal Medicine*, 169(3), 190–192. [PubMed: 29913514]
- Wakeman SE, & Rich JD (2018). Barriers to medications for addiction treatment: how stigma kills. *Substance use & misuse*, 55(2), 330–333.
- Wen H, Hockenberry JM, Borders TF, & Druss BG (2017). Impact of Medicaid expansion on Medicaid-covered utilization of buprenorphine for opioid use disorder treatment. *Medical care*, 55(4), 336–341. [PubMed: 28296674]
- Wheeler E, Jones TS, Gilbert MK, & Davidson PJ (2015). Opioid overdose prevention programs providing naloxone to laypersons—United States, 2014. *MMWR. Morbidity and mortality weekly report*, 64(23), 631. [PubMed: 26086633]
- Whelan A (2020, 1 292020). “Philly DA Larry Krasner will no longer prosecute people for possession of an addiction treatment drug”. *The Philadelphia Inquirer*. Retrieved from <https://www.inquirer.com/health/opioid-addiction/buprenorphine-krasner-district-attorney-philadelphia-decriminalization-20200129.html>
- Williams AR, Nunes EV, Bisaga A, Levin FR, & Olfson M (2019). Development of a Cascade of Care for responding to the opioid epidemic. *The American Journal of Drug and Alcohol Abuse*, 45(1), 1–10. doi:10.1080/00952990.2018.1546862 [PubMed: 30675818]
- Williams AR, Samples H, Crystal S, & Olfson M (2020). Acute care, prescription opioid use, and overdose following discontinuation of long-term buprenorphine treatment for opioid use disorder. *American Journal of Psychiatry*, 177(2), 117–124. [PubMed: 31786933]
- Woody GE, Poole SA, Subramaniam G, Dugosh K, Bogenschutz M, Abbott P, ... Potter JS (2008). Extended vs short-term buprenorphine-naloxone for treatment of opioid-addicted youth: a randomized trial. *Jama*, 300(11), 2003–2011. [PubMed: 18984887]
- Yokell MA, Zaller ND, Green TC, & Rich JD (2011). Buprenorphine and buprenorphine/naloxone diversion, misuse, and illicit use: an international review. *Current drug abuse reviews*, 4(1), 28–41. Retrieved from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3154701/pdf/nihms314965.pdf> [PubMed: 21466501]

### Highlights

- Despite an increasing availability of opioid-use disorder treatment, including buprenorphine pharmacotherapy, many people with opioid use disorder may still opt to self-treat with non-prescribed buprenorphine in lieu of attending formal treatment.
- Some key motivations for self-treatment with non-prescribed buprenorphine include the perceived demands of formal treatment, the desire to utilize non-prescribed buprenorphine in combination with a geographic relocation, to self-initiate treatment while preparing for formal services, and to bolster a sense of self-determination and agency in their recovery trajectory.
- Use of non-prescribed buprenorphine is used as a self-treatment modality among people who use illicit opioids, and may transition into sustained recovery episodes or enrollment in formal treatment.