Effect of Police Action on Low-Barrier Substance Use Disorder Service Utilization

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Short Report

Keywords: opioid use disorder, substance use disorder, medications for opioid use disorder, police action, bridge clinic

Posted Date: February 22nd, 2022

DOI: <https://doi.org/10.21203/rs.3.rs-1374808/v1>

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Abstract

Background: Police action can increase risky substance use patterns by people who use drugs (PWUD), but it is not known how increased police presence affects utilization of low-barrier substance use disorder bridge clinics. Increased police presence may increase or decrease treatment-seeking behavior. We examined whether Operation Clean Sweep (OCS), a two-week police action in Boston, MA, affected visit volume in BMC's low-barrier buprenorphine bridge clinic.

Methods: In this retrospective cohort, we used segmented regression to investigate whether the increased police presence during OCS was associated with changes in bridge clinic visits. We used General Internal Medicine (GIM) clinic visit volume as a negative control. We examined visits during the 6 weeks prior, 2 weeks during, and 4 weeks after OCS (June 18-Sept 11, 2019).

Results: Bridge clinic visits were 2.8 per provider-session before, 2.0 during, and 3.0 after OCS. The mean number of GIM clinic visits per provider session before OCS was 7.0, 6.8 during, and 7.0 after OCS. In adjusted segmented regression models for bridge clinic visits, there was a non-significant level increase (0.6434, $P=0.17$) and significant decrease in slope (0.0995, $P=0.045$) during OCS. After OCS completed, there was a significant level increase (1.4425, $P=0.003$) and slope increase (0.1406, $P=0.0066$) in visits ($P=0.01940$). There was no significant change in GIM clinic volume during the study period.

Conclusions: The increased policing during OCS was associated with a significant decrease in bridge clinic visits. Following the completion of OCS, there was a significant increase in clinic visits, suggesting pent-up demand for a life-saving treatment.

Introduction

Policing strategies can impact substance use patterns and associated risks in people who use drugs (PWUD). Increased policing can displace PWUD from their usual communities, drug supply, and injection equipment resulting in riskier injection practices (1–3). Substance use disorder (SUD) bridge clinics provide low-barrier, on-demand access to medications for opioid use disorder as well as overdose prevention, harm reduction, and infection screening (4–8). These clinics serve a population at high risk of overdose and infectious complications of injection drug use (5). While police presence can reduce PWUD's access to harm reduction services, less is known about how this presence affects utilization of low-barrier SUD treatment services (9).

On August 1st, 2019 the Boston Police Department (BPD) initiated Operation Clean Sweep (OCS), which increased police presence in a several-block radius in Boston, MA where public drug exchange and substance use are common(10). Thirty-four arrests were made in the first two days, nearly half due to prior warrants and a quarter due to active drug possession (11). This neighborhood also contains robust harm reduction and SUD treatment services designed to serve PWUD and those experiencing homelessness. The aim of this study is to examine the association between OCS and service utilization at Faster Paths, a low-barrier SUD bridge clinic in the impacted neighborhood (5).

Methods

In this retrospective cohort study, we used clinical data from Faster Paths, the low-barrier SUD bridge clinic at Boston Medical Center (BMC), a safety net hospital in the Boston, MA neighborhood where OCS took place, to examine the association between OCS and service utilization. The Faster Paths patient population, including demographics and clinical characteristics, have been previously described (5). We used an interrupted time series design to investigate whether OCS was associated with changes in our primary outcome, the number of daily Faster Paths clinic visits. Interrupted time series is a quasi-experimental approach applied to longitudinal data in consistent intervals to assess for changes in outcomes following an intervention such as OCS (12). In order to control for secular and seasonal trends in clinic visit volume and

allow us to evaluate the effect of the intervention, we compared Faster Paths visit volume to daily General Internal Medicine (GIM) clinic visits as a negative control. The GIM clinic is an academic general primary care practice in the same safety-net facility that serves a much broader population of patients, most of whom do not have SUD which has been previously described(13). Due to differences in staffing between Faster Paths and GIM, the model was adjusted for number of provider sessions per day; both practices define one session as four hours of clinical care.

We divided the study into the six-week pre-OCS period (June 20-July 31, 2019), the two-week period when OCS was active (August 1-August 13, 2019), and a four-week post-OCS period (August 14- September 11, 2019). Though daily assessments of clinic volume had substantial day-to-day variability, we selected a daily interval to allow for enough observations during the intervention period to assess for changes in visit volumes. We plotted daily clinic visits during the study period and used segmented linear regression to test for changes in the number of Faster Paths and GIM clinic visits before, during, after OCS. We included terms for baseline trend as well as slope and level changes during the intervention (OCS) and after the intervention (after OCS). A slopes change indicates gradual change in the outcome during the assessment period and level changes indicate immediate changes following an intervention. To prevent biased trends due to inclusion of non-significant terms, we selected the model using backward selection, sequentially removing terms with $p > 0.20$ and adjusted for autocorrelation (12). All analyses were conducted with SAS, Version 9.4 (SAS Institute Inc, Cary, NC, USA). The Boston University Medical Campus Institutional Review Board approved this study as non-human subjects research.

Results

During the 84 days (12 weeks) of the study, a total of 608 clinic visits were completed in Faster Paths and 21,381 in GIM. Faster Paths clinic visits averaged 2.8 per provider/session [standard deviation (SD) 0.9] pre-OCS, 2.0 (SD 0.7) during OCS, and 3.0 (SD 1.4) after OCS. The mean number of GIM clinic visits per provider session before OCS was 7.0 (SD 0.6), during OCS was 6.8 (SD 0.6), and after OCS was 7.0 (SD 0.6). In adjusted segmented regression models, there was a small baseline slope decrease in visit volume in Faster Paths (-0.0209 , $P=0.0158$). During OCS, there was a non-significant level increase (0.6434 , $P=0.17$) and significant decrease in slope (0.0995 , $P=0.045$) (Table 1). After OCS, there was a significant level increase (1.4425 , $P=0.003$) and slope increase (0.1406 , $P=0.0066$) in Faster Paths clinic visits (1.3078 , $P=0.01940$). In adjusted segmented regression models for GIM clinics, there was a small, non-significant decrease in slope during OCS (-0.0165 , $P=0.0832$). After OCS completed, there was a small non-significant slope increase in clinic visits (0.0272 , $P=0.0898$).

Compared to projected number of visits based on pre-intervention baseline trends, visits decreased from an estimated 2.1 to 1.3 at the end of OCS and increased from 1.3 to 3.3 one month after OCS (Figure 1), a relative difference of 2 visits per session. Estimated GIM clinic visits based on the pre-intervention baseline trend were stable at 6.9. Modeled results for GIM visits show decrease to 6.7 at the end of OCS before returning to 7.0 one month after OCS, non-significant changes (Figure 1).

Discussion

People who inject drugs and other people with SUD are a highly policed population (3). This study suggests that a two-week police action in Boston, MA was associated with a significant decrease in clinic visits at a low-barrier substance use disorder bridge clinic. Faster Paths clinic also saw a doubling in volume following the conclusion of OCS, suggesting pent-up demand for clinic services.

Our results add to a growing body of evidence on the consequences of police actions on PWUD. Prior work has demonstrated that PWUD displaced from their usual locations and those who fear police reprisal engage in riskier injection practices including supply sharing and injecting alone, thereby increasing risk of bacterial infections, HIV, viral hepatitis, and death from overdose (1–3, 14). These hardships are disproportionately felt by people experiencing homelessness and

people of color as more resourced PWUD are able to find indoor spaces to inject and people of color are more highly policed (1). Consistent with other studies, in these data we observed decrease bridge clinic utilization following increased police presence (1, 14, 15).

Our finding that increased police presence was associated with reduced bridge clinic service utilization is concerning for several reasons. Buprenorphine, the primary medication prescribed by Faster Paths for SUD during the study period, is associated with robust individual and community benefits. People with SUD treated with buprenorphine are less likely to die of opioid overdose or of any other cause and reduce risk behaviors that lead to transmission of infections like HIV (15). Black patients have less access to high-quality addiction treatment. This systemic inequity is likely exacerbated by police crackdowns which disproportionately affect minoritized populations (1, 16, 17). Thus, police actions like OCS designed to reduce the community impact of SUD may have opposite consequences, and those consequences may exacerbate underlying systemic race-based inequities (18, 19). Future SUD-directed initiatives may be more effective if delivered by medical, behavioral health, and public health teams. If police actions continue, they should mitigate harms on PWUD by fostering and incorporating overdose prevention, other harm reduction services, and engagement in treatment for those who are interested instead of merely increasing the number of incarcerated or displaced persons struggling with addiction. SUD treatment programs must also take steps to increase service availability and examine approaches to racial equity. Since OCS, Faster Paths has started to distribute harm reduction equipment, to offer telemedicine-based buprenorphine initiation during the COVID pandemic, and to collaborate with Emergency Department colleagues on a quality improvement initiative designed to improve racial inequity in buprenorphine and methadone administration and initiation (4, 8).

Our study has limitations. As a single center analysis, our findings may not be generalizable to other locations or time periods. Further, we were unable to determine if OCS resulted in a compensatory increase in bridge clinic and other addiction service utilization in other Boston neighborhoods or nearby cities. We were unable to adjust for patient-level characteristics which may be associated with visit attendance. Additionally, as OCS occurred over a short time period we used daily assessments in our modeling approach which increases variability in the data and subsequently the possibility of utilization differences by random chance. Though we use GIM as a negative control to protect against seasonal variability, we are unable to adjust for differential effects on seasonality in the two clinics. Finally, we use a quasi-experimental design; this is observational data with a high degree of variability which precludes a causal interpretation.

This study found that increased police presence was associated with decreased service utilization at a low-barrier SUD clinic. Public health policymakers, law enforcement, and health service providers, including harm reduction and treatment providers, should consider and work to mitigate the unintended harms to access to substance use care when police actions are conducted among people who use drugs.

Abbreviations

PWUD: people who use drugs

SUD: substance use disorder

BPD: Boston Police Department

OCS: Operation Clean Sweep

BMC: Boston Medical Center

GIM: General Internal Medicine

Declarations

Ethics of approval and consent to participate

Boston Medical Center IRB staff (Reference H-39253) reviewed this work and determined it to not qualify as human subjects research.

Consent for publication

NA

Availability of data and materials

The datasets generated and analyzed during the current study are available from the corresponding author on reasonable request.

Funding

This work was supported by a grant from the Massachusetts Department of Public Health Bureau of Substance Addiction Services [1NTF230M03163724179] (Kehoe, Taylor).

Authors' contributions

KW contributed to the conception and design of the work, interpretation of the data, drafted the work, and revisions. SK contributed to the conception, data analysis, and interpretation of the data, and revisions. JK contributed to data acquisition and revisions. ML contributed to data analysis and interpretation. AW contributed to design of the work, interpretation of data, and revision. JT contributed to the conception and design of the work, data acquisition and interpretation, and revisions. All authors approved the submitted version and agree to be accountable for their own contributions.

Acknowledgements

NA

Competing interests

Simeon Kimmel served as a consultant for Abt Associates on a DPH-funded project to improve access to medications for opioid use disorder in nursing facilities. Marc Larochelle reports receiving consulting funds for research paid to Boston Medical Center. Alexander Walley is the medical director for opioid overdose prevention programs at the Massachusetts Department of Public Health.

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Tables

Table 1: Results of backward selection for interrupted time series parameters of Operation Clean Sweep and Faster Paths and General Internal Medicine Clinic Visit Volume, Boston, MA June-September, 2019

a) Faster Paths¹

	Baseline Trend		OCS level change		OCS slope change		After OCS level change		After OCS slope change	
	Estimate	P-value	Estimate	P-value	Estimate	P-value	Estimate	P-value	Estimate	P-value
Full Model	-0.0209	0.0158	0.6434	0.1712	-0.0995	0.045	1.4424	0.0032	0.1406	0.0066

¹As no terms had p-values greater than 0.2, all terms remained in the model.

b) General Internal Medicine²

	Baseline Trend		OCS level change		OCS slope change		After OCS level change		After OCS slope change	
	Estimate	P-value	Estimate	P-value	Estimate	P-value	Estimate	P-value	Estimate	P-value
Full Model	0.002200	0.6973	-0.0658	0.8362	-0.0195	0.5151	0.0698	0.8160	0.0260	0.3963
Step 1	0.001659	0.7381			-0.0242	0.2216	0.0948	0.7291	0.0310	0.0970
Step 2					-0.0196	0.1657	0.0802	0.7647	0.0282	0.0877
Step 3					-0.0165	0.0832			0.0272	0.0898

²Terms with p-values greater than 0.2 were sequentially removed from the model.

Figures

a) Faster Paths

b) General Internal Medicine

Figure 1

Estimated trends in visit volume at Faster Paths and General Internal Medicine before and after Operation Clean Sweep (OCS), June 20th, 2019 – September 11th, 2019