



Research Paper

Police attitudes towards pre-booking diversion in Baltimore, Maryland

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ABSTRACT

Background: In the context of high rates of drug-related incarceration that disproportionately affect urban communities of colour, advocates for drug policy criminal justice reform have called for alternatives to mass incarceration. The Law Enforcement Assisted Diversion (LEAD) program redirects low-level drug offenders to health and social services rather than immediately into the criminal justice system. In advance of piloting LEAD in Baltimore City, we assessed police perceptions towards harm reduction and specifically pre-booking diversion in effort to inform training and implementation activities in Baltimore City and elsewhere.

Methods: We administered a survey to Baltimore City Police Officers (N = 83) in the planned implementation district using two scales: the first measured police attitudes toward people who use drugs (PWUD), current drug policies and public health measures, and the second measured police perceptions of pre-booking diversion programs. We calculated Cronbach's alpha (α) to assess internal consistency of both scales. Bivariate χ^2 tests and multivariate logistic regression examined correlates of scale items stratified by new and seasoned officers.

Results: Seasoned officers were significantly less likely to believe that drug treatment is easily available (51% vs. 81%, $p = 0.005$). The belief that current policies are effective and that PWUD should be arrested for small drug purchases decreased significantly per year on the force (aOR: 0.92; 95%CI 0.85, 0.99; aOR: 0.94, 95% CI 0.88, 0.99, respectively), as did concerns about needle-stick injuries (aOR: 0.85, 95% CI 0.74, 0.98). Seasoned officers were significantly more comfortable referring PWUD to social services (100% vs. 83%, $p = 0.006$), and agree that such pre-booking diversion could be effective in improving public safety within (72% vs. 43%; $p = 0.009$) and beyond the intervention area (56% vs. 33%, $p = 0.04$).

Conclusions: The study indicates the value of intervening early and consistently throughout police career trajectories and engaging seasoned officers as allies to promote recognition and support of public health and harm reduction strategies within ongoing police reform efforts. LEAD provides important and broad opportunities for training police to enhance their understanding the intersection of public safety and public health.

Introduction

The United States imprisons more of its population than any other country worldwide (P. Wagner & Walsh, 2016). Since the federal inception of the “War on Drugs” by the administration of Richard Nixon in the early 1970s, people who use drugs (PWUD) and people of colour have been disproportionately impacted by the growing mass incarceration crisis (Mauer, 2011; Moore & Elkavich, 2008; The Sentencing Project, 2016). An estimated \$56 billion USD of federal and state government costs are attributable to substance use-related arrests,

adjudication, incarceration, and community supervision, and an additional \$40 billion in lost productivity occurs among people arrested and incarcerated on drug-related offenses, or “drug offenders” (National Drug Intelligence Center, 2011). Further, there is very little evidence to support incarceration as an effective policy to combat substance use and dependency, and resulting consequences for individual and community health (Genberg, Astemborski, Vlahov, Kirk, & Mehta, 2015); in fact, aggressive policing has been shown to have a negative impact on the uptake of public health prevention programs and behaviours related to drug use in various domestic and international settings (Bonhert

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et al., 2011; Cooper, Moore, Gruskin, & Krieger, 2005; Davis, Burris, Kraut-Becher, Lynch, & Metzger, 2005; Flath, Tobin, King, Lee, & Latkin, 2017; Hammett et al., 2005; Jardine, Crofts, Monaghan, & Morrow, 2012; Pollini et al., 2008; Rhodes et al., 2006; Wagner, Simon-Freeman, & Bluthenthal, 2013; Werb et al., 2008; Wood et al., 2003). Discriminatory enforcement of drug legislation results in disparities in arrests and incarceration along racial, ethnic and socioeconomic lines, further disadvantaging marginalized or vulnerable communities (Beckett, Nyrop, Services, Pflingst, & Bowen, 2005; Beckett, Nyrop, & Pflingst, 2006; Mitchell, Caudy, Mitchell, & Caudy, 2017; *The Sentencing Project*, 2016). Epidemic rates of incarceration, particularly among African-Americans, impede social and family cohesion, increase rates of single-parenthood and drive accompanying educational, mental and public health consequences for children of individuals in the penal system, compounding the cycle of poverty among communities of colour (Western & Wildeman, 2009). Incarceration can interrupt regimens of care, including mental health services and management of long-term chronic diseases, and has been identified as a risk factor for transmission of HIV among African-American communities (Harawa & Adimora, 2008). Punitive zero-tolerance drug legislation and its enforcement magnify stigmatization of PWUD and their communities, which has been shown to impact mental and physical health, uptake of health and social services, and create a barrier to treatment access and interaction with wider community networks crucial to social re-integration (Ahern, Stuber, & Galea, 2007; Copeland, 1997; Lloyd, 2013; van Boekel, Brouwers, van Weeghel, & Garretsen, 2013); in turn, higher levels of stigma towards PWUD are also associated with greater public support for punitive policies and lower support for public health or harm reduction approaches to drug use (Kennedy-Hendricks et al., 2017). The complex aetiology of addiction, poor results and uneven implementation of existing policies, and expense and human rights concerns of incarceration trends in the US have led to an increased focus on aligning public safety and public health strategies in addressing drug use and related criminal activity (Akers & Lanier, 2009; Cooper, 2015; Jurgens, Csete, Amon, Baral, & Beyrer, 2010; Midford, Acres, Lenton, Loxley, & Boots, 2002; Wood, Taylor, Groff, & Ratcliffe, 2015).

In response to what many consider the failings of the criminal justice system in the United States, an innovative approach entitled the Law Enforcement Assisted Diversion Program (LEAD) was adopted in Seattle in 2011 and is being replicated in over a dozen cities across the country. LEAD is a pre-booking diversion program aimed at redirecting low-level drug offenders to social services, rather than immediately into the criminal justice system. This strategy, rooted in the harm reduction philosophy and designed to promote health equity and racial justice, was developed out of a unique collaboration between public health professionals, public defenders, prosecutors and police in an effort to respond to disproportionate arrests of African-Americans in a commercial district in King County, Seattle. It is intended to interrupt a cycle that currently perpetuates social, racial and health inequities among populations disproportionately impacted by police interaction and incarceration (Collins, 2016). An initial evaluation of the Seattle LEAD program revealed that compared to control participants, individuals in LEAD had a 60% lower odds of arrest in the following six months and had a significantly lower odds of being charged with a felony (Collins, Lonczak, & Clifasefi, 2016; Collins, Lonczak, & Clifasefi, 2015). Participants were also more likely to acquire housing and gainful employment and reported overwhelmingly positive experiences with and perceptions of LEAD case management (Clifasefi & Collins, 2016; Clifasefi, Lonczak, & Collins, 2016). While these data demonstrate the impact of LEAD in Seattle, its replicability is unknown, particularly in cities with higher rates of substance use and socioeconomic challenges, such as Baltimore. Furthermore, the majority of available evidence on facilitators and barriers to pre-booking diversion for PWUD is derived from grey literature and focuses on community perceptions, participant retention, and adequacy of resources to effectively provide

care (National Center for Mental Health and Juvenile Justice, 2013; GAINS Center, 2007; Reuland, 2004), and there is a marked paucity of data regarding barriers on the part of law enforcement.

In January 2016, Baltimore City received a grant from the Open Society to plan a three-year pilot of the Law-Enforcement Assisted Diversion Program to be implemented in one of the city's largest open-air drug markets. The current work reports knowledge, attitudes and practices of Baltimore Police Officers collected as a component of the evaluation of the planning phase of the Baltimore City LEAD Pilot Program. Given the critical importance of police discretion and commitment to harm reduction in pre-booking diversion (Collins, 2016), understanding police perceptions and engaging police officers in the planning and implementation of LEAD in this setting is crucial to supporting its intended impacts of alleviating the overwhelming rates of arrest, overdose, and racial inequity in Baltimore.

The Baltimore City LEAD pilot planning phase

Baltimore City has been among the most dramatic examples of the US incarceration and substance use crises alike. Baltimore City has high rates of illicit drug use, as well as associated rates of HIV, HCV, and overdose (Keen, Khan, Clifford, Harrell, & Latimer, 2014; Maryland Department of Health and Mental Hygiene, 2016). As of 2010, the Baltimore City Detention Center (BCDC) detained the highest proportion of its residential population in jail compared to the other large metropolitan areas in the U.S., with the majority held pre-trial for low-level charges, mostly drug possession (Justice Policy Institute, 2010; Justice Policy Institute, 2015). Additionally, 90% of the BCDC population were African American, despite African Americans comprising only 64% of Baltimore's population at the time (*The Sentencing Project*, 2016). Urban African American communities often have limited resources to avoid, address, or recover from such criminal justice interactions, further weakening social networks and cohesion (Western & Wildeman, 2009). In combination with combating the high rates of incarceration, recidivism, overdose-related deaths and diseases associated with drug use, these communities have borne the brunt of police brutalities, exacerbating tensions between people of colour, primarily African American, and law enforcement in the city.

These divisions were spotlighted nationally and internationally in April 2015 during the Baltimore Uprising, catalysed by the death of young man named Freddie Gray while in police custody, which was followed by the federal Department of Justice (DOJ) investigation of the Baltimore Police Department (Department of Justice, 2016). The Baltimore Police Department (BPD) is the 8th largest in the country, with approximately 2600 officers who rotate throughout different precincts of the city (US Department of Justice, 2016). In April 2017, Baltimore City and the BPD entered into a legal agreement called a Consent Decree with the DOJ focused on building community trust, creating a culture of community and problem-oriented policing, prohibiting unlawful stops and arrests, preventing discriminatory policing and excessive force, ensuring public and officer safety, enhancing officer accountability, and making needed technological upgrades. In the wake of this agreement, Maryland state and local governments are seeking effective and sustainable alternatives to policing and incarceration, as the means of addressing needs of communities challenged by racialized "war on drugs" policies and resulting contentious relationships between communities of colour and law enforcement.

In 2016, Baltimore City oversaw a yearlong collaborative and inclusive planning process for LEAD implementation in the west-side of downtown in historic Lexington market, chosen due to its high density of drug activity and concurrent business development. The process engaged the city's behavioural health authority, the Mayor's Office, law enforcement, prosecutors, public defenders, and community stakeholders through the establishment of the LEAD Coordinating Council. An evaluation was conducted that included key informant interviews with members of the Coordinating Council aimed to understand

motivation for participation, comprehension of LEAD goals, and perspectives on the problem of drug crime and incarceration. Anonymous surveys were also administered to officers of the BPD who work in the location where the pilot was planned, to document their opinions of PWUD and treatment, as well as innovative policing such as LEAD. LEAD provides a means by which the paradigm of law enforcement can be shifted to help address social determinants of health and public safety alike. As such, an understanding of police perceptions is crucial to achieving buy-in and designing appropriate training and implementation tools suited to this setting. The current study evaluates police attitudes towards people who use drugs and drug policies in advance of implementing LEAD.

Methods

Evaluation of the LEAD planning phase

Evaluation of the LEAD Planning Process was conducted between February and December 2016 by the Johns Hopkins Bloomberg School of Public Health in advance of the implementation of pilot program in February 2017. The research team developed data collection tools that utilized their expertise in Baltimore City policies, programs and communities, and built upon research conducted in the evaluation of the Seattle LEAD program (Clifasefi & Collins, 2016; Clifasefi et al., 2016; Collins et al., 2015, 2016). Broadly, the evaluation was conducted to ascertain if all parties involved in LEAD planning were adequately engaged, and had sufficient opportunity to contribute to program planning and development. A key component of the evaluation sought to understand police attitudes towards diversion programs and public health. The research team attended numerous workgroup meetings of the LEAD Coordinating Council and conducted a survey with BPD officers comprising the quantitative portion of the LEAD evaluation.

Survey design & administration

Questions and scale items were designed to assess knowledge, attitudes and practices of police officers regarding their engagement with people who use drugs and their understanding and beliefs about LEAD objectives and activities. The scale development was principally informed by a qualitative study of police attitudes towards syringe access, occupational needle-stick injury and drug use conducted to identify barriers to needle exchange services in the United States (Beletsky, Macalino, & Burris, 2005). Using this as a foundation, questionnaires were adapted based on discussions with the BPD, LEAD workgroup meetings, and additional more recent literature (Beletsky et al., 2011; Cepeda et al., 2017) to ascertain police perspectives towards PWUD and receptiveness and belief in harm reduction and public health approaches to law enforcement. Demographic items collected included race, age, gender, and the number of years on the police force. The survey ascertained attitudes in two scales. The first was a 12-item scale aimed at measuring attitudes towards people who use drugs (PWUD), drug policies, and public health. The second was a 6-item scale to describe attitudes towards a pre-booking diversion program. Responses were collected using a four-point Likert scale assessing degree of agreement with each statement (strongly agree, agree, disagree, strongly disagree). Items explored beliefs about adequacy of current policing practices, availability of treatment and social services for PWUD in Baltimore City, and roles, responsibilities and risks involved in policing drug use.

Surveys took place in October–November 2016 over the course of 15 roll calls in the police district where LEAD was eventually piloted beginning in February 2017. Surveys were administered to bicycle, vehicle and foot patrol officers responsible for the target intervention area. Two researchers attended early morning, afternoon and evening shift roll calls to administer surveys. Goals of LEAD and of this survey were outlined alongside risks and benefits of participation and oral

consent was obtained. In accordance with BPD policy, no compensation was offered. The survey was administered on paper and took approximately 5–7 minutes to complete. The study was approved by the Johns Hopkins Bloomberg School of Public Health Institutional Review Board.

Data analysis

Data was entered and analysed in March 2017 using STATA v13 (StataCorp, 2013). Complete case analysis was used. Age was categorized into three groups (< 30, 31–40, > 40), while race, gender and years on the force were analysed as binary covariates (white/non-white; male/female; fewer/greater than the median number years on the force referred to as “seasoned” and new police). The attitudinal scales’ responses were collapsed into a binary outcome (agree/disagree). We calculated a Cronbach’s alpha (α) to assess internal consistency of each scale. Years on the force was ascertained as a continuous variable, and binary categories for police tenure were defined by the median number of years served in the sample (“seasoned” i.e. ≥ 8 years vs. “new” i.e. < 8 years) Bivariate analyses examined associations between scale items with demographic characteristics of interest (e.g., gender, years on the force, race) using a χ^2 test. Logistic regression was used to examine correlates of police attitudes towards PWUD, policies and programs. Adjusted models assessed the influence of years on the force as a continuous variable on survey responses controlling for race and gender. The threshold for significance for statistical analyses was $p < 0.05$.

Results

Of 120 officers working in the district, 93 (78%) were present at roll call sessions, 83 (89%) of whom agreed to complete the survey. Twenty-one of the 83 surveys had at least one response missing: 9 (11%) were missing at least one demographic field; 13 (16%) were missing one or more responses on attitudes towards PWUD, policies and public health (Scale 1); and 6 (7%) were missing at least one item assessing attitudes towards pre-booking diversion (Scale 2).

Demographic characteristics of respondents are shown in Table 1. The sample was majority white (49%), male (87%), and worked an average of 9.5 years on the police force.

Table 1
Sociodemographic characteristics and Baltimore City Police (n = 83).

	% (n)
Age	
21–30	42.2 (35)
31–40	30.1 (25)
41 +	25.3 (21)
Missing	2.4 (2)
Race/ethnicity	
African-American	31.3 (26)
White	49.4 (41)
Hispanic/Latino	12.1 (10)
Not listed (describe)	3.6 (3)
Missing	3.6 (3)
Gender	
Man/male	86.8 (72)
Woman/female	8.4 (7)
Not listed (describe)	0 (0)
Missing	4.8 (4)
No. years with BPD	
Mean (SD)	9.5 (8.1)
Median (IQR)	7 (3–15)
Missing [% (n)]	6 (5)

Table 2
Baltimore City Police attitudes about PWUD, low-level drug policies, and public health by number of years on force (N = 83).

	Proportion of respondents who agreed or strongly agreed with survey item			χ^2 p-value
	Total (n = 83) %(n)	Years on force (n = 78)		
		< 8 (n = 41) %(n)	\geq 8 (n = 42) %(n)	
1. Drug treatment is easily available for drug users who want to get into treatment in Baltimore City.	65.8 (54)	80.5 (33)	51.2 (21)	0.005
2. Drug users have a lot of social services available to them (housing, counseling, etc.).	74.4 (61)	78.1 (32)	70.7 (29)	0.448
3. Current policing policies to address low-level drug use are effective.	28.8 (23)	37.5 (15)	20.8 (8)	0.084
4. Arrest is the best way to get drug users to stop engaging in illegal activity around drug use.	16.1 (13)	14.6 (6)	17.5 (7)	0.725
5. Drug users should be arrested for buying small quantities of drugs.	63.8 (51)	73.2 (30)	53.9 (21)	0.072
6. Getting HIV or other infectious diseases from drug users is a big concern for me as a police officer.	93.9 (77)	97.6 (40)	90.2 (37)	0.166
7. If injection drug users have access to clean needles through pharmacies or needle exchange that promotes drug use.	62.5 (80)	70.7 (29)	53.9 (21)	0.119
8. The needle exchange program helps drug users get into drug treatment.	26.6 (21)	27.5 (11)	25.6 (10)	0.852
9. Needle stick injuries are a big concern for me as a police officer.	95.1 (77)	100 (41)	90.0 (36)	0.038
10. I would feel comfortable referring drug users to social services (housing, counseling, etc.).	91.5 (75)	82.9 (34)	100.0 (41)	0.006
11. I would refer an injection drug user to the City's needle exchange program.	69.1 (56)	65.0 (26)	73.2 (30)	0.426
12. Public health and public safety have similar goals in helping drug users.	67.1 (53)	71.1 (27)	63.4 (26)	0.470

Statistically significant findings shown in bold ($p < 0.05$).

Attitudes about PWUDs, drug policies and public health

The 12-item scale had a low internal consistency ($\alpha = 0.39$) across the entire sample ($n = 83$), with a higher internal consistency among newer compared to seasoned officers (0.71 vs. 0.60, respectively).

There were significant differences in this attitudinal scale comparing newer and seasoned officers (Table 2). Compared to newer officers, seasoned officers were significantly less likely to believe that drug treatment is easily available to those who want it (51% vs. 81%, $p = 0.005$) and to view needle-stick injuries as a big occupational concern (90% vs. 100%, $p = 0.038$). Seasoned officers were significantly more comfortable than new officers referring PWUD to social services (100% vs. 83%, $p = 0.006$). There were no significant differences in survey responses according to gender or race of respondent. In univariate models, the likelihood of reporting that drug treatment is easily accessible to PWUD and that PWUD should be arrested for buying small quantities of drugs both decreased significantly with each additional year spent on the force (uOR: 0.93; 95% CI 0.88-0.99 and uOR: 0.93; 95% CI 0.88, 0.99, respectively). Concerns about contracting HIV (uOR: 0.89; 95% CI 0.80, 0.99) or other infectious diseases and sustaining needle-stick injuries (uOR: 0.84; 95% CI 0.73, 0.97) decreased significantly with each additional year of experience. Seasoned officers were marginally more likely to report being more comfortable referring PWUD to social services, but this was not significant (uOR: 1.67; 95% CI 0.98, 2.84). When estimates were adjusted for gender or race, no changes to inference were detected (Table 4). We did not adjust for age due to collinearity with years on the force.

Attitudes towards a pre-booking diversion program

The internal consistency of the six-item scale across all respondents was high ($\alpha = 0.84$), with a higher alpha among those newer compared to seasoned officers ($\alpha = 0.86$ vs. $\alpha = 0.82$, respectively). There were significant differences in this attitudinal scale by the number of years on the force but not gender or race (Table 3). Compared to newer officers, seasoned officers were significantly more likely to agree that such a program would be effective in reducing crime and improving public safety (72% compared with 43%; $p = 0.009$) and that such a pilot program could result in reducing crime in other areas of town (56% vs. 33%, $p = 0.04$). After adjustment for gender and race, seasoned officers were significantly more likely to believe that LEAD would reduce crime

and improve public safety (aOR 1.09; $p = 0.023$), but no other significant associations were detected (Table 4).

Discussion

We conducted an exploratory study employing two novel scales to assess perceptions of PWUD and drug policies among police in advance of implementing a new pre-booking diversion program, the first of its kind in Baltimore, Maryland. We found that years on the force was a significant factor in knowledge of existing services for PWUD as well as attitudes towards the adequacy of current arresting practices. Specifically, officers with less experience on the force were more unified in their beliefs and more commonly felt that PWUD can easily access services and should be arrested for buying small quantities of drugs. In contrast, seasoned officers were more likely to acknowledge barriers to drug treatment access and felt more comfortable referring PWUD to social services. These findings may speak to a tendency for officers with less experience to be informed by and rely on pre-conceived beliefs about criminal justice system and their roles and responsibilities, relative to seasoned officers whose years of experience can drive scepticism or nuance in attitudes towards existing policies towards people who use drugs (PWUD). The relative lack of familiarity and comfort with available social services and heightened fear of injury when interacting with PWUD reported among police with less experience on the force points to the significance of early-career training and the utility of engagement with service providers through trainings. Our second scale showed higher internal consistency overall and found that seasoned officers were more likely to appreciate the potential benefits of a pre-booking diversion program. Time on the force and patrolling in communities seems to be an important factor in humanizing PWUD and their needs to the police, highlighting the importance of sensitizing police cadets early in their career to drivers of drug use, availability of existing resources, and how and when to refer individuals to services in order to reduce stigma and promote the complementary strategies of public health and safety alike.

Concerns about needle-stick injuries were high, especially among newer officers, and should be addressed if police interactions with PWUD are to be shifted. Officers can be at a higher risk of occupational exposure to contaminated syringes in a context with high rates of injecting drug use such as Baltimore (Cepeda et al., 2017). Furthermore, this risk is inequitably distributed; officers of colour experience injuries

Table 3
Baltimore City Police attitudes towards pre-booking diversion program, N = 83.

	Proportion of respondents who agreed or strongly agreed with survey item			p-value
	Total (n = 83) % (n)	Years on force (n = 78)		
		< 8 (n = 41) %(n)	≥ 8 (n = 42) %(n)	
1. This kind of a program would be effective in reducing crime and improving public safety.	57.0 (45)	42.5 (17)	71.8 (28)	0.009
2. Having such a pilot program in a target area could result in drug crime decreasing in that specific area.	56.4 (44)	48.7 (19)	64.1 (25)	0.171
3. Having such a pilot program in a target area could result in drug crime decreasing in other areas of town.	44.9 (35)	33.3 (13)	56.4 (22)	0.040
4. This program is what the police should be doing.	48.0 (37)	50.0 (20)	54.1 (20)	0.722
5. It is appropriate for police and social workers to be working together to divert crime.	86.3 (69)	85.0 (34)	87.5 (35)	0.745
6. As an officer, I would be comfortable working with a social worker in my day to day work.	82.3 (65)	87.5 (35)	76.9 (30)	0.218

Statistically significant findings shown in bold (p < 0.05)/.

nearly three times more frequently in this context (Cepeda et al., 2017). However, overestimation of this risk among officers has been observed and carries the risk of reinforcing stigma towards and exacerbating negative interactions with PWUD (Beletsky, Thomas, Shumskaya, Artamonova, & Smelyanskaya, 2013; Beletsky et al., 2011; Davis & Beletsky, 2009; Strathdee et al., 2015), and the overall rate of transmission through this mechanism remains low (Cardo et al., 1997; Perio, 2016; Singh et al., 2012). In the context of LEAD implementation, minimizing the influence of these fears on the referral process will be crucial to ensuring that people who inject drugs (PWID), who already face higher rates of stigmatization, will be afforded the same opportunities for case management referrals as other participants. Appropriate training has been shown to both reduce police overestimation of these risks and help to reduce the risk itself (Beletsky et al., 2011, 2013; Davis & Beletsky, 2009). It is therefore important that training for LEAD and other similar programs address police feelings of risk and injury, with an aim to prevent these concerns from being a barrier to reaching the most marginalized PWUD (Cepeda et al., 2017).

Overall, a low percentage of police felt that current police policies were effective and even fewer felt that arrest for substance possession and/or usage are the best way to dissuade PWUD from engaging in criminal activity. Nonetheless, the majority still felt that these arrests should continue. Taken together, these data illustrate the complexities

in police perceptions towards drug use and crime, revealing that while many perceive failures of current policies, they exhibit either lack of knowledge or scepticism regarding alternate strategies. This may provide an opportunity for LEAD and harm reduction programs to fill gaps which officers themselves acknowledge exist, but this is unlikely to be met without some apprehension. That less than half of officers overall felt that this program is what the police should be doing represents a challenge for optimal delivery of police referrals to LEAD, and underscores the need for further police engagement and buy-in prior to and throughout implementation. Law enforcement agencies implementing LEAD are encouraged to conduct regular trainings on harm reduction, including reducing stigmas about drug use, at all levels of the agency (i.e. Academy, Promotion, and In-Service). If collecting data on police perspectives, these trainings could also offer opportunity for follow-up data collection and analysis of trends or shifts in perspective. This also includes training people in existing harm reduction laws (e.g. good Samaritan laws) and services (e.g., syringe services programs).

Police culture and sense of role can impede reform efforts, and lack of police enthusiasm has been highlighted as a barrier to implementing harm reduction strategies (Midford et al., 2002). Whether they agree with public health goals or not, police act as de-facto public health workers due to their level of engagement with individuals suffering from trauma, substance use disorder and other mental health issues and

Table 4
Trends in response to survey outcomes per each additional year on the force (univariate and adjusted odds ratios).

	uOR (95% CI)	aOR (95% CI)
Scale 1: Attitudes towards PWUD, drug policies & public health		
1. Drug treatment is easily available for drug users who want to get into treatment in Baltimore City.	0.93 (0.88, 0.99)	0.92 (0.86, 0.98)
2. Drug users have a lot of social services available to them (housing, counseling, etc.).	0.99 (0.93, 1.05)	0.97 (0.91, 1.04)
3. Current policing policies to address low-level drug use are effective.	0.95 (0.88, 1.02)	0.92 (0.85, 0.99)
4. Arrest is the best way to get drug users to stop engaging in illegal activity around drug use.	0.99 (0.92, 1.07)	0.97 (0.88, 1.06)
5. Drug users should be arrested for buying small quantities of drugs.	0.93 (0.88, 0.99)	0.94 (0.88, 0.99)
6. Getting HIV or other infectious diseases from drug users is a big concern for me as a police officer.	0.89 (0.80, 0.99)	0.90 (0.80, 1.00)
7. If injection drug users have access to clean needles through pharmacies or needle exchange that promotes drug use.	0.96 (0.91, 1.02)	0.96 (0.90, 1.01)
8. The needle exchange program helps drug users get into drug treatment.	0.99 (0.92, 1.05)	1.00 (0.93, 1.07)
9. Needle stick injuries are a big concern for me as a police officer.	0.84 (0.73, 0.97)	0.85 (0.74, 0.98)
10. I would feel comfortable referring drug users to social services (housing, counseling, etc.).	1.67 (0.98, 2.84)	1.77 (0.92, 3.41)
11. I would refer an injection drug user to the City's needle exchange program.	1.05 (0.98, 1.13)	1.06 (0.98, 1.14)
12. Public health and public safety have similar goals in helping drug users.	0.96 (0.91, 1.02)	0.96 (0.90, 1.02)
Scale 2: Attitudes towards pre-booking diversion program		
1. This kind of a program would be effective in reducing crime and improving public safety.	1.07 (1.01, 1.15)	1.09 (1.01, 1.17)
2. Having such a pilot program in a target area could result in drug crime decreasing in that specific area.	1.05 (0.98, 1.11)	1.06 (0.99, 1.13)
3. Having such a pilot program in a target area could result in drug crime decreasing in other areas of town.	1.06 (1.00, 1.12)	1.06 (1.00, 1.13)
4. This program is what the police should be doing.	1.01 (0.95, 1.07)	1.01 (0.95, 1.07)
5. It is appropriate for police and social workers to be working together to divert crime.	0.99 (0.90, 1.03)	0.97 (0.90, 1.04)
6. As an officer, I would be comfortable working with a social worker in my day to day work.	0.97 (0.91, 1.03)	0.97 (0.90, 1.03)

Statistically significant findings shown in bold (p < 0.05).

the manner in which they enforce the law shapes the risk environment for PWUD (Burris et al., 2004; Werb et al., 2008). Aggressive policing diminishes uptake of important harm reduction interventions aimed at reducing overdose and the transmission of blood-borne diseases (Bonhert et al., 2011; Davis et al., 2005; Hammett et al., 2005; Pollini et al., 2008; Rhodes et al., 2006; Wagner et al., 2013; Werb et al., 2008; Wood et al., 2003); in a study of PWID in Baltimore City (n = 366), 49% reported being afraid to carry personal syringes due to fear of arrest (Flath et al., 2017). These findings are not only of concern for the health of PWID themselves, but for officers' occupational hazard of needle-stick injuries and the surrounding communities impacted by discarded needles, widespread drug use and increasing overdose deaths (Davis & Beletsky, 2009; Rudd, Seth, David, & Scholl, 2016). In order to address the complex aetiology of drug use and related crime, criminologists recognize that police need to move beyond simple deterrence and engage with a diverse array of public health and harm reduction practices (Akers & Lanier, 2009; Cooper et al., 2005; Midford et al., 2002; Weisburd & Eck, 2004; Wood et al., 2015), and our findings indicate that greater investment in training and achieving buy-in from newer recruits may be needed to do so. This is consistent with others observations that younger officers can be more resistant to challenges to their authority, and more likely to continue using aggressive and even favour confrontational policing tactics than officers with more experience (Loftus, 2010; Morin, Parker, Stepler, & Mercer, 2017; Paoline & Terrill, 2007). However, upstream planning and monitoring strategies can successfully address police-driven barriers to program implementation and results (Silverman et al., 2012), and early data from other police training interventions demonstrate that conceptual knowledge of legal and public health frameworks can be greatly improved to align policing with harm reduction (Arredondo et al., 2017). We therefore recommend that training materials, information sessions and stringent monitoring of program delivery be informed by these findings and target officers with fewer years on the force accordingly. Our findings do not indicate a critical threshold for police cooperation and alignment with public health principles, but rather illustrate the evolution in perceptions towards PWUD and public health goals with each additional year of experience interacting with these communities. Broadly, we believe these data speak to the importance of intervening early and consistently throughout police career trajectories to promote recognition and support of public health and harm reduction. Seasoned officers can be important allies in promoting harm reduction and relate educational efforts of new officers. Police departments could provide forums in which such guided dialogues could occur, as well as providing new officers with education around local service provision that is relevant to drug using communities (e.g., health departments, harm reduction organizations, syringe services program). Engaging seasoned police in this process enhances credibility of the issue at hand and could result in a meaningful culture change over time of how police view themselves in relation to marginalized community members as well as community resources.

Results should be interpreted in light of several limitations. Underrepresentation of women and officers of colour relative to BPD demographics may have hindered us from detecting important differences in police perceptions of LEAD and informing training accordingly. Future work may also benefit from the collection of additional demographic data, such as education level and place of residence, specifically whether officers live within or outside of Baltimore City, as potential factors affecting police perceptions towards PWUD or harm reduction policies. Further, the inclusion of police who appeared at roll call introduces the possibility of selection bias if there were systematic differences between police who did and did not attend during the two-month survey period; similarly, our use of complete case analysis may bias results if missingness was heavily influenced by some unmeasured variable. Finally, we saw a low internal consistency score in our first scale, which sought to measure police attitudes toward PWUD, drug policies and public health. Removal of scale items in a stepwise fashion

did not improve this metric across all participants; however, consistency was increased when we separated seasoned and newer officers. This may speak to the differences we observe in attitudes towards drug services and policies between these two groups. This study represented a first attempt to assess police attitudes in this context, and was conducted as a component of implementation evaluation. While scale development was informed by prior literature and stakeholder knowledge, the need for more robust scales in exploring these constructs is in and of itself and important message that can be derived from this work. We recommend that scale design be augmented in various ways, including but not limited to greater integration of literature on stigma, clear hypotheses of the theoretical constructs underpinning the police perceptions towards PWUD and harm reduction practices, and qualitative interviews and testing of questions with officers to iteratively inform survey design.

Conclusions

Baltimore has profoundly suffered the impacts of prevalent drug use, as well as the violent consequences of heavy-handed policing and criminalization of communities impacted by the United States' "war on drugs." The opportunity to interrupt this cycle by diverting low-level drug offenders to case management, with support from policymakers, the police chief, the health commissioner and the wider community is a promising one; but the ability to enact meaningful change relies on engaging police officers and garnering their support. Even with the replication of LEAD in a number of jurisdictions across the country, we are unaware of research detailing specific police-driven barriers to its implementation and success. This research is important in documenting the impact of such programs as LEAD on front-line officers who will be implementing such a pre-booking diversion program. Understanding how such a program impacts police officers' attitudes towards PWUD and harm reduction strategies is a key component to the program's success. LEAD implementation here and elsewhere should address police attitudes, concerns and scepticism from the beginning of planning and implementation, and the work presented here can inform the Baltimore City LEAD Pilot Program in doing so.

Conflict of interest statement

We wish to confirm that there are no known conflicts of interest associated with this publication and there has been no significant financial support for this work that could have influenced its outcome.

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