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## Harm reduction agencies as a potential site for buprenorphine treatment

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### Abstract

**Introduction**—Harm reduction agencies complement addiction treatment by providing diverse services that improve the health of people who use drugs. Buprenorphine maintenance treatment (BMT) is an effective opioid addiction treatment that may be provided from flexible settings, potentially including harm reduction agencies. This study investigated attitudes toward different potential sites for BMT (harm reduction agencies, general medical clinics, and drug treatment programs) among harm reduction clients.

**Methods**—Using computer-based interviews, participants indicated preferred potential site for BMT (harm reduction agency, drug treatment program, or general medical clinic), interest in BMT by potential site, motivation for treatment, and barriers to BMT. We used multivariable logistic regression to determine factors associated with harm reduction agency preference.

**Results**—Of 102 opioid users, the most preferred potential site for BMT was a harm reduction agency (51%), while fewer preferred general medical clinics (13%), drug treatment programs (12%) or were not interested in BMT (25%). In multivariable analysis, experiencing 1 barrier to BMT was strongly associated with preferring harm reduction agencies (aOR = 3.39, 95% CI: 1.00 – 11.43).

**Conclusion**—The potential to initiate BMT at harm reduction agencies is highly favorable among harm reduction clients, especially among those experiencing barriers to BMT. Offering BMT at harm reduction agencies could improve access to treatment, but studies are needed to determine safety and efficacy of this approach.

### Keywords

buprenorphine; harm reduction agencies; access to care; opioid addiction

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#### Authors' Contributions

All authors contributed to research conception and design, AC conducted data collection. ADF and COC performed data analysis. ADF wrote the first draft of the manuscript, and all authors contributed to revisions.

## Introduction

Despite the severe consequences of the opioid addiction epidemic, few opioid users are engaged in addiction treatment in the US health care system. In 2010, nearly 20,000 Americans died from opioid-related overdoses highlighting the urgent need for treatment and prevention services.<sup>1</sup> Also in 2010, approximately 2.3 million Americans met criteria for opioid use disorder; however, fewer than 20% were admitted to opioid addiction treatment facilities, leaving a large treatment gap.<sup>2,3</sup> Though availability and costs often limit access to treatment, mistrust or stigma within the health care system can also prevent opioid users from seeking treatment.<sup>4</sup> Therefore, to improve engagement in opioid addiction treatment, the preferences of out-of-treatment opioid users must be considered.

Harm reduction agencies play a critical role in engaging people who use drugs and assisting them in adopting healthier behaviors. Traditionally, the philosophy of harm reduction, which accepts that drug use may continue as individuals adopt other healthier behaviors, and the medical model of addiction treatment, which typically only emphasizes goals of abstinence, have been at odds.<sup>5</sup> Nonetheless, harm reduction agencies provide a safe and trusted space, and may offer health care services to individuals who are unable or unwilling to access traditional health care providers. In the US, harm reduction agencies are the main source of sterile syringe exchange for injection drug users, which may be provided at drop-in centers or through community outreach. Many agencies also provide case management, group and individual mental health services, testing for HIV and Hepatitis A, B, or C Virus, harm reduction education, overdose prevention training, and a variety of peer-delivered services. In 2009, there were 184 known syringe exchange programs in 36 states, Washington DC, and Puerto Rico.<sup>6</sup>

Buprenorphine maintenance treatment (BMT) is an effective opioid addiction treatment that may be more acceptable to patients than methadone maintenance.<sup>7,8</sup> Because regulations regarding BMT allow for flexibility in treatment settings, we were interested in the potential of offering BMT on-site at harm reduction agencies. Integrating harm reduction and addiction treatment could better reach out-of-treatment opioid users than current approaches, but due to the philosophical differences between harm reduction and addiction treatment, harm reduction clients may not desire onsite addiction treatment. Therefore, we investigated harm reduction clients' attitudes toward BMT, including the favorability of potential onsite BMT at harm reduction agencies.

## Methods

The Albert Einstein College of Medicine and Washington Heights CORNER Project (WHCP) collaborated on this cross-sectional study. The study was exempted by affiliated institutional review boards.

## Setting

WHCP is a community-based harm reduction agency that provides syringe exchange and social services within a New York City neighborhood that is severely impacted by drug use, HIV/AIDS, and Hepatitis C virus. From its office, WHCP provides: sterile syringes; case

management; referrals for medical, dental, or addiction treatment; HIV risk reduction education and interventions; and harm reduction counseling. WHCP serves more than 1,500 clients, the majority of whom are male, 40–49 years old, and inject drugs.

### Participants

Between July and August 2013, WHCP staff informed all clients receiving office-based services about the study. Interested clients were referred to research staff who then described the study and obtained written informed consent. Eligibility criteria included: 1) 18 years of age; 2) English or Spanish fluency; 3) history of opioid use; and 4) client of WHCP.

### Data Collection

Participants completed a 25-minute 100-item interview in a private room at the WHCP office. Interviews were conducted in English or Spanish using audio computer-assisted self-interview (ACASI) technology, which plays an audio recording of questions as items are displayed on a computer screen. Participants entered responses directly on the computer. After completing the interview, participants were compensated with \$10 in cash and a \$5 transit pass.

### Measures

Interviews focused on preference for treatment site, motivation for treatment, and barriers to BMT. No actual treatment (BMT or otherwise) was offered during this study; therefore, all preferences were hypothetical. Because of familiarity and preference for the brand name among opioid users, throughout the study, we used “Suboxone” to refer to BMT.

### Preference for treatment site

Preference for treatment site was assessed in two ways: preferred potential site for BMT and interest in BMT by potential site. The main question assessing preferred potential site was, “If I had the choice, I would choose to get Suboxone treatment at (choose your preferred site)”. Multiple-choice responses included a drug treatment program, a general medical clinic, a harm reduction agency, or “I would not choose to get treatment with Suboxone”. Interest in BMT by potential site was assessed by repeating the statement, “I would be interested in starting treatment with Suboxone at a \_\_\_\_\_,” three times referring to a different site at each repetition (drug treatment program, general medical clinic, or harm reduction agency). Agreement with each statement was assessed on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree).

### Motivation

Motivation for opioid addiction treatment was assessed using three items that were adapted from the Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES).<sup>9</sup> These items assessed problem recognition, desire to make changes, and taking action to reduce opioid use, which are important steps in changing addiction-related behaviors. Agreement with each statement was assessed on a 5-point Likert scale, and scores from the three items were summed to give a total score (out of 15).

## Barriers to BMT

We measured barriers to BMT by adapting a previously published questionnaire to ask about self-perceived barriers to BMT.<sup>10</sup> Participants were asked whether the following seven barriers had prevented them from receiving BMT (if they had wanted to start or continue treatment): inability to pay, unsure of where to obtain care, lack of transportation, having been treated poorly at the clinic, wanting to avoid being seen at the clinic, distrusting doctors, or lack of child care. Responses to each item were dichotomous (yes/no).

## Covariates

Other data collected during the interviews included: demographic characteristics (age, gender, race/ethnicity, education, health insurance); current and lifetime substance use (from the Addiction Severity Index<sup>11</sup>); current and lifetime buprenorphine use (prescribed and illicit); experiences with opioid addiction treatments (methadone maintenance, residential or inpatient, or self-help groups); awareness of buprenorphine and overall interest in BMT (on a 5-point Likert scale).

## Data Analysis

First, we determined preferred potential site for BMT using the main preference question and compared mean interest in BMT by potential site. We used a general estimating equation (GEE) to test for differences in interest at the three potential sites. Next, we explored factors that were associated with preferred potential site by using multivariable logistical regression. We excluded participants who were unaware of BMT or answered that they would choose not to get treatment with Suboxone. The dependent variable was preference for BMT at harm reduction agencies (dichotomous, yes/no). Covariates were chosen for the regression model if they were associated with the dependent variable ( $p < 0.15$ ) in bivariate testing (chi-square or ANOVA for three category comparison). The final model included gender, having at least a high school education, injection drug use, illicit buprenorphine use, sedative use, and experiencing 1 barrier to BMT.

## Results

Of 109 syringe exchange participants completing questionnaires, seven had no history of regular lifetime opioid use and were excluded. Of the 102 remaining, the median age was 47 years, and most participants were male (73%), high school graduates (77%), had Medicaid (68%), and had used heroin regularly in their lifetime (98%). Active substance use was common, with 80% reporting heroin use in the past 30 days, 58% with cocaine use, 54% with methadone use, and 44% with benzodiazepine or other sedative use. Most reported a history of injection drug use (71%) (see Table 1).

Overall, 64% of participants had tried buprenorphine (illicit or prescribed), 9% had only used prescribed buprenorphine, 23% had used both illicit and prescribed buprenorphine, and 32% had only used illicit buprenorphine. In the 30 days preceding the study, 4% had been prescribed buprenorphine, and 19% had taken illicit buprenorphine.

Harm reduction agencies were the potential site preferred by most (51%) participants. Drug treatment programs (12%) and general medical clinics (13%) were preferred by fewer participants. Among the 73 participants with a preferred potential site, interest for BMT was greatest at harm reduction agencies ( $3.89 \pm 0.99$ ) in comparison to general medical clinics ( $3.40 \pm 1.15$ ) or drug treatment programs ( $3.22 \pm 1.19$ ); these differences were statistically significant ( $p < 0.01$ ).

Among the 73 participants with a preferred potential site, there were differences in sociodemographic and clinical variables between the groups that preferred harm reduction agencies, general medical clinics, or drug treatment programs as a potential site for BMT. In bivariate analysis, having at least one barrier to BMT (OR = 4.61, 95% CI: 1.59 – 13.3) was significantly associated with preference for BMT at harm reduction agencies, while motivation for treatment (OR = 1.10, 95% CI: 0.93 – 1.30) was not. In the multivariable model, after adjustment for other covariates, having at least one barrier to BMT (aOR = 3.39, 95% CI: 1.00 – 11.43) and at least a high school education (aOR=3.59, 95% CI: 1.05 – 12.35) remained significantly associated with preferring harm reduction agencies (see Table 3).

## Discussion

Among clients of a NYC harm reduction agency, most chose a harm reduction agency as their preferred potential site for buprenorphine maintenance treatment (BMT). Those experiencing barriers to BMT had among the strongest preference for harm reduction agencies and this association remained significant in multivariable analysis. Our findings suggest that offering BMT at harm reduction agencies, which are a major provider of services to people who use drugs in the United States, would be highly favorable for their clients, and this approach could fill a gap in care for those experiencing barriers to BMT.

Our study contributes to the BMT access literature, which has mostly focused on barriers to providers prescribing BMT. Many authors have suggested that costs or lack of availability has resulted in underuse of BMT, but we have previously described that within this sample of harm reduction clients, nearly two-thirds reported at least one barrier to BMT with the most common barrier being not knowing where to go for treatment.<sup>12</sup> In our sample, more participants had used illicit buprenorphine than had been prescribed BMT, which could be from poor access to BMT or resistance to entering treatment. There were high levels of interest in initiating BMT at harm reduction agencies, therefore, onsite BMT programs could address problems with both access to and resistance to entering treatment.

The implementation of BMT programs at harm reduction agencies would face some challenges. Only about one-third of syringe exchange programs in the US currently have onsite medical services;<sup>7</sup> therefore, to offer BMT, harm reductions agencies that only offer syringe exchange would first need to establish medical offices. The WHCP collaborates with a voluntary physician who provides medical advice twice monthly, but more scalable models of integrated services would need to be established. Because only physicians can prescribe buprenorphine in the US, nurse practitioners and physicians assistants would not be able to fill this gap in service. However, current regulations would allow for integrated

medical services at harm reduction agencies that include BMT. The Drug Addiction Treatment Act of 2000 allows waived physicians to “prescribe or dispense” schedule III, IV, or V medications for the treatment of opioid addiction in office-based settings.<sup>13</sup> If programs were to choose to dispense BMT onsite, directly observed therapy could be offered to reduce the risk of diversion of medication. Alternatively, programs could choose to prescribe a limited supply of medication and refer to an offsite provider where more robust addiction treatment could be provided. Despite the potential challenges, prescribing BMT from harm reduction agencies remains promising.

Our study had other interesting findings. Though not significant in multivariable analysis, illicit buprenorphine use also appeared to be associated with harm reduction agency preference. Previously, we demonstrated that illicit buprenorphine users were interested in BMT and perceived themselves to be likely to initiate BMT,<sup>12</sup> therefore, harm reduction agencies may be seen as an easier way to actually initiate BMT in comparison to finding a drug treatment program or general medicine clinic with buprenorphine providers. Alternatively, illicit buprenorphine users may perceive that harm reduction agencies would be more permissive than drug treatment programs with less monitoring for buprenorphine diversion, which could present an opportunity to trade or sell buprenorphine in illicit markets. Other studies have suggested that illicit buprenorphine users are “self-treating” their addiction not abusing the medication,<sup>14</sup> but potential BMT programs at harm reduction agencies would need to monitor for buprenorphine diversion. Research is warranted to compare rates of diversion between different BMT sites.

Our study has limitations. We sampled participants of a single community-based syringe exchange program in New York City, and findings may not be generalizable to other settings or geographic areas. Interest in treatment may be a better proxy for acceptability of treatment than predictor of initiating treatment. Additionally, we could not differentiate between those who intended to initiate BMT as a way to reduce or stop opioid use, and those who intended to divert or abuse buprenorphine.

One of the tenets of harm reduction is to meet clients “where they are”. This principle could be applied literally to addiction treatment by bringing BMT to the harm reduction agencies where many opioid users in the United States access services. Safety and efficacy data will be necessary before fully endorsing this approach, but a pilot study has already demonstrated that it is feasible.<sup>15</sup> With rates of opioid overdose skyrocketing, while a fraction of opioid users utilize traditional treatment settings, novel approaches to opioid addiction treatment are necessary. Our data suggest that harm reduction clients are interested in starting BMT at harm reduction agencies, which offers a critical opportunity to engage out-of-treatment opioid users and confront the opioid addiction epidemic.

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**Table 1**

## Characteristics of syringe exchange participants

<b>Sociodemographic Characteristics</b>	<b>Total (N = 102) N (%)</b>
Age <i>median</i> (IQ range)	47 (41–51)
Male	73 (72)
Race/Ethnicity	
Hispanic	43 (42)
Non-Hispanic White	30 (29)
Non-Hispanic Black	20 (20)
Other	9 (9)
Have Medicaid	68 (67)
High School Graduate or GED	77 (75)
Employed	16 (16)
Stable Housing	36 (35)
History of incarceration	84 (83)
History of injection drug use	72 (71)
<b>Current Substance Use (past 30 days)</b>	
Any Opioid	99 (97)
Heroin	82 (80)
Methadone	55 (54)
Opioid Analgesics	48 (47)
Buprenorphine	26 (25)
Cocaine	60 (58)
Amphetamine	9 (9)
Sedatives/Benzodiazepines	45 (44)
<b>Treatment History (ever)</b>	
Methadone Maintenance	61 (60)
Residential Inpatient Treatment	80 (78)
Self-Help Groups	73 (72)
Buprenorphine Maintenance	32 (32)
<b>Buprenorphine Interest<sup>a</sup></b>	
Overall Interest (mean $\pm$ SD) <sup>b</sup>	3.11 ( $\pm$ 1.34)
Motivation for Treatment (mean $\pm$ SD) <sup>c</sup>	10.92 ( $\pm$ 3.04)

<sup>a</sup> 4 excluded because currently prescribed buprenorphine

<sup>b</sup> Scale out of 5

<sup>c</sup> Scale out of 15



Preferred site for buprenorphine maintenance treatment (BMT) among clients of a NYC harm reduction agency (N = 73)<sup>a</sup>

**Table 2**

Sociodemographic Characteristics	WHCP (N = 49) N (%)	Drug Tx Program (N = 11) N (%)	General Medical Clinic (N = 13) N (%)
Age median (IQ range) <sup>a</sup>	49 (39 – 53)	47 (44 – 52)	43 (38 – 46)
Male	34 (69)*	4 (36)	13 (100)
Race/Ethnicity			
Hispanic	23 (47)	5 (45)	8 (62)
Non-Hispanic White	18 (37)	1 (9)	3 (23)
Non-Hispanic Black	6 (12)	3 (27)	2 (15)
Other	1 (2)	1 (9)	0 (0)
Have Medicaid	32 (65)	7 (64)	9 (69)
High School Graduate or GED	39 (80)*	5 (45)	9 (69)
Employed	6 (12)	1 (9)	3 (23)
Stable Housing	16 (33)	4 (36)	3 (23)
History of incarceration	40 (82)	9 (82)	11 (85)
History of injecting drug use	42 (86)*	5 (45)	11 (85)
<b>Current Substance Use (past 30 days)</b>			
Any Opioid	49 (100)	10 (91)	13 (100)
Heroin	43 (88)	7 (64)	11 (85)
Methadone	27 (55)	7 (64)	7 (54)
Methadone program	15 (29)	6 (50)	5 (38)
Opioid Analgesics	23 (47)	3 (27)	6 (46)
Buprenorphine	17 (35)*	0 (0)	5 (38)
Cocaine	26 (53)	7 (64)	6 (46)
Amphetamine	4 (8)	0 (0)	1 (8)
Sedatives/Benzodiazepines	24 (49)**	2 (18)	4 (31)
<b>Treatment History (ever)</b>			
Methadone Maintenance	31 (63)	8 (73)	10 (77)
Prescribed Buprenorphine	15 (31)**	3 (27)	8 (62)

Sociodemographic Characteristics	WHCP (N = 49) N (%)	Drug Tx Program (N = 11) N (%)	General Medical Clinic (N = 13) N (%)
<b>Buprenorphine Variables</b>			
Overall Interest in BMT (mean ± SD)	3.63 (± 1.02)	3.18 (± 1.54)	3.70 (± 0.82)
Interest in Harm Reduction Agency <sup>b</sup>	4.13 (± 0.82)*	3.18 (± 1.25)	3.90 (± 0.88)
Interest in General Medical Clinic <sup>b</sup>	3.56 (± 1.01)*	2.55 (± 1.29)	3.70 (± 1.25)
Interest in Drug Treatment Program <sup>b</sup>	3.25 (± 1.14)	2.81 (± 1.54)	3.70 (± 0.95)
<b>Treatment Readiness</b>			
Motivation for treatment (mean ± SD) <sup>c</sup>	11.76 (± 2.31)	10.00 (± 3.66)	11.31 (± 3.07)
<b>Barriers to BMT</b>			
1 barrier	39 (80)*	3 (27)	8 (62)

<sup>a</sup> 29 without preference (25 answered, "I would not choose to get treatment with Suboxone"; 4 unaware of buprenorphine)

<sup>b</sup> N = 69

<sup>c</sup> Scale out of 15

\* p < 0.05

\*\* p < 0.15 (three group comparisons: chi-square or ANOVA)

Factors associated with preference for harm reduction agencies as a potential site for BMT using bivariate and multivariable logistic regression (N = 73) \*

**Table 3**

Variable	Bivariate Regression			Multivariable Regression	
	OR	95% CI	P-value	aOR	95% CI
1 Barrier to BMT	4.61	1.59 – 13.33	> 0.01	3.39	1.00 – 11.43
HS Grad	2.79	0.96 – 8.11	0.06	3.59	1.05 – 12.35
Current sedative use	2.88	0.98 – 8.48	0.06	2.14	0.60 – 7.59
Current illicit buprenorphine use	4.40	0.91 – 21.25	0.07	2.64	0.46 – 15.24
Injection Drug Use	3.00	0.93 – 9.63	0.07	2.52	0.69 – 9.19
Male	1.07	0.36 – 3.01	0.90	1.81	0.47–6.98

\* 25 excluded because prefer no treatment, 4 excluded because unaware of BMT