May 30, 2021

A PRELIMINARY OUTCOME EVALUATION OF LAKE COUNTY'S POLICE REFERRAL TO SUBSTANCE USE DISORDER TREATMENT PROGRAM

ILLINOIS CRIMINAL JUSTICE INFORMATION AUTHORITY

CENTER FOR JUSTICE RESEARCH AND EVALUATION
JESSICA REICHERT, MANAGER
LILY GLEICHER, RESEARCH ANALYST
SHARYN ADAMS, RESEARCH ANALYST

Abstract: Police officers often encounter people with substance use disorders and in need of treatment. Police pre-arrest diversion or "deflection" programs allow police departments to refer individuals to treatment, steering them away from traditional criminal justice system processing. This preliminary outcome evaluation examined A Way Out (AWO), a program in Lake County, Illinois, in which contact with police is initiated by individuals in the community who seek substance use disorder treatment. We examined groups of individuals referred to one residential treatment provider through AWO and through other means (criminal justice system, self, family, or healthcare/community providers). We examined group differences and compared the short-term (minimum of six months) post-treatment arrest outcomes of those groups. We found AWO participants were predominately White, male, aged in their late 20s to early 30s, and diagnosed with an opioid use disorder, which was similar to those referred to treatment in other ways. The groups showed no statistically significant differences in numbers of post-treatment misdemeanor, felony, or total arrests. Therefore, we found AWO is on par with other referral methods to treatment and can effectively direct community members to substance use disorder treatment and aid in their recovery.

Introduction

Police officers are on the front lines in communities and are frequently tasked to address an array of issues. One pervasive issue is substance use disorders (SUDs). In 2019, an estimated 57.2 million Americans (20.8% of the population) aged 12 or older indicated illicit drug use in the past year, according to the National Survey on Drug Use and Health.[1] The same survey indicated within that previous 12 months, an estimated 14.5 million people aged 12 or older had an alcohol use disorder (5.3% of the population). In addition, the survey estimated approximately 8.3 million people aged 12 or older had at least one illicit drug use disorder, which could include use of marijuana, cocaine, heroin, hallucinogens, inhalants, methamphetamines, or prescription psychotherapeutic drugs (e.g., stimulants, tranquilizers, sedatives), equating to approximately 3.0% of the population in 2018.

Approximately 21.6 million people aged 12 or older needed SUD treatment in 2019, or about 7.8% of the population; however, only 4.2 million people aged 12 or older were treated that year (1.5% of the population).[2] The most common reasons for those who needed or perceived the need for treatment but did not receive it were not being ready to stop using illicit drugs (39.9%), not knowing where to go for treatment (23.8%), and not having health insurance and not being able to afford the cost of treatment (20.9%).[3] Police pre-arrest diversion or "deflection" programs are one way in which communities can help individuals navigate SUD treatment options and services.

Police-Led Deflection and Diversion Programs

Individuals with SUDs come to the attention of police in various ways and officers may feel a sense of futility due to the chronic, relapsing nature of SUDs, prevalence of illicit drugs, and lack of treatment in their communities.[4] Recognizing that SUDs are clinically diagnosed mental disorders that may not improve with, and may even be exacerbated by, arrest and further criminal justice involvement, some police agencies have begun to identify themselves as alternate access points to treatment and services. This also provides a potential way to divert individuals away from criminal justice system involvement.[5] Police departments have started assisting individuals with SUDs through police-led addiction treatment referral programs, commonly referred to as deflection or pre-arrest diversion programs (hereafter collectively referred to as deflection).[6]

Deflection models generally consist of law enforcement agencies serving as a point of contact for individuals seeking treatment and services for substance misuse/SUDs either through voluntary entry, contact with a police department or police officer, or through officer outreach efforts.[7] Diversion models may occur pre-arrest or post-arrest after individuals have had involuntary contact with law enforcement.[8] The present study is an exploratory study of a police deflection program and an examination of program participant arrest outcomes.

Self-referral deflection programs are relatively new, with the first—the Angel Program—initiated in 2015 in Gloucester, Massachusetts, but they have spread to over 400 police agencies in 32 states.[9] The programs rapidly link individuals to appropriate treatment to improve

behavioral health, as well as prevent or reduce further contact with the criminal justice system. Research on the process, utility, and efficacy of deflection programs is still in its infancy.

A Way Out Program Overview

This study examines A Way Out (AWO), a Lake-County police-led addiction treatment referral program established in June 2016 and modeled after the Angel Program.[10] The Lake County Opioid Initiative, a county-wide task force initiated in 2012, generated the idea for the program; however, individuals with any SUD, not solely an opioid use disorder (OUD), can access the program. Individuals can enter any police station participating in AWO and request assistance. Many participants are Lake County residents, but the program helps individuals who may live outside of the county. The program has never turned anyone away; if an individual requesting treatment has a warrant, the police and state's attorney partner to coordinate a special hearing before a judge to waive bond or quash the warrant in lieu of treatment. At the time of the evaluation, AWO operated without external funding support, using existing police staff and resources but in later years, obtained grant funding.

At the police station, individuals are asked to sign an AWO program waiver certifying their age (18 or over) or that their guardian authorizes participation. Police officers contact the county health department by phone and a county health professional screens the client to pre-assess treatment needs; a full assessment is completed upon SUD treatment admission. The client is then placed into treatment with one of five residential or two outpatient—treatment providers. Clients also receive county health department services. The program established working agreements with select treatment providers to offer rapid assessment and intake, allowing participants to circumvent any long waiting lists. On average, clients are placed in treatment within two hours.[11] Program volunteers sit with participants at the police station to provide support if there is a delay in immediate treatment access. Police transport participants to their treatment providers. As of February 2021, the program helped 784 individuals access treatment and operated in 15 police departments.[12]

Methodology

We examined individuals referred through five methods [AWO, criminal justice system (e.g., probation or problem-solving court), self, family, and healthcare/community providers] who received the same residential treatment from a single provider and location during the same time-period. The treatment provider incorporated individualized services, including medications for OUDs (except methadone) and alcohol use disorders, co-occurring disorder treatment, acceptance and commitment therapy, cognitive behavioral therapy, dialectical behavioral therapy, 12-step facilitation, and motivational interviewing.[13]

Some treatment data were unclear. It was unknown whether medications for OUD were prescribed to participants for medical detoxification (or taper) or initiated for long-term use as medical management while they were in the facility; however, information was available on whether an individual had been previously prescribed an OUD medication. Data on medications for alcohol use disorder was not collected.

The purpose of this study was to examine characteristics and compare outcomes of individuals receiving the same residential SUD treatment through different referral methods. This filled a research gap on who is accessing SUD treatment through AWO and who finds their way via the four other referral methods. We sought to answer the following research questions:

1. What were the characteristics of AWO program participants?
2. What were the characteristics of individuals accessing SUD treatment through the other four referral methods?
3. Were there similarities or differences in demographic, treatment-related, and arrest variables of individuals entering treatment via the different referral methods?

This is an exploratory study analyzing differences and similarities between those referred through AWO[14] and those referred through the other four referral methods. The observation period for this study was, at minimum, six-months post-discharge from the treatment facility. The actual treatment period was not observed, however, treatment facility data was incorporated into the analysis.

Regardless of referral method, all clients entered the same residential SUD treatment facility in Lake County, Illinois. The study included individuals with a treatment admission date that fell on or after January 20, 2016, and a treatment discharge date of no later than June 30, 2018, with a minimum post-discharge period of six months. The study was approved by the Illinois Criminal Justice Information Authority's Institutional Review Board.

Sample

From the data, we collected a final sample of 726 individuals who sought treatment. We then matched 652 individuals in the sample to corresponding arrest records (89.9%) using both deterministic matching on name and date of birth and a manual review of near-matching records indicating those individuals had at least one arrest prior to treatment entry or post-discharge. A 100% match was not expected as most referral methods did not require nor necessitate prior contact with the criminal justice system as a prerequisite for treatment.

Data Sources

Treatment Data

We accessed individual electronic treatment records on-site from the treatment facility's electronic records. Relevant nominal and categorical data collected included referral method, gender, race/ethnicity, employment status, insurance type, DSM-5 mental health diagnosis(es) other than SUD diagnosis(es), DSM-5 SUD diagnosis(es), treatment completion status, and participants' OUD medications. Continuous level treatment data variables included age of first use, age, and number of prior treatment episodes (at any facility). See the Appendix for specific treatment and arrest data coding.

Arrest Records

We electronically extracted the sampled individuals' criminal history records from the Illinois State Police (ISP) Criminal History Record Information (CHRI) System, the state's central repository for arrest information. Local police departments forward individuals' arrest information to ISP for processing and posting onto their criminal history record.[15] Using individual state identification numbers, we pulled each person's matched arrest history and entered it into a database on November 28, 2018. First, arrests were categorized into felony, misdemeanor, unknown, ordinance, bond warrants, and other. Second, arrests were categorized as person offenses (i.e., violent offenses)—as defined by the Illinois Crime Victims Act.

We examined six post-treatment, criminal justice-related variables: a dichotomous variable indicating if there was *any* post-treatment arrest event, a continuous variable that had total number of arrests post-treatment, a dichotomous variable indicating if there was *any* post-treatment misdemeanor arrest event, a continuous variable that includes the total number of misdemeanor arrests post-treatment, a dichotomous variable indicating if there was *any* post-treatment felony arrest event, and a continuous variable that includes the total number of felony arrests post-treatment (Table 1). We gave scores of zero to individuals who had no identified criminal histories or post-treatment arrests.

Data Coding

The table in the Appendix provides an overview of how each variable was coded in the dataset, including original and revised coding. Several categorical variables were collapsed due to the lack of variability between the categories and high frequency of zero cell counts in forthcoming crosstabulations. While this potentially creates some loss of information, it does help for further bivariate analyses for data that are non-normally distributed, particularly regarding bimodal variables.

Statistical Analyses

We used bivariate analyses (chi-square tests and one-way ANOVAs) to test for differences between the five referral methods on descriptive, treatment-related, and arrest variables, with a significance indicated at $p < .05$. We used SPSS to conduct all descriptive and bivariate analyses. When analyzing the continuous level variables for outliers and homogeneity of variance to test one-way ANOVA assumptions, all but three variables violated the test for homogeneity of variance. For one-way ANOVAs that did not meet homogeneity of variance assumption, the Welch's F-test and Games-Howell post-hoc tests were used.

A chi-square test measures the association between two categorical variables such as characteristics such as gender or race between groups (in this study, groups based on referral method). An ANOVA test measures differences in continuous variables such as characteristics such as age or number of prior arrests between groups outcomes (in this study, groups based on referral method). Welch's F-test and Games-Howell post-hoc tests are similar to ANOVAs in that they measure group differences. A p-value is a measure of the probability that an observed

difference could have occurred just by random chance. The lower the p-value, the greater the statistical significance of the observed difference.

The limited follow-up time (minimum follow-up of six-months) and limited variability of the continuous post-treatment arrest measures ultimately impacted the results due to heavily skewed, non-normally distributed variables. Therefore, only chi-square tests were conducted on the categorical variables, including the dichotomous post-treatment discharge arrest variables, because it was more meaningful and representative of the actual differences between the referral methods on the post-treatment arrest variables; however, one-way ANOVAs were conducted for age, age of first use, number of prior treatment episodes, prior arrests, prior misdemeanor arrests, and prior felony arrests.

Findings

Study Sample Characteristics

Table 1 displays descriptive statistics of the study sample by individual referral method. Across all referral methods, individuals predominately identified as White, male, unemployed, and having at least one prior treatment episode. The individuals most frequently reported never using OUD medications, most frequently completed the residential treatment program, and had been arrested at least once prior to treatment admittance. On average, individuals spent 25 days in treatment, with a median of 28 days (SD = 13.85). Further, individuals entering treatment via AWO referral were most frequently uninsured, while individuals using one of the other four referral methods most frequently had Medicaid Managed Care (MMC). In addition, a higher proportion of individuals with diagnosed alcohol use disorders were referred by health providers.

Table 1

Characteristics of Residential Treatment Participants by Referral Method

Variable	AWO (n = 134)		Self (n = 264)		Family (n = 84)		Provider (n = 165)		Criminal justice system (n = 79)	
	M(SD)	*Mdn*	*M(SD)*	*Mdn*	*M(SD)*	*Mdn*	*M(SD)*	*Mdn*	*M(SD)*	*Mdn*
Age	33 (9.66)	31	31 (10.04)	29	30 (10.64)	28	32 (10.26)	29	31 (10.41)	28
Age at first use	17 (6.33)	15	16 (4.58)	15	16 (5.58)	15	15 (4.45)	14	15 (4.56)	14
Prior number treatment episodes (n = 725)	2 (2.73)	1	3 (3.10)	2	2 (2.38)	1	2 (2.45)	2	2 (3.38)	2
Number days in treatment	22 (12.08)	25	26 (13.42)	28	25 (11.34)	28	27 (16.51)	28	30 (13.21)	29
Prior arrests	6 (7.94)	3	7 (8.20)	5	5 (4.98)	4	6 (6.62)	4	9 (7.85)	7
Prior felony arrests	2 (2.95)	1	2 (2.51)	1	1 (1.94)	1	2 (2.51)	1	3 (3.37)	2
Prior misdemeanor arrests	3 (3.91)	1	4 (4.49)	3	3 (2.73)	2	3 (3.40)	2	4 (3.54)	4
	n (%)		*n* (%)		*n* (%)		*n* (%)		*n* (%)	
Gender (n = 725)										
Male	87 (65)		183 (69)		59 (70)		119 (72)		65 (83)	
Female	47 (35)		81 (31)		25 (30)		46 (28)		13 (17)	
Race/Ethnicity										
White	117 (87)		219 (83)		72 (86)		126 (76)		61 (77)	
Black	7 (5)		19 (7)		4 (5)		17 (10)		11 (14)	
Other	10 (8)		26 (10)		8 (10)		22 (13)		7 (9)	
SUD Diagnosis (DSM-5)										
Alcohol use disorder	28 (21)		96 (36)		26 (31)		61 (37)		15 (19)	
Opioid use disorder	86 (64)		129 (49)		35 (42)		57 (35)		42 (53)	
Other use disorder	20 (15)		39 (15)		23 (27)		47 (29)		22 (28)	
Insurance type										
None	51 (38)		66 (25)		26 (31)		35 (21)		17 (22)	
MMC	39 (29)		124 (47)		31 (37)		74 (45)		32 (41)	
Medicaid/ Medicare	18 (13)		67 (25)		21 (25)		48 (29)		27 (34)	
Other/Unknown	26 (19)		7 (3)		6 (7)		8 (5)		3 (4)	
Treatment completion (n = 720)										
Yes	95 (73)		212 (80)		68 (81)		134 (82)		70 (90)	
No	35 (27)		52 (20)		16 (19)		30 (18)		8 (10)	
Ever engaged in medication-assisted treatment (n = 787)										
Yes	47 (35)		89 (34)		31 (37)		41 (25)		17 (22)	
No	83 (62)		172 (65)		53 (53)		124 (75)		60 (26)	
Employment status										
Disabled/unable, pension, on leave, retired	11 (8)		13 (5)		3 (4)		6 (4)		1 (1)	
Employed seasonally, part-time, full-time	23 (17)		33 (13)		13 (16)		30 (18)		9 (11)	
Unemployed	97 (72)		215 (81)		62 (74)		122 (74)		55 (70)	
Other	3 (2)		3 (1)		6 (7)		7 (4)		14 (18)	
Mental health disorder diagnosis (DSM-5)										
Yes	44 (33)		89 (42)		36 (43)		66 (40)		34 (43)	
No	90 (67)		153 (58)		48 (57)		99 (60)		45 (57)	
Any arrest event prior to treatment										
Yes	100 (75)		223 (85)		70 (83)		136 (82)		70 (89)	
No	34 (25)		41 (16)		14 (17)		29 (18)		9 (11)	
Any felony arrest event prior to treatment										
Yes	80 (60)		169 (64)		45 (54)		99 (60)		64 (81)	
No	54 (40)		95 (36)		39 (46)		66 (40)		15 (19)	
Any misdemeanor arrest event prior to treatment										
Yes	95 (71)		207 (78)		66 (79)		124 (75)		64 (81)	
No	39 (29)		57 (22)		18 (21)		41 (25)		15 (19)	

Note. Sample size was 726 participants. If the items do not add up to the total, this is due to a lack of data for that variable. Percentages may not equal 100% due to rounding. Sample sizes are provided when the totals are not reflective of the full sample. *M* is mean, *Mdn* is median, and *SD* is standard deviation.

Post-Treatment Arrest Descriptive Statistics

Table 2 provides post-treatment arrest data on sampled individuals categorized by referral method. One-third of all individuals sampled were arrested post-treatment (n = 238, 33%). The following proportion of individuals were arrested at least once post-treatment by referral type: AWO (39%), criminal justice system (28%), family (35%), self (31%), and provider (28%).

Table 2

Post-Treatment Discharge Arrest Variables by Referral Method

	AWO program participants (n = 134)		Self (n = 264)		Family (n = 84)		Health and community provider (n = 165)		Criminal justice system (n = 79)	
Variable	*n* (%)		*n* (%)		*n* (%)		*n* (%)		*n* (%)	
Any arrest post-treatment discharge										
Yes	52 (39)		81 (31)		29 (35)		46 (28)		30 (38)	
No	82 (61)		183 (69)		55 (66)		119 (72)		49 (62)	
Any felony arrest post-treatment discharge										
Yes	23 (17)		43 (16)		19 (23)		19 (12)		17 (22)	
No	111 (83)		221 (84)		65 (77)		146 (89)		62 (79)	
Any misdemeanor arrest post-treatment discharge										
Yes	39 (29)		47 (18)		14 (17)		31 (19)		21 (27)	
No	95 (71)		217 (82)		70 (83)		134 (81)		58 (73)	
	M(SD)	*Mdn*	*M(SD)*	*Mdn*	*M(SD)*	*Mdn*	*M(SD)*	*Mdn*	*M(SD)*	*Mdn*
Number arrests post-treatment discharge	1 (.87)	0	1 (.53)	0	1 (.58)	0	0 (.47)	0	1 (.68)	0
Number felony arrests post-treatment discharge	0 (.26)	0	0 (.22)	0	0 (.27)	0	0 (.15)	0	0 (.29)	0
Number misdemeanor arrests post-treatment discharge	1 (.50)	0	0 (.25)	0	0 (.27)	0	0 (.27)	0	0 (.32)	0

Note. Sample size was 726. *M* is mean, *Mdn* is median, and *SD* is standard deviation.

Of the individuals arrested once post-treatment for a felony, 23% were referred by family, 22% were referred by the criminal justice system, 17% were referred through AWO, 16% self-referred to treatment, and 12% were referred by providers. Among the individuals arrested post-treatment for a misdemeanor, 29% were referred through AWO, 27% were referred via the criminal justice system, 19% were referred by providers, 18% self-referred, and 17% were referred by family.

Tests for Group Differences

Table 3 provides the results of the chi-square tests to examine associations among the referral types regarding employment, prior arrests (dichotomous), indication of a DSM-5 mental health disorder (other than SUD), primary SUD diagnosis, race/ethnicity, gender, prior treatment episodes (dichotomous), medications for OUD, discharge status (dichotomous), insurance based on referral method, any post-treatment arrest, any post-treatment misdemeanor arrest, and any post-treatment felony arrest.

Table 3

Chi-Square Tests of Categorical Variables by Referral Method

Variables	χ^2	P-value
Race/Ethnicity	(8, *N* = 726) = 11.47	.176
Gender	(4, *N* = 725) = 8.59	.072
SUD diagnosis	(8, *N* = 726) = 42.23	.000
Mental health diagnosis	(4, *N* = 726) = 3.91	.418
Any prior arrest	(4, *N* = 726) = 8.55	.073
Insurance type	(12, *N* = 726) = 68.14	.000
Employment status	(4, *N* = 726) = 3.94	.415
Prior treatment episodes (dichotomous)	(4, *N* = 726) = 14.30	.006
Ever prescribed medication for OUD	(4, *N* = 717) = 9.83	.043
Discharge status	(4, *N* = 720) = 8.45	.062
Post-Treatment Arrest Variables	χ^2	P-value
Any post-treatment discharge arrest	(4, *N* = 726) = 5.62	.230
Any post-treatment discharge felony arrest	(4, *N* = 726) = 6.69	.153
Any post-treatment discharge misdemeanor arrest	(4, *N* = 726) = 9.87	.043

Note. Sample size was 726.

Group Differences Between Referral Methods

A statistically significant relationship was found between both SUD diagnosis (Φ = .31), insurance type (Φ = .24), prior exposure to medications for OUD (Φ = .12), and any post-treatment discharge misdemeanor arrest (Φ = .12) based on referral method. A higher proportion of individuals referred by AWO were without insurance compared to those entering treatment via other referral methods, which had a higher proportion of individuals with MMC insurance. Provider referrals resulted in a higher proportion of individuals with an identified alcohol use disorder, whereas other referrals had a higher proportion of identified OUDs. A higher proportion of those referred through AWO, self, and family reported a history of being prescribed OUD medication(s) compared to those referred via the criminal justice system and health providers.

On the dichotomous post-treatment arrest variables, only post-treatment misdemeanor arrest was statistically significant. A slightly higher proportion of individuals entering treatment via AWO referrals (29%) and criminal justice system-referred individuals (27%) had at least one post-treatment misdemeanor arrest compared to those entering treatment via the other referral types.

Group Differences by Referral Method

We identified a statistically significant difference between referral method and age of first substance use (Table 4). Individuals referred by AWO had an older mean age of first substance use than those referred by health providers, at about 16.75 years old and 14.90 years old, respectively. We found no statistically significant difference between referral method and age.

The data also revealed a statistically significant difference between referral methods and number of prior treatment episodes. Those who had self-referred to SUD treatment (M = 3.12, SD = 3.11) had a higher mean number of prior treatment episodes than those referred by AWO (M = 2.14, SD = 2.74), which was statistically significant. Individuals who had self-referred also had a higher mean number of prior treatment episodes than those referred by family (M = 1.96, SD = 2.38), which was statistically significant. In addition, self-referred individuals also had a statistically significant, higher mean number of prior treatment episodes than those referred by a provider (M = 2.29, SD = 2.49).

The data showed a statistically significant difference between referral methods and number of arrests prior to treatment admittance. Those referred by family (M = 5.01, SD = 4.98) had a lower average number of prior arrests than individuals who had self-referred (M = 7.12 SD = 8.21). In addition, those referred by family had a lower average of prior number of arrests than CJS referrals (M = 8.86, SD = 7.85), which was also statistically significant. Data also revealed a statistically significant difference regarding number of days in residential treatment, specifically between those referred by AWO (M = 22, SD = 12.08) and those referred by the criminal justice system (M = 30, SD = 13.21). Those referred by the criminal justice system tallied a higher mean average of residential treatment days.

In addition, we found a statistically significant difference in the mean number of prior felony arrests, where those referred by the criminal justice system (M = 3.27, SD = 3.37) had a higher mean number of prior felony arrests than those who self-referred (M = 2.04, SD = 2.52) and those referred by family (M = 1.36, SD = 1.94) and providers (M = 1.77, SD = 2.52). The data showed no statistically significant difference between referral methods on prior misdemeanor arrests.

We found no statistically significant differences between the referral methods and the means of total, felony, and misdemeanor post-treatment arrests. Table 4 provides ANOVA (or analysis of variance) test results on the relationship between variables for our referral groups.

Table 4

One-way ANOVAs of Continuous Variables by Referral Method

Variables	F-test	P-value
Age	[$F(4, 716) = .97$]	.423
Age at first substance use	[Welch's $F(4, 261.72) = 2.63$]	.035
Total prior arrests	[Welch's $F(4, 279.63) = 4.04$]	.003
Prior misdemeanor arrests	[$F(4, 718) = 2.17$]	.070
Prior felony arrests	[Welch's $F(4, 268.48) = 5.25$]	.000
Prior number of SUD treatment episodes	[Welch's $F(4, 267.67) = 4.62$]	.001
Total number of days spent in treatment	[$F(4, 706) = 3.89$]	.004
Post-Treatment Arrest Variables	**F-test**	**P-value**
Total post-treatment discharge arrests	[Welch's $F(4, 283.50) = 1.68$]	.154
Total misdemeanor post-treatment discharge arrests	[Welch's $F(4, 286/93) = 1.25$]	.289
Total felony post-treatment discharge arrests	[Welch's $F(4, 280.68) = 1.72$]	.146

Note. Sample size was 726.

Discussion

In this study, we compared those who accessed residential SUD treatment in Lake County, Illinois. through a police deflection program, AWO, and four other methods—self, family, criminal justice system, and health/community providers. The majority of individuals sampled across all referral methods were White, male, aged in their late 20s to early 30s, and diagnosed with an OUD. According to 2019 U.S. Census Bureau estimates, the Lake County population was 61% White, non-Latinx, and 39% non-White and/or Latinx.[16] In 2017, Lake County ranked eighth in county opioid-related overdose mortality across the state[17] and third for arrest charges related to intoxicated driving.[18]

A large proportion of those who self-referred to treatment and those referred via AWO, family, and the criminal justice system had OUDs; however, a higher proportion of individuals referred by health provider presented with alcohol use disorders. Although Lake County had a significant number of opioid overdoses and the program was borne out of a county opioid task force, it is unknown the degree to which potential participants perceived the program was for OUDs than any SUDs, which could potentially influence the population accessing AWO. There may have been self-selection bias in that more individuals with OUD sought help through AWO because their understanding was that it served only those with OUD rather than other SUDs. Future programs can make clear—and include— program eligibility for individuals with any SUD. In addition, future research can evaluate the effectiveness of public education and awareness aspects of such programs.

In our sample, a larger proportion of AWO clients (35%) had been previously prescribed medications for OUDs compared to clients referred by the criminal justice system (22%). National treatment data also show a larger proportion (41%) of individuals who are not referred to treatment via the criminal justice system (4.6%) receive methadone or buprenorphine for OUDs.[19] This may be due in part to the significant barriers to and underutilization of medications for OUD in the criminal justice system, including limited knowledge about and negative attitudes or stigma toward medications.[20]

Those referred by AWO and family had the lowest median number of prior SUD treatment referrals, suggesting police-led addiction treatment referral programs may often be an individual's first attempt getting help and treatment. However, self-referred individuals had a higher average number of prior SUD treatment episodes compared to those referred via the other methods and a larger proportion of prior arrests, suggesting those with previous criminal justice involvement may be more aware of or know how to access treatment resources and services for themselves.

Individuals referred by the criminal justice system spent more days on average in residential SUD treatment than those referred through AWO. This could suggest that criminal justice system-involved individuals may have longer and/or more severe histories of substance misuse,[21] requiring more intensive residential services for longer periods of time. Further research is needed to study the connection between referral methods and treatment motivation and engagement over time, quality of treatment provision, and continuity of care.

Those referred by AWO were more often uninsured compared to those referred via the other four methods, which had a higher proportion of those with health benefits through MMC. This may suggest that individuals may have approached AWO because they did not know of, or be unsure of, how to access SUD treatment—particularly without health insurance. For example, in a study of individuals who inject drugs, Feder and colleagues found individuals are more likely to engage in SUD treatment after obtaining health insurance and have more consistent medical care in general.[22] The current study findings are also consistent with Bouchery and colleagues'30 study that found those enrolled in publicly funded health benefit programs had a 50% to 70% greater odds of getting treatment compared to those with private insurance.[23]

The vast majority of the sample had at least one arrest in their criminal histories and individuals referred by the criminal justice system had a larger proportion of arrests. AWO participants had a statistically higher proportion of post-treatment misdemeanor arrests. However, we found no statistically significant differences in the mean *number* of total, felony, or misdemeanor post-treatment arrests.

It is possible since these individuals are known to the police department through the deflection program, they may be more likely to be stopped or recognized while potentially engaging in minor law violations, particularly if the individual has relapsed, as substance misuse increases likelihood of continued criminal offending.[24] Future research should consider how participation in police-led addiction treatment referral programs may have unintended consequences, such as increased contact or recognition by police officers.

Deflection programs have the potential to help individuals access treatment, recognizing SUD is a chronic, relapsing diagnosable condition.[25] In contrast, the criminal justice system often responds to individuals with SUDs with punitive measures, rather than treatment, doing little to address the underlying cause(s) of criminal behavior or substance use.[26] This can ultimately lead an individual to continued substance use and further justice system involvement.

Police officers may be poised to help individuals access SUD treatment, as they are available 24 hours a day, seven days a week, and often encounter individuals with SUD issues that will not be

solved by arrest.[27] The AWO program model may be able to overcome two often cited barriers—long waiting lists and transportation to treatment.[28] However, their success may depend on police-community relationships and trust and collaboration with SUD treatment providers in the community. Police departments should consider needs of their jurisdictions, police agency culture, police-community relationships, access to treatment resources, knowledge, and internal and/or external support in implementing a similar program.[29]

Study Limitations

This study had several limitations. First, researchers could not assess the quality of treatment or compare types of treatment provided (i.e., outpatient care, recovery support groups, medication-assisted treatment, aftercare, fidelity to evidence-based treatment practices). Without information regarding specific treatment and aftercare processes, we could not determine if post-treatment arrests were the product of discontinuity in care, which may increase individuals' likelihood to relapse and subsequent arrest. Second, the study did not measure more proximate treatment and quality-of-life outcomes, such as overdose, emergency admissions, morbidity, mortality, employment, housing, education, physical and/or mental health, or other criminal justice measures (i.e. incarceration). Third, although public health is an outcome of interest, researchers have documented many obstacles in obtaining longitudinal behavioral health data. These obstacles are due to the lack of available administrative databases, high attrition rates, and the large investment of time and resources required for tracking individuals.[30] Finally, we could not track long-term outcomes and were limited to follow-up times of a minimum of six months as the program was established in 2016. Therefore, it is unknown if outcomes would be sustained or differ over a longer period.

Future research could address these limitations with additional data collection and outcome measurements, including a longer follow-up time at which to assess long-term results, analyze quality-of-life and criminal justice contact measures, and incorporate qualitative information from program and community stakeholders. For example, death or mortality records could be used to determine whether non-arrest was due to an individual's mortality. Further research also is needed to evaluate the efficacy of treatment programming, as AWO police function purely as an access (and/or intake) point for a warm hand-off to treatment. Ultimately, more long-term and wholistic outcomes need to be evaluated, including engagement in aftercare services (mutual help support services/groups, medication-assisted treatment, case management, individual or group counseling, or access to housing and employment). At the time of this evaluation, most programs did not have a sufficient number of people, years implemented, or follow-up years to conduct a long-term evaluation.

Conclusion

This is one of few studies examining the characteristics of individuals referred to SUD treatment via a deflection program in comparison to those referred through other methods. Based on this study's findings, AWO appears to be a potentially useful access point for those who do not otherwise know how to seek or navigate the treatment system. Because every participant received the same residential treatment in this study, it appears that AWO seems to be as effective as other referral methods in providing access to treatment. Theoretically, AWO may

decrease wait times to entering treatment, using transportation and a “warm handoff” to connect individuals to a treatment provider (time to treatment was not analyzed). Deflection models may help reduce the harms of those in recovery or in active use that may result from arrest and further justice system involvement.

This project was supported by Grant #16-DJ-BX-0083, awarded to the Illinois Criminal Justice Information Authority by the U.S. Department of Justice Office of Justice Programs’ Bureau of Justice Assistance. The opinions, findings, and conclusions or recommendations expressed in this publication/program/exhibition are those of the author(s) and do not necessarily reflect the views of the Department of Justice or grant-making component, or the Illinois Criminal Justice Information Authority.

Suggested citation: Reichert, J., Gleicher, L, & Adams, S. (2021). *A preliminary outcome evaluation of Lake County police referral to substance use disorder treatment program*. Illinois Criminal Justice Information Authority.

The authors would like to acknowledge the Lake County Opioid Initiative, the A Way Out Program, and the treatment provider who shared their administrative data for their input and support.

Appendix

Table A

Data Coding and Continuous Variable Ranges

Variables	Numerical Coding and Continuous Variable Ranges
Referral Method	1 = AWO 2 = Self-referral 3 = Family 4 = Criminal Justice System (CJS) 5 = Health provider 6 = Other (other state agencies, community-based organizations, advocacy organizations)
Revised Referral Method (Collapsing "Other")	1 = AWO 2 = Self-referral 3 = Family 4 = Criminal Justice System (CJS) 5 = Health and/or community-based provider
Gender (*n* = 725)	1 = Female 2 = Male
Race/Ethnicity	1 = White/Caucasian 2= Black/African American 3= All else (Ethnicity information was sparsely collected)
Primary SUD	1 = Alcohol use disorder 2= Opioid use disorder 3= Other use disorders, which could include inhalant use disorder, stimulant use disorder(s) (i.e. cocaine, amphetamine-type), cannabis use disorder, Phencyclidine use disorder, and/or other hallucinogen use disorder(s).
Age (*n* = 721)	A continuous variable with a range of 50, a minimum age of 18 and maximum age of 68.
Ever received medication for OUD?	0 = No 1 = Yes 2 = Unknown
Insurance	1 = None 2 = Managed Care Organization/Medicaid Managed Care (MMC) 3 = Medicaid or Medicare 4 = Other (private insurance, Blue Cross Blue Shield, other, or unknown)

Discharge status (*n* = 720)	1 = Did not complete 2 = Completed
Number of prior treatment episodes	Continuous variable with a range of 20, and a minimum value of 0 and a maximum value of 20.
Dichotomous number of prior treatment episodes	0 = none 1 = at least 1 prior treatment episode
Employment	1 = Disabled or unable to work 2 = Employed but not working or on leave 3 = Working full time (35+ hours) 4 = Other (students, inmate, indication of other, homemaker) 5 = Working part-time (less than 35 hours) including seasonal work 6 = Retirement/Pension 7 = Unemployed (looking for work and those not looking for work)
Employment (Collapsed)	1 = Disabled, unable to work, or employed but on leave 2 = Seasonal, part-time, or full-time employed 3 = Unemployed 4 = Other
Arrests prior to treatment date	Continuous variable with a range of 49, a minimum value of 0 and maximum value of 49.
Dichotomous prior arrest variable	0 = No arrests prior to treatment start date 1 = At least one arrest prior to treatment start date
Arrests post-treatment discharge date arrest(s)	Continuous variable with a range of 12, a minimum value of 0 and maximum value of 12.
Dichotomous post-treatment discharge date arrest(s)	0 = No arrests after treatment discharge date 1 = At least one arrest after treatment discharge date
Felony arrests prior to treatment date	Continuous variable with a range of 17, a minimum value of 0 and maximum value of 17.
Dichotomous felony arrests prior to treatment date	0 = No felony arrests prior to treatment start date 1 = At least one felony arrest prior to treatment start date
Felony arrests post-discharge from treatment	A continuous variable with a range of 4, a minimum value of 0, and maximum value of 4

Dichotomous felony arrests post-discharge from treatment	0 = No felony arrest post-discharge date 1 = At least one felony post-discharge date
Misdemeanor arrests prior to treatment	Continuous variable with a range of 31, a minimum value of 0 and maximum value of 31.
Dichotomous misdemeanor arrests prior to treatment	0 = No misdemeanor arrests prior to treatment start date 1 = At least one misdemeanor arrest prior to treatment start date
Misdemeanor arrests post-discharge from treatment	Continuous variable with a range of 7, a minimum value of 0 and maximum value of 7.
Dichotomous misdemeanor arrests post-discharge from treatment	0 = No misdemeanor arrest post-discharge date 1 = At least one misdemeanor post-discharge date

Note. Full sample size was 726.

[1] Hahn, B. (2020). *Key substance use and mental health indicators in the United States: Results from the 2019 National Survey on Drug use and Health*. Substance Abuse and Mental Health Services Administration (SAMHSA). https://www.samhsa.gov/data/sites/default/files/reports/rpt29393/2019NSDUHFFRPDFWHTML/2019NSDUHFFR090120.htm#sud1

[2] Hahn, B. (2020). *Key substance use and mental health indicators in the United States: Results from the 2019 National Survey on Drug use and Health*. Substance Abuse and Mental Health Services Administration (SAMHSA). https://www.samhsa.gov/data/sites/default/files/reports/rpt29393/2019NSDUHFFRPDFWHTML/2019NSDUHFFR090120.htm#sud1

[3] Hahn, B. (2020). *Key substance use and mental health indicators in the United States: Results from the 2019 National Survey on Drug use and Health*. Substance Abuse and Mental Health Services Administration (SAMHSA). https://www.samhsa.gov/data/sites/default/files/reports/rpt29393/2019NSDUHFFRPDFWHTML/2019NSDUHFFR090120.htm#sud1

[4] Green, T. C., Zaller, N., Palacios, W. R., Bowman, S. E., Ray, M., Heimer, R., & Case, P. (2013). Law enforcement attitudes toward overdose prevention and response. *Drug Alcohol Dependence*, *113*(2), 677-684. https://doi.org/10.1016/j.drugalcdep.2013.08.018

[5] Chandler, R. K., Fletcher, B, W., & Volkow, N. D. (2009). Treating drug abuse and addiction in the criminal justice system: Improving public health and safety. *Journal of American Medical Association*, *301*(2), 183-190. https://doi.org/10.1001/jama.2008.976

[6] Charlier, J. (2018). Deflection: A powerful crime-fighting tool that improves community relations. *Police Chief Magazine*. www.policechiefmagazine.org/deflection-a-powerful-crime-fighting-tool-that-improves-community-relations/#.; National Association of Counties. (2017*). 'Safe stations' program offers path to recovery for opioids, heroin addicts*. https://www.naco.org/articles/‘safe-stations’-program-offers-path-recovery-opioid-heroin-addicts.; Schiff, D. M., Drainoni, M., Bair-Merritt, M., & Rosenbloom, D. (2016). A police-led addiction treatment referral program in Massachusetts. *New England Journal of Medicine*, *375*, 25.2-2503. https://doi.org/10.1056/NEJMc1611640

[7] Charlier, J. (2015). Want to reduce drugs in your community? You might want to deflect instead of arrest. *The Police Chief*, 30-31.; Reichert, J. (2017). *Fighting the opioid crisis through substance use disorder treatment: A study of a police program model in Illinois*. Illinois Criminal Justice Information

Authority https://icjia.illinois.gov/researchhub/articles/fighting-the-opioid-crisis-through-substance-use-disorder-treatment-a-study-of-a-police-program-model-in-illinois; Reichert, J., & Gleicher, L. (2017). *Rethinking law enforcement's role on drugs: Community drug intervention and diversion efforts*. Illinois Criminal Justice Information Authority.; Schiff, D. M., Drainoni, M., Bair-Merritt, M., & Rosenbloom, D. (2016). A police-led addiction treatment referral program in Massachusetts. *New England Journal of Medicine, 375*, 25.2-2503. https://doi.org/doi:10.1056/NEJMc1611640; Schiff, D. M., Drainoni, M., Weinstein, Z. M., Chan, L., Bair-Merritt, M., & Rosenbloom, D. (2017). A police-led addiction treatment referral program in Gloucester, MA: Implementation and participants' experiences. *Journal of Substance Abuse Treatment, 82*, 41-47. https://doi.org/10.1016/j.jsat.2017.09.003

[8] Reichert, J., & Gleicher, L. (2017). *Rethinking law enforcement's role on drugs: Community drug intervention and diversion efforts*. Illinois Criminal Justice Information Authority.

[9] Hunter McDade, A. (2018). *Police assisted addiction and recovery initiative*. https://3jbkhr3o6sw8135ea126wpgc-wpengine.netdna-ssl.com/wp-content/uploads/sites/46/2018/03/PAARI-One-Pager-March-2018.pdf.; Knopf, A. (2017). Deflection summit finds police want treatment for offenders. *Alcoholism and Drug Abuse Weekly, 29*(11), 1-3. https://doi.org/10.1002/adaw.30879.; Police-Assisted Addiction and Recovery Initiative. (n.d.). *About us*. https://paariusa.org/about-us/.; Police Executive Research Forum. (2016). *Building successful partnerships between law enforcement and public health agencies to address opioid use*. COPS Office Emerging Issues Forums. Office of Community Oriented Policing Services.

[10] Gloucester Police Department. (2019). *For addicts.* https://gloucesterpd.com/addicts/

[11] E. Guenther, personal communication, February 28, 2019.

[12] B. Gentes, personal communication, May 25, 2021.

[13] Divulging the source of this information would identify the treatment provider; we have been asked to mask the name of the treatment provider for additional anonymity and confidentiality.

[14] Individuals also included in the AWO group were from self-referral deflection programs in the state—AWO in McHenry County and Safe Passage in Lee County.

[15] State law does not require fingerprinting for misdemeanor c arrests or lower (effective January 1, 2000).

[16] U.S. Census Bureau (n.d.) QuickFacts Lake County, Illinois. https://www.census.gov/quickfacts/lakecountyillinois

[17] Illinois Department of Public Health (2018). *Drug overdose deaths by sex, age, group, race/ethnicity, and county, Illinois residents, 2013-2017*. www.dph.illinois.gov/sites/default/files/publications/Drug-Overdose-Deaths-Aug2018.pdf

[18] ICJIA analysis of CHRI data, 2018.

[19] Krawczyk, N., Picher, C. E., Feder, K. A., & Saloner, B. (2017). Only one in twenty justice- referred adults in specialty treatment for opioid use receive methadone or buprenorphine. *Health Affairs, 36*(12), 2046–2053. https://doi.org/10.1377/hlthaff.2017.0890

[20]Friedmann, P. D., Ducharme, L. J., Welsh, W., Frisman, L., Knight, K., Kinlock, T.,… Pankow, J. (2013). A cluster randomized trial of an organizational linkage intervention for offenders with substance use disorders: Study protocol. *Health and Justice, 1*(6). https://doi.org/10.1186/2194-7899-1-6; Taxman, F. S., Perdoni, M. L., & Caudy, M. (2013). The plight of providing appropriate substance abuse treatment services to offenders: Modeling the gaps in service delivery. *Victims & Offenders*, *8*(1), 70–93. https://doi.org/10.1080/15564886.2012.747459

[21] Chandler, R. K., Fletcher, B. W., & Volkow, N. D. (2009). Treating drug abuse and addiction in the criminal justice system: improving public health and safety. *JAMA, 301*(2), 183-190. https://doi.org/10.1001/jama.2008.976; Tsai, J., & Gu, X. (2019). Utilization of addiction treatment among U.S. adults with history of incarceration and substance use disorders. *Addiction Science & Clinical Practice*, *14*. https://doi.org/10.1186/s13722-019-0138-4

[22] Feder, K. A., Krawczyk, N., Mojtabai, R., Crum, R. M., Kirk, G., & Mehta, S. H. (2019). Health insurance coverage is associated with access to substance use treatment among individuals with injection

drug use: Evidence from a 12-year prospective study. *Journal of Substance Abuse Treatment*, *96*, 75–81. https://doi.org/10.1016/j.jsat.2018.08.012

[23] Bouchery, E. E., Harwood, H. J., Dilonardo, J., & Vandivort-Warren, R. (2012). Type of health insurance and the substance abuse treatment gap. *Journal of Substance Abuse Treatment*, *42*(3), 289–300. https://doi.org/10.1016/j.jsat.2011.09.002

[24] Marlowe, D. B. (2009). Evidence-based sentencing for drug offenders: An analysis of prognostic risks and criminogenic needs. *Chapman Journal of Criminal Justice*, *1*, 167–201.

[25] Belenko, S., & Peugh, J. (2005). Estimating drug treatment needs among state prison inmates. *Drug and Alcohol Dependence*, *77*, 269-281. https://doi.org/10.1016/j.drugalcdep.2004.08.023

[26] Belenko, S., Hiller, M., & Hamilton, L. (2013). Treating substance use disorders in the criminal justice system. *Current Psychiatry Reports*, *15*(11), 414. https://doi.org/10.1007/s11920-013-0414-z.; Belenko, S., & Peugh, J. (2005). Estimating drug treatment needs among state prison inmates. *Drug and Alcohol Dependence*, *77*, 269-281. https://doi.org/10.1016/j.drugalcdep.2004.08.023.; Taxman, F. S., Perdoni, M. L., & Caudy, M. (2013). The plight of providing appropriate substance abuse treatment services to offenders: Modeling the gaps in service delivery. *Victims & Offenders*, *8*(1), 70–93. https://doi.org/10.1080/15564886.2012.747459.; Taxman, F. S., Perdoni, M. L., & Harrison, L. D. (2007). Drug treatment services for adult offenders: The state of the state. *Journal of Substance Abuse Treatment*, *32*(3), 239–254. https://doi.org/10.1016/j.jsat.2006.12.019

[27] Open Society Foundations. (2018). *Police and harm reduction: how law enforcement can advance public safety, public health, and public confidence*. Author.

[28] Appel, P. W., Ellison, A. A., Jansky, H. K., & Oldak, R. (2004). Barriers to enrollment in drug abuse treatment and suggestions for reducing them: Opinions of drug injecting street outreach clients and other system stakeholder. *The American Journal of Drug and Alcohol Abuse*, *30*(1), 129-153. https://doi.org/10.1081/ADA-120029870.; Open Society Foundations. (2018). *Police and harm reduction: how law enforcement can advance public safety, public health, and public confidence*. Author.; Pullen, E., & Oser, C. (2014). Barriers to substance abuse treatment in rural and urban communities: Counselor perspectives. *Substance Use & Misuse*, *49*(7), 891-901. https://doi.org/10.3109/10826084.2014.891615.; Schiff, D. M., Drainoni, M., Weinstein, Z. M., Chan, L., Bair-Merritt, M., & Rosenbloom, D. (2017). A police-led addiction treatment referral program in Gloucester, MA: Implementation and participants' experiences. *Journal of Substance Abuse Treatment*, *82*, 41-47. https://doi.org/10.1016/j.jsat.2017.09.003

[29] Police Executive Research Forum. (2016). *Building successful partnerships between law enforcement and public health agencies to address opioid use*. COPS Office Emerging Issues Forums. Office of Community Oriented Policing Services.

[30] Call, V. R. A., Otto, L. B., & Spenner, K. I. (1982). *Tracking respondents: A multi-method approach*. D.C. Heath.; Claus, R. E., Kindleberger, L. R., & Dugan, M. C. (2002). Predictors of attrition in a longitudinal study of substance abusers. *Journal of Psychoactive Drugs*, *34*(1), 69-74. https://doi.org/10.1080/02791072.2002.10399938

ILLINOIS CRIMINAL JUSTICE INFORMATION AUTHORITY

300 W. ADAMS STREET, SUITE 200

CHICAGO, ILLINOIS 60606

PHONE: 312.793.8550

TDD: 312.793.4170

WWW.ICJIA.STATE.IL.US

FOLLOW US