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SUPERIOR COURT OF THE STATE OF CALIFORNIA

COUNTY OF SAN FRANCISCO

PEOPLE OF THE STATE OF CALIFORNIA, by and through Dennis J. Herrera, City Attorney for the City and County of San Francisco,

Plaintiff,

vs.

CHRISTIAN NOEL PADILLA-MARTEL aka CHRISTIAN PADILLA-MARTEL, an individual,

Defendant.

CASE NO. CGC-20-586763

DECLARATION OF JEANNETTE ZANIPATIN IN SUPPORT OF DEFENDANT CHRISTIAN NOEL PADILLA-MARTEL'S OPPOSITION TO PLAINTIFF'S MOTION FOR PRELIMINARY INJUNCTION

Date: April 27, 2021
Time: 9:30 a.m.
Dept: 302
Judge: Hon. Ethan P. Schulman

Complaint Filed: September 24, 2020
Trial Date: Not Set

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I, Jeannette Zanipatin, declare as follows:

1. I have personal knowledge of the following facts except those stated on information and belief. As to those facts, I believe them to be true. If called to testify, I could and would testify competently to the contents of this declaration. I am over the age of 18. I make this declaration in opposition to the City Attorney's request for a preliminary injunction against the defendant in this case.

Background, Credentials and Expertise

2. My name is Jeannette Zanipatin and I am currently the California State Director of Drug Policy Alliance in Los Angeles, California.

3. Drug Policy Alliance (DPA) is a national organization that works to end the War on Drugs by promoting drug policies grounded in science, compassion, health, and human rights. To this end, DPA works to end the war on drug by focusing our advocacy on harm reduction, criminal justice reform, working at the intersection of immigration law and criminal law, and working to end the direct and collateral consequences of harmful policies that seek to further criminalize individuals.

4. I have over twenty years of experience in federal, state, and local policy and advocacy work as well as over twenty-four years of experience as an immigration and civil rights attorney.

5. I am a graduate of UC Berkeley with a Bachelor of Arts in Legal Studies and have a Juris Doctorate degree from Seattle University School of Law. I am licensed to practice law in California, Washington State (inactive) and the Ninth Circuit Court of Appeals.

6. I started my legal career primarily working as an immigration attorney in Seattle, WA where I worked with the Northwest Immigrant Rights Project on removal defense and ran a detention project representing individuals who were in immigration detention and faced removal proceedings. I also worked as a Supervising Immigration Attorney at La Raza Centro Legal in San Francisco's Mission district serving clients from my community.

7. I was born and raised in San Francisco and had the opportunity to work for several years in San Francisco's Mission district working primarily with individuals from Central America on political asylum, NACARA, DACA, and removal defense cases. This work has been very significant for me as my family is from El Salvador and Honduras and I understand the challenges the immigrant community faces in San Francisco and the Bay Area.

8. I spent most of my legal career working in immigration law, and civil rights law including working at the intersection of criminal law and immigration law, working on law enforcement policies at the intersection of Immigration and Custom Enforcement (ICE), and law enforcements policies directed at vulnerable immigration populations including victims of domestic violence, victims of hate crimes, and people who use drugs.

9. At the state level, I've worked on legislation regarding regulation of ICE/Police Collaboration such as the TRUST Act, Truth Act and the California Value Act also known as the California Sanctuary Act, which prohibits law enforcements entanglement with ICE and provides protections for certain non-citizens from being deported.

10. I've also worked on legislation to allow non-citizens charged with low-level drug offenses to be allowed to participate in treatment as opposed to jail time and allow non-citizens to avoid deportation consequences by allowing a deferred entry of judgment. This includes work on legislation to related to punishment for state misdemeanor and other offenses in California.

11. I've worked for several advocacy organizations in the state capitol including the California Immigrant Policy Center, the Latino Health Alliance/Latino Coalition for a Healthy California as a consultant, the California Partnership to End Domestic Violence, and the Mexican American Legal Defense and Educational Fund, the largest Latino civil rights organization as a Legislative Attorney.

12. In my current role as the CA State Director for DPA, I've worked primarily on criminal justice reform, harm reduction, and the intersection of criminal law and immigration law. At the local level, I've worked with the Alternatives to Incarceration workgroup in LA County for over two years that culminated in a report titled, "Care First, Jail Last," presented to the Los Angeles Board of Supervisors which contained several key policy recommendations including two

I worked on to have LA County adopt an Overdose Prevention Program and to decriminalize quality of life crimes including decriminalization of drug possession for personal use.

13. I am also working with my colleagues at the Department of Legal Affairs in our Oakland office to provide technical assistance and support on the development of policy to decriminalize drug possession for personal use in Oakland's Reimagining Public Safety Task Force, as well as providing technical assistance on the final stages of a ten-year campaign in Los Angeles to close the Men's Central Jail with the Community Engagement and Racial Equity Advisory group.

The Current Case and Requested Injunction

14. A coalition of individuals and organizations has recently came together to address the City Attorney's approach in San Francisco's Tenderloin district to utilize civil injunctions targeting alleged low-level drug sellers. I am actively assisting to ensure that the Tenderloin community is not negatively impacted by the City Attorney's present enforcement approach.

15. In that capacity, I have reviewed the Complaints and other documents filed in these various actions I understand have been filed by the San Francisco City Attorney's Office seeking injunctions preventing various individuals from entering a large area of the Tenderloin, which has been referred to as the "Tenderloin Drug Abatement Area" by the City Attorney's Office and "Banishment Zone" by Defendants.

16. Given my experience and knowledge, in my opinion, which I hold to a degree of professional certainty, the City Attorney's requested injunction would harm the Tenderloin community and the City of San Francisco, as discussed herein.

17. I have had very limited time to review the issues herein, given that my understanding is that the City of San Francisco filed a motion for a preliminary injunction in this case, and there is a very limited window to respond to it. With additional time, I could provide additional and extensive support for the numerous reasons that the City's requested injunction is entirely inappropriate and would damage the community, perhaps irreparably.

18. DPA strongly believes that such civil injunctions are not only unconstitutional, but also ineffective when dealing with low-level drug sellers. While the criminal legal system purports to focus on high-level sellers, the data demonstrates that supply-side criminalization disproportionately impacts the lowest-level people on the supply chain and fails to address the root causes.

19. It also has the potential to have the opposite effect by increasing violence, impacting the quality of the drug supply by making it more susceptible to fentanyl and fentanyl analogues, and increasing the potential for overdose deaths. In addition, targeting drug sellers has a negative impact on 911 and Good Samaritan Laws and will make it less likely for individuals to report an overdose.

20. The idea of the "replacement theory" is also a concern that the city of San Francisco should be aware of in the wake of developing policies to address public safety concerns in the Tenderloin. This theory is supported by several studies and basically calls into question law enforcement and policy maker's strategy to go after low-level drug sellers as a way to curb drug use, impact open air drug markets, and reduce violence. In fact, the opposite is true. Low-level drug sellers, which are the intended focus of the city's injunction and criminal charges, can be easily replaced and often are replaced quickly. Instead, what ensues is an increase in violence and destabilization of the drug supply, which can cause disruptions and lead to more overdoses either because the supply may be slightly delayed, or the drug supply is infiltrated with more dangerous substances.

21. In San Francisco, the overdose rate in 2020 has steadily increased. In fact, San Francisco has lost more lives to overdoses in the wake of the pandemic than to COVID-19. Three times more lives have been lost to overdoses in San Francisco in 2020, 621 lives lost to overdoses in comparison to 173 lives to COVID-19. If the goal is to safeguard the community from overdoses the approach by the City Attorney fails to address the rising overdose rate and incarcerating or issuing civil injunctions does nothing to address overdoses and in fact makes it worse.

22. In March 2021, Drug Policy Alliance's California office released an issue brief titled, "The Impact of the Overdose Crisis on the Latino Community in California." The brief is based on a report commissioned by DPA with Dr. Avelardo Valdez. This report is the first of its kind that seeks to access the overdose rates at the state-level for Latinos in California. Of particular interest is the finding that the third highest county for overdoses among Latinos in California is San Francisco County. San Francisco County has an overdose rate of 27.1 per 100,000 in 2019.

23. The report calls upon policy makers to develop a comprehensive approach to the overdose crisis and steer away from policies that exacerbate the problem such as providing more access to treatment, centering policies away from the criminal justice system and grounding policies in a public health-centered approach.

24. The current system has a discriminatory impact on communities of color, despite the fact that white people are slightly more likely than either Black or Latino people to report having sold drugs. Over 76% of individuals arrested for drug sales in the United States are Black and Latino individuals while usage rates among Whites, Black and Latino folks are similar.

25. Framing people who sell drugs as perpetrators and people who use drugs as victims is also misguided because there is extensive overlap between these two groups. A 2012 survey found that 43% of people who reported selling drugs in the past year also reported that they met the criteria for a substance use disorder. It is hard to draw the line between drug sellers and users. Often, it is the same population in need of services. Many drug users are subsistence drug sellers, which is why policies directed at low-level drug sellers is a failed policy.

Proposed Remedial Measures to Benefit, Rather than Harm. the Community

26. It is my opinion based on a reasonable degree of professional certainty that the requested injunction will harm the Tenderloin community.

27. Instead of wrongly focusing on civil injunctions aimed at predominately young Central American youth, San Francisco should consider a comprehensive approach that includes investment in treatment and harm reduction, public health, housing, job training and

decriminalization efforts to reduce stigma and allow individuals to seek services. One of the biggest barriers to treatment continues to be stigma associated with drug use and criminalization efforts.

28. Criminalization leads to individuals having less access to services and access to care often for individuals who need it most. Drug users often move more underground, avoid any contact with law enforcement, public health access, and other services. This leads to a direct increase to violence and increases in the overdose rate.

29. It is fundamentally unfair to issue civil injunctions to this population when these services are provided for individuals in the Tenderloin. Instead of providing access to services that this population needs and building trust, the city of San Francisco is closing off access from critical services that will allow individuals to have the support system they need to seek treatment, be successful in their recovery and look toward accessing services for basic survival. It is a failure to criminalize a group of individuals in need of services and an even larger failure by believing that you can enhance public safety in the Tenderloin by incarcerating yourself out of a problem.

30. A comprehensive approach to reduce overdose rates and decrease violence includes adopting harm reduction strategies. These include the integration of syringe exchange programs, overdose prevention programs and alternative sentences for drug sellers, which include probation and treatment. All of which are policies that DPA has long advocated for at the local and state level in California.

Academic Literature, Research and Articles

31. In reaching these conclusions, I relied on certain literature, some of which has been prepared by DPA as part of our ongoing efforts in communities.

32. Attached hereto as Exhibit A is a true and correct copy of Fader, J.J.,"Selling Smarter, Not Harder": Life Course Effects on Drug Sellers' Risk Perceptions and Management, *International Journal of Drug Policy* (2016), http://dx/doi.org/doi:10.1016/j.drugpo.2016.04.011. This article discusses the limited relevance of sanctions to drug offenders' risk avoidant behavior.

33. Attached hereto as Exhibit B is a true and correct copy of Fordham, A. and Stevens, A., Applying Harm Reduction Principles to the Policing of Retail Drug Markets, *International Drug Policy Consortium* (Mar. 2013), https://dx.doi.org/10.2139/ssrn.2290797. This article discusses how to reduce the harm that policing drug markets causes by using problem-oriented, partnership approaches instead of criminalization and penalization.

34. Attached hereto as Exhibit C is a true and correct copy of Zibbell, J. *et. al.*, Association of Law Enforcement Seizures of Heroin, Fentanyl, and Carfentanil With Opioid Overdose Deaths in Ohio, 2014-2017, *JAMA Network Open* (Nov. 8. 2019), https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2754249. This study explains the finding that there were significant overdose deaths associated with seizures of opioids in Ohio in 2014-2017.

35. Attached hereto as Exhibit D is a true and correct copy of Werb, D. *et. al.*, Effect of Drug Law Enforcement on Drug Market Violence: A Systematic Review, *International Journal of Drug Policy* (2011), https://doi.org/10.1016/j.drugpo.2011.02.002. This review of studies suggests that law enforcement interventions to disrupt drug markets are ineffective in curtailing drug market violence and that removing individuals from a drug market results in their replacement.

36. Attached hereto as Exhibit E is a true and correct copy of Carroll, J., Rich, J. & Green, T., The Protective Effect of Trusted Dealers Against Opioid Overdose in the U.S., *International Journal of Drug Policy* (2020), https://doi.org/10.1016/j.drugpo.2020.102695. This study shows that drug users maintain long-term relationships with trusted dealers to reduce the risk of substance use-related harm and that removing those dealers from the market puts drug users at risk of overdose and creates harm by contributing to overdose.

37. Attached hereto as Exhibit F is a true and correct copy of More Imprisonment Does Not Reduce State Drug Problems, *The Pew Charitable Trusts* (Mar. 8, 2018), https://www.pewtrusts.org/en/research-and-analysis/issue-briefs/2018/03/more-imprisonment-does-not-reduce-state-drug-problems. This issue brief discusses other studies that show that there is no relationship between longer prison terms and illicit drug issues in the United States. Among

other things, the research indicates that incapacitating street dealers is ineffective as these individuals are quickly replaced.

38. In addition, DPA's website contains extensive information on the failed War on Drugs, available here: https://drugpolicy.org/issues/about-drug-war. The City's proposed measures in this case mimic the measures promulgated many years ago as part of the War on Drugs. As the website correctly notes, "Like alcohol Prohibition in the early 1900s, drug prohibition has not only failed its mission but has made its mission impossible. The failures of prohibition are painfully obvious: wasted money, wasted lives and wasted opportunities."

39. The DPA has collected extensive statistics on the War on Drugs and its failures. Those statistics are available here: https://drugpolicy.org/issues/drug-war-statistics. In particular, these enforcement measures have led to disparate treatment across the board (26% of those arrested are black despite composing only 13.4% of the community). *See id.* Given San Francisco's progressive nature as a Sanctuary City it is surprising that the City Attorney's Office appears to be targeting those in the Latinx community: every defendant in the cases filed by the City Attorney in which he is seeking a preliminary injunction is either Latino or Latina. Also, people of color make up a disproportionate percentage of those charged in drug offenses as compared to white people.

40. In addition, DPA's website also contains detailed and extensive recommendations on alternative measures that can be taken to assist communities rather than impose harmful and dated enforcement measures that have been proven as unworkable. That information is available here: https://drugpolicy.org/issues/local-solutions.

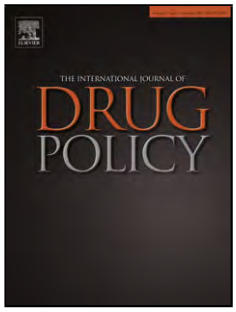
41. I hope to be able to address those issues in greater detail in these cases, either in the context of this motion for preliminary injunction should additional time be granted to conduct discovery, or in consideration of the merits in the case in chief.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed this 11th day of April, 2021, in Los Angeles, California.

Jeannette Zanipatin

EXHIBIT A



Title: “Selling Smarter, Not Harder”: Life Course Effects on Drug Sellers’ Risk Perceptions and Management

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"SELLING SMARTER, NOT HARDER":

LIFE COURSE EFFECTS ON DRUG SELLERS' RISK PERCEPTIONS AND MANAGEMENT

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Key words: Deterrence, drug distribution, apprehension avoidance, risk reduction, life course

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ABSTRACT

Background: Policies undergirding the American War on Drugs assume that drug offenders respond rationally to adjustments in sanction certainty and severity. Previous studies find that instead of absolute deterrence, or the termination of criminal activity, drug offenders employ restrictive deterrence, or a variety of risk management strategies. Extant research and current drug policy both fail to examine the interaction of risk perception, management techniques, and life course events or circumstances. **Methods:** This dynamic examination of apprehension avoidance strategies relies on in-depth interviews mapping out the careers of 20 drug sellers in Philadelphia, Pennsylvania. It examines their risk perceptions and risk management strategies and techniques, exploring rationales for shifts in offending behavior. **Results:** Respondents were highly risk-averse but used a narrow definition of sanctions relevant to shaping future offending behavior, typically making small adjustments in sales techniques. Rationales for these shifts included sanctions, personal preference, and life course events or circumstances. Only one attributed lasting desistance from offending to a sanction, although life course events such as parenthood and employment were associated with short-term and planned desistance. **Conclusions:** The limited relevance of sanctions to offenders' thinking about risk avoidance contextualizes the widespread failure of policies designed to deter drug sales. Findings support a growing conclusion that severity of punishment is a less powerful deterrent than certainty and that adjustments in certainty after arrest are offense-specific. The relationship of life course events – especially employment – to desistance and resumed offending suggest that social policies may be more effective than criminal justice sanctions in reducing drug offending.

"Selling Smarter, Not Harder":

Life Course Effects on Drug Sellers' Risk Perceptions and Management

Introduction

The United States has spent the last four decades fighting the War on Drugs, leveraging a variety of harsh sentencing policies, military tactics, and geographically-based crackdowns to deter drug sales (Alexander, 2010; Lawton, Taylor, & Luongo, 2005). Most now agree that the drug war has been an expensive and abysmal failure, leading to mass incarceration and all its collateral consequences, including straining state budgets, deepening social inequalities, and bringing far-reaching implications for children, families, and communities of the incarcerated (Global Commission on Drug Policy, 2014; National Academies of Science, 2014). Instead of reducing drug sales or use, these policies had an iatrogenic effect on their targets, reducing legal alternatives for employment among those involved in the system and attenuating their chances of attaining other turning points toward desistance, such as marriage (Pager, 2003; Western, 2006).

Drug policies rely heavily on deterrence theory, assuming that drug offenders are rational actors who respond to adjustments in certainty and severity of punishments. While some argue that drug offending is a particularly deterrable form of criminal activity (Jacobs, 2010; Pogarsky, 2002), much has been learned in the last two decades about the nuances of perceptual deterrence that can shed light on the failure of get-tough policies to reduce drug use or sales. Most notably, active offender research has found that, instead of avoiding or terminating criminal activity in response to sanction threats, drug sellers adapt in ways that allow them to continue offending with reduced risk of apprehension, sometimes referred to as "restrictive deterrence" (Jacobs, 1996; see also Jacobs, 1999; Jacobs & Miller, 1998; Jacques & Allen, 2014; Jacques & Reynald,

2012; Johnson & Natarajan, 1995; Nguyen, Malm, & Bouchard, 2015). More recent research in perceptual deterrence has found that offenders apply a narrow range of experience to future risk assessments, adjusting their perceptions of apprehension certainty after arrest for only the target offense and not other types of offenses (Anwar & Loughrin, 2011). This is actually a highly rational response to a sanction, given that drug sellers who make large changes in their sales strategies after arrest remove themselves from their familiar repertoire of activity and are thus more likely to be re-arrested than those who make minor adjustments in risk management techniques (Gallupe, Bouchard, & Caulkins, 2011).

Although they are not incompatible, the principles of deterrence are rarely integrated with knowledge about how risk perceptions and social circumstances interact and vary over the life course, which may also explain why there appears to be a mismatch between our understanding of the motivations and techniques undergirding drug sales and our policies to address them. For example, we know that offenders become more risk-averse with age (Steinberg, 2004; Shover, 1985). A sanction experienced during adolescence may produce a different effect than one levied at adult offenders. This lack of life course perspective is apparent within the above-mentioned active offender literature, which has generally relied on static data describing the apprehension avoidance strategies employed by offenders at one point in time (i.e., at the time of the interview). A more dynamic and broader approach could shed light on the interaction of risk perception and life course events and circumstances, including turning points leading to desistance (Sampson & Laub, 1993). In short, integrating knowledge of the social context in which deterrence operates may render drug policies more effective.

The present study employs interviews with 20 current and former drug sellers in Philadelphia to examine the dynamic social context of risk perceptions and management in drug

sales. It asks: (1) What are the subjective perceptions of risk held by present-day drug sellers? (2) What types of risk management strategies and techniques do they employ? And (3) How do they explain the rationale behind adjustments to these techniques over time, including temporary or permanent desistance from drug selling altogether? This study contributes to our understanding of drug policy by understanding the motives and behaviors of drug sellers as explained in their own words. As Nagin (2013) points out, the subjective perceptions of offenders are a critical but understudied component of deterrence theory. It also adds to the existing literature on apprehension avoidance strategies by viewing these strategies as dynamic, which allows us to see how (if at all) offenders adapt their methods in response to criminal justice sanctions, life circumstances or events, or other factors. The findings, albeit based on a small sample, are unique and thus advance knowledge about the way in which social context and perceptions of risk come together in ways that are relevant to shaping sensible drug policy.

Literature Review

Deterrence: Policy Assumptions and Empirical Reality

The theory undergirding policies comprising the American War on Drugs is deterrence theory, which assumes that drug sellers are rational actors who respond to perceived increases in certainty of apprehension and severity of punishment by curtailing illegal activity (Beccaria, 1764/1963; Bentham, 1789/1948; Gibbs, 1975). Deterrence theory has undergone a number of tests and specifications in recent years, however, which complicate this picture. The notion of a rational actor who accurately assesses the likelihood of arrest and prosecution and severity of sanction does not square with the reality of offenders, many of whom are impaired by substances at the time of the offense, operate on incomplete or faulty information about the consequences associated with particular crimes, or whose "decisions" to engage in offending are severely

circumscribed by a lack of legitimate opportunities for financial survival (National Academies of Science, 2014; Robinson & Darley, 2004.) Importantly, researchers have found that adjusting the perceived certainty of apprehension is much more consistently effective at deterring criminal activity than increasing the severity of punishment (Nagin, 2013; Paternoster, 1989; Pogarsky, 2002). In fact, some scholars have found that harsh sanctions can *increase* subsequent criminal activity (Sampson & Laub, 1993; Sherman, 1993; Pogarsky & Piquero, 2003).

A major problem for policymakers' assumptions about the deterrent effect of criminal justice sanctions arises when one examines research on drug sellers (Jacobs, 1996, 1999; Jacobs & Miller, 1998; Jacques & Allen, 2014; Jacques & Reynald, 2012; Johnson & Natarajan, 1995; Nguyen, Malm, & Bouchard, 2015). This body of literature has found that actual or anticipated criminal justice sanctions – instead of producing absolute deterrence, or desistance from drug sales– more often lead offenders to adopt "smarter" techniques that reduce their risk of apprehension. Jacobs's (1996) classic study of crack cocaine dealers found that they employed restrictive deterrence, reducing the frequency of their offences and employing strategies to avoid detection.

Jacobs's (1996) typology of apprehension avoidance strategies used by crack cocaine sellers (environmental positioning, stashing, and transactional mediation) is a useful starting place. Environmental positioning includes techniques such as choosing a location offering good visibility of law enforcement, not staying one place too long, or assessing the cost and benefits of selling in groups (Jacobs, 1996). Suburban drug sellers can avoid open air exchanges by selling out of their homes and relying on cell phones to set up transactions (VanNostrand & Tewksbury, 1999). Stashing techniques include keeping small quantities on their person with backup supplies hidden nearby or hiding drugs on their person (e.g., in the mouth, socks, or rectum) (Jacobs,

1996; Jacobs & Miller, 1998; Johnson & Natarajan, 1995; St. Jean, 2007). Transactional mediation – "the practice of using props, geography, people, or sleight of hand to camouflage drug-dealing activity" – can include splitting up the payment and hand-off processes so that the buyer pays and picks up his purchase in a predetermined location, moving the buyer to a secluded location (e.g., an alleyway) not easily visible from the street, using runners to deliver the product, using automobiles for transactions, and sleight of hand techniques such as handshakes (Jacobs, 1996: 371). "Contextual assimilation" involves "creating images of themselves and their behavior consistent with a non-offending identity" (Jacobs & Miller, 1998: 555-556). Those using this technique may integrate their illegal activities into "normal" activities such as running errands or playing basketball, often using props like infants in carriages to stage a law-abiding performance.

One limitation of this literature is that the vast majority was produced during the height of the crack era and thus focuses heavily on open hand-to-hand street sales (Jacobs, 1996; Jacobs and Miller, 1998; Johnson and Natajaran, 1995). With the decline of crack's popularity since the early-to-mid-'90s (Golub & Johnson, 1997), the expansion of cell phone use (Pew Research Center, 2013), the heightened visibility of police and expansion of surveillance in inner-city communities (Goffman, 2009), and the decriminalization or legalization of marijuana in some jurisdictions, it is reasonable to expect that modern-day drug sellers may have developed a different perceptual landscape by which they assess their risk of sanction and subsequently identified new strategies and techniques for avoiding arrest. This study considers a wider range of strategies, including visibility reduction, charge reduction, and risk distribution techniques employed by drug sellers in this modern-day social and criminal justice context.

Life Course Effects on Risk Perceptions and Management

The life course paradigm, which is not inconsistent with deterrence theory, is concerned with explaining how perceptions of risk and participation in offending and vary across an individual's life span (Hagan & Palloni, 1988). Life course theory posits that the vast majority of offenders begin to "age out" of criminal activity as they adopt adult roles that are inconsistent with crime (Sampson & Laub, 1993). Turning points such as marriage, parenthood, or high-quality employment, increase informal social control or provide cognitive 'hooks for change," (Giordano, Cernkovich, & Rudolph, 2002) leading to desistance from offending. Moreover, the life course perspective attunes us to the legal opportunities that must be present in order for individuals to desist or scale back their reliance on offending for economic survival (Uggen & Thompson, 2003).

Others working in this tradition have demonstrated age-varying perceptions of risk, which are low during adolescence and become stronger with adulthood, as individuals become more risk averse (Steinberg, 2004; Shover, 1985). Although this research has mostly been conducted within psychology, it has a social dimension as well. Accomplishment of turning points such as marriage, parenthood, or employment prompt individuals to evaluate the risks and benefits of offending in new terms (Nelson, Edin, & Paranal, 2004; Uggen & Thompson, 2003). Sanctions experienced by those with strong social ties may be less effective than with those who have fewer stakes in adult-like conformity. Moreover, the cumulative effects of life events, including sanctions, are experienced differently than if they were presented in isolation (Sampson & Laub, 1997). With this in mind, the life course may explain differential effects of sanctions over time or, alternately, how life events operate to change criminal behavior in the absence of sanctions. The primary contribution of this study is to examine the interaction between life course events and circumstances, perceptions of risk, and offending strategies

among modern-day drug sellers. This dynamic and age-graded perspective has been neglected in prior research and in drug policy in the U.S.

Research Design and Methodology

This dynamic examination of apprehension avoidance strategies relies on in-depth interviews with 20 active and former drug sellers in Philadelphia, Pennsylvania. The author conducted all interviews between December 2009 and June 2012. Recruitment for the study began by employing several existing street contacts made in the course of the author's prior field research (Fader, 2013). Recruiters and respondents were paid $25 for each interview. Respondents were then given the opportunity to become recruiters (Heckathorn, 1997). Each recruiter was limited to three referrals, ensuring that the sample was not drawn from a limited number of social networks. This method resulted in respondents from across the city, in South, North, West, and Southwest Philadelphia, generated by eight referral sources.

Of the 20 interviews, 18 were with active and 2 were former drug sellers (see Table 1). The vast majority (18) of the sample was male and all were African American. Their ages varied from 18 to 33 (with a mean of 24.5) and career length varied from 1 to 17 ½ years, with an average of 8.2. The range of drugs sold included: marijuana, crack, powder cocaine, heroin, prescription pills, narcotic cough syrup, and "dippers" or "wet" (cigarettes dipped in liquid PCP). As shown here, 6 respondents were never arrested for any offence, several having engaged in years of drug sales without even being stopped and questioned by the police. On the other hand, 10 were incarcerated at least once.

--- TABLE 1 ABOUT HERE ---

To protect their anonymity, all respondents were asked to provide only a pseudonym and instructed not to offer any specific information about names of suppliers, buyers, names of crews or sets (small, street-based criminal organizations), nor the names of identifiable locations during the interview. When this occurred by accident, the researcher stopped the interview momentarily to erase the identifying information from the recorder. Informed consent forms were read aloud and consent provided verbally, since a signed consent form could be used to identify the respondent.

Interviews were approximately one hour in length and were conducted in a location of the respondent's choosing, including their homes, the researcher's car, and, in one case, a nearly-empty McDonald's restaurant. Semi-structured interviews focused on the drug selling career; criminal justice sanctions; apprehension avoidance and strategies and techniques used at various point in the career; perceptions of risk; and other life events or turning points in the criminal career (Sampson & Laub, 1993). The interview guide identified specific number of domains to be covered but was flexible enough to allow the respondent to provide a narrative in the order in which he or she felt made the most sense. All interviews were recorded and transcribed for the purposes of coding and analysis. Transcripts were analyzed by the author using an inductive process of thematic coding (Emerson, Fretz, & Shaw, 1995; Lofland & Lofland, 1995). Thus, the risk management techniques were identified and grouped into larger strategies inductively, but connected to techniques present in the extant literature.

The final step in the analytic strategy involved recording any changes in sales strategies or techniques that occurred throughout the course of the criminal career and noting the respondent's rationale for the change in their behavior. As noted below a non-trivial number of partcipants (7) made no change at all in their sales techniques throughout their criminal careers.

Targeted shifts are noted in Table 2 and are grouped within larger risk management strategies, including visibility reduction, charge reduction, and risk distribution). Large shifts in strategy (typically a change in the type of drug sold), are also documented therein. Finally, the sanction- and life course-related rationales for desistance, or termination of the drug offending career, are provided in the text.

The primary threats to internal validity in active offender interviews are deception and memory problems. As Jacobs (1999) points out in his landmark study of crack sellers, the assumption that offenders are more likely to practice deception during interviews has been challenged in numerous studies (Ball, 1967; Chaiken & Chaiken, 1982). The present study discouraged deception through several mechanisms: offering anonymity to respondents, allowing them to select the interview setting, encouraging them to skip any question to which they felt they could not be fully honest; probing any inconsistencies that arose during the interview; and developing rapport. Most importantly, recruiting through mutual trusted individuals allowed the researcher's existing street contacts to vouch for her veracity, reducing the anxiety associated with the possibility that she might be a police informant. Memory problems were addressed by constructing a timeline of events, matching points in the criminal career with other points in the life course. Although access to criminal records could have confirmed self-reports about criminal justice sanctions, the safety risks posed by recording identifiable information on active offenders outweighed the advantages of triangulation.

As with any research that relies on a small sample, this study can make no claim to generalizability. The patterns found here may be unique to Philadelphia's drug market, or the 20 respondents might be somehow unrepresentative of drug sellers in the rest of the city. To be sure, drug markets have been shown to be differentially spatially and ethnically organized in

Philadelphia, with more stable and hierarchical networks in Puerto Rican communities and markets than elsewhere in the city (Rosenblum et al., 2014), so we would expect to see variations in risk and perceptions of arrest if recruitment of the sample was not limited to African Americans. However, inductive research is not designed to test existing theories but rather to generate new theories or hypotheses about the mechanisms behind social processes, making this lack of representativeness less concerning (Charmaz, 2006; Glaser & Strauss, 1967).

Results

Subjective Perceptions of Risk

Respondents generally characterized themselves as risk averse, often contrasting themselves with "young bulls [boys] today," who are "reckless" or "have a crazy draw for it" and "don't give a fuck about being out there in the open" (Marlo). They viewed arrest and victimisation as almost inevitable outcomes of long-term involvement in drug sales, saying "eventually, you'll always get caught" (Roemello), "anytime you step into the game, that's dealing with death" (D), "What I do out here on the streets, it's consequences, whether it's by the cops, other guys on the street, being in the wrong place in the wrong time" (T), and "If you not going to risk your family getting hurt or yourself getting hurt or you're not going to risk your life and your freedom, I figure you don't do it at all… cause a lot of stuff [is] at risk" (Terrence).

This sense that consequences were inevitable was grounded in their awareness of heavy, continual scrutiny by the police. Nearly every respondent in this study reported that they constantly saw and frequently interacted with police in the course of selling drugs as well as legal activity. Most had been patted down or stopped while driving on multiple occasions, and some had histories of violent interactions with police as both assailants and victims. G reported:

> Trust me, cops be keeping track of this certain people in the neighborhood and what they're doing and how they're getting around. Like say you someone who ain't never had a car, all of a sudden, you got a car? Yeah they're watching that. And nine times out of ten within your first two to three months having that car in that neighborhood, you're going get pulled over by that cop who's been watching you. Just because he's keeping tabs and trying to make sure that you're not the next one to step up or to do something illegal.

Although some, like Chocolate Thunder and L Boogie reported "never thinking" about the possibility of a stint in prison, this appeared to be more of a coping mechanism than a cavalier attitude toward confinement. Many others noted that prison was to be avoided at all cost. Terrence reported, "I got to do whatever I got to do not to go to jail", Eric said, "Jail is expensive, it's blowing, it's cold. You're surrounded by men, and it's nowhere you want to be", and Nate stated, "You're locked down all day. The food is bad. There's stabbings. You might run into somebody that's got problems with you on the streets. It's not a safe place". Nevertheless, incarceration was more likely to be followed by a minor shift in risk management strategies (i.e., restrictive deterrence) than desistance, as the architects of the War on Drugs assumed.

Risk Management Strategies and Techniques

The risk management techniques used by the respondents fit into three larger strategies, whose frequencies are enumerated in Table 2. Many of these have been noted in other studies, but several are unique to this more contemporary study and sample, in which multiple types of drugs were sold and sellers varied in their or access to or preference for open air and closed market sales. These three strategies are, of course, ideal types. For example, using a stash house could reduce visibility, reduce charges if apprehended, and distribute risk to others. Nevertheless,

techniques are sorted into the larger strategy whose mechanism of success appeared best met by that technique.

--- TABLE 2 ABOUT HERE---

The first strategy is *visibility reduction*, which is closest to the apprehension avoidance techniques in previous research. This includes: transactional mediation (Jacobs, 1996; used by 9 respondents); contextual assimilation (Jacobs and Miller, 1998; 6); use of neighborhood shops to make exchanges or launder money (St. Jean, 2007; 7); employing closed market exchanges in the buyer's or seller's home (10); using a cell phone to generate business and manage orders (VanNostrand & Tewksbury, 1999; 17); interrupting routine activities that could be tracked by law enforcement (6); and traveling out of town to rural areas or vacation towns (7).

As cell phones have become widespread more generally (Pew Center for Research, 2013), they have also become the modus operandi of most drug sellers interviewed here. Cell phones allow buyers to contact sellers and set up private exchanges, most often in the buyer's home or in a location deemed safe by the seller (VanNostrand & Tewksbury, 1999). One exception was among those who sold crack cocaine. Since "fiends" required multiple small transactions during the day and were unlikely to own cell phones, crack sellers reported that this market was best reached in person (Jacobs, 1999). The importance of cell phones to modern-day drug selling was underscored by their constant ringing during interviews. Respondents often used "burners," or pre-paid cell phones that did not connect the user to the phone through a service contract. Several reported that there was a delicate balance between retaining the same

phone number in order to be easily accessible to regular clients and "switching up" their phones to avoid tracking of their cell phone activities by the police.

Interrupting routine activities was employed by 6 members of this sample. These sellers reported that the police made note of residents who were on the street corners at the same time every day, leading to greater visibility. Interrupting routine activities included staying with family members in another community or even taking a short hiatus from sales when their neighborhoods were "hot" (i.e., under particular police scrutiny). As noted below, partners and teams allowed the use of this technique, since they could vary work shifts and trade off visible hand-to-hand roles between members. Moreover, several noted that legal employment in jobs with irregular schedules allowed them to come and go in patterns that were undetectable by the police.

A second strategy includes *charge reduction techniques,* which differ from visibility reduction techniques in their emphasis on mitigating penalties in the event of apprehension. These include: "flipping," or brokering deals between buyers and sellers with minimal to no contact with the product (Adler, 1985; 4 respondents); carrying only small quantities of product on one's person (6); keeping drugs or guns stashed at a sufficient distance to claim deniability (1); using code words to refer to quantities and type of drug requested, with a particular concern placed on wiretapping (6); selling marijuana exclusively because it was decriminalized in Philadelphia (9); and avoiding sales to strangers with the intention of avoiding undercover police (12). With the important exception of Adler's (1985) study of high-level drug sellers and smugglers, the charge reduction strategy (referred to as "avoiding ties to evidence") has not been addressed in the literature on risk management by drug sellers.

G, who grew up with deep family connections to the drug economy, never had to be a "soldier," or sell his product using hand-to-hand exchanges. Instead, he built a much less risky and more profitable enterprise as a "flipper" connecting buyers and sellers in exchange for a cut of the profit. "At times I feel like an agent. I've got a whole bunch of clients and people that I represent and I can make the moves for you. … It's that many people I have that many connections with, that I can literally pull my phone out and we can go on the inventory sheet and I can say, well he has that, he has that, he has that, what are you looking for?

A third strategy is *risk distribution*, which involves dividing the risk of apprehension with others or shifting it downward to those who are lower on the organizational hierarchy or otherwise uninvolved in drug sales. These techniques include: working with partners or in teams (13 respondents); hiring workers (5); and using stash houses owned by individuals who took on the risk of holding drugs, money, or cash in exchange for payment (7).

Teams and partners often split sales shifts, working while the other went to school, worked their legal job, or slept. Partners often passed off the phone, taking orders from buyers who called during their shift. Ty, who recently acquired a partner to expand his marijuana sales, reported "sometimes I'm at work [legal employment], he might not be at work. So what I don't catch, he can probably catch. It's just like a basketball team. You can't get a spot every night. You can't win every game by yourself." Hiring workers to "play your phone" (fill orders taken by phone) or conduct hand-to-hand exchanges was another strategy to distribute the risks associated with drug sales. As noted above, many respondents talked extensively about how less experienced drug sellers were less risk averse, making them good candidates for hire. Marlo explained:

> The young bulls…they don't really give a fuck about being out there in the open and shit like that. They got a thrill for it or a crazy drive for it. It's like then they make all of the moves and you just lay back and then you're not really doing nothing. You just give them a couple of dollars. That's keeping your ass clean, not worrying about watching the cops.

Finally, stash houses were a third strategy used to shift the risk of apprehension onto others. Stash houses provide cover for drugs, weapons, and/or money that the police could use as evidence of illegal activity. Although the act of physical stashing has been treated extensively in the literature on apprehension avoidance among drug sellers (Jacobs, 1996; Jacobs and Miller, 1998; Johnson & Natarajan, 1995; St. Jean, 2007), the social aspect of stash houses remains unexplored. Several of the respondents in this study described the qualities that would make a person a desirable candidate for using their home as a stash house. Interestingly, women appeared to be the most commonly relied upon source for stashing, although there was widespread agreement that a drug seller's main girlfriend would be too obvious a choice. A "side girl" was seen by Jeez as the best stash keeper. According to Weazo, a "functional addict," who is addicted to a drug but is still employed, is the best stash house sponsor. "They have a house that would pass," he explained. Women may also be seen as attractive stash house owners because their gender is inconsistent with the dominant image of drug sellers and thus serves as a cover for illegal activity (Jacobs & Miller, 1998).

Of course, risk distribution techniques can bring with them the exposure to new risks stemming from the interdependence of individuals involved in illegal enterprise. Most respondents discussed the need to know their partners and teammates well (often their whole

lives) and to be fully convinced of their trustworthiness, particularly with regard to snitching if picked up by the police. As a result, some respondents adopted new risk distribution techniques over time, while some reduced their reliance on others. The following section examines these and other shifts in techniques over the course of the criminal career.

Rationale for Shifting Strategies and Techniques

Table 2 describes the targeted shifts in risk management techniques across the three larger strategies, as well as noting larger-scale changes in offending. Some of these were made by the same respondent at different points in their criminal career. The rationales provided for these changes are found in the text. The activity recorded in the visibility reduction, charge reduction, and risk distribution cells were described as minor "tweaks" to drug sales techniques. In most cases, changing the drug sold represented a major shift in sales strategies because it typically involved finding a new supplier, identifying and establishing relationships with a new clientele, and adjusting drug-specific sales techniques. In some cases, however, reducing drug sales from multiple drugs to marijuana only is considered a minor, charge-reduction adaptation, particularly when it is described by the respondent as a temporary shift.

Targeted Shifts in Techniques

When moving from this static description to a more dynamic account of changes in apprehension avoidance strategies and techniques used by drug sellers, several patterns are revealed. One of the clearest findings is a reluctance to make major modifications to selling strategies and techniques, even after a sanction such as arrest or incarceration. This is consistent with research that finds that large-scale shifts in sales strategies may remove drug sellers from their well-worn, practiced repertoires, leading to greater risks of exposure to the police (Gallupe, Bouchard, & Caulkins, 2011). More than one-third (7) of the 20 respondents reported no

adjustment in their techniques throughout the duration of their careers, three of whom reported that their only change was to desist from sales altogether. This, of course, is the most important kind of change, as it is what policy makers hope to achieve, so we will explore the issue of desistance later.

When asked to discuss how criminal justice sanctions were related to shifts in strategies, it was apparent that respondents had a narrow definition of a relevant sanction and were unlikely to shift sales practices after an arrest unless the charge was for drug sales. For example, Jeez was arrested for fighting in school and spent time incarcerated in a juvenile facility when he was 17 years old. When asked if that led to a change in his selling behavior, he replied, "that's not what I got booked for, so why would I stop?" More recently, he was arrested for drug possession and said, "I didn't get locked up for selling nothing, so I still don't know the consequence. I got a citation. I wasn't behind bars or nothing." Respondents consistently described arrests for possession, non-corner drug sales (e.g., in school), or possession of a weapon – even when the weapon was carried in the course of drug sales – as not affecting their calculation of risk or their drug sales routines (Anwar & Loughrin, 2011). Nate reported that he was arrested as a juvenile for possession of "a bundle of weed" and released on his own recognizance, but "like, I never caught a *drug* case."

A change in visibility reduction techniques was common among those who experienced criminal justice sanctions such as arrest, incarceration, and community supervision. For example, D resumed drug sales immediately after his release from a six year murder sentence, shifting only the neighbourhood in which he sold. He explained, "I was gone a long time, so a lot of the heat was off me". B dramatically scaled back his drug sales after he was incarcerated but planned to return to full scale after his electronic monitoring supervision was complete. Roemello by

contrast, amped up his drug sales while on parole, but escaped the visibility of the Philadelphia police. His parole agent was never aware that he was operating a high-level drug operation in the Poconos several hours away from Philadelphia and seemed satisfied with regular clean urine screens. These differences may reflect differential perceptions of risk or varied supervisory styles of parole officers (Seiter & West, 2003).

Applying visibility reduction techniques was especially common among those who experienced drug crackdowns. When police flooded the corner where Jeez conducted sales as part of a geographically-focused crackdown, he and his friends switched from corner sales to riding “pedal bikes” up and down the block, telling the “fiends” where to go. Because their clientele was so location dependent, however, they moved the locus of their activity only two blocks away. L Boogie reported crackdowns in the form of near-misses, both in his home community and in another Philadelphia neighbourhood where he had set up a drug house. His supplier’s house, as well as surrounding blocks, had gotten “hot” recently, and L Boogie saw police hiding on rooftops across from his nearby home. The supplier was shot and killed while he was on his way to the house and detectives quickly connected them, swabbing his hands for gun residue. After this close call, L Boogie moved to northeast Philadelphia, where his “old head” (criminal mentor) had a drug house for him to run. After several months, that house was raided by police, and he returned to North Philadelphia to avoid being connected to the raid.

Although DeShawn was very risk averse, his sales strategies included hand-to-hand open exchanges on a five-mile walking route, often selling near schools and carrying drugs on his person. These techniques were identified by many other respondents as very risky. As he perceived police scrutiny intensifying, learned of raids, or felt “things getting hot,” he would take “breaks” for two to four weeks at a time while the situation cooled down. During this time, he

reported experiencing a tension between staying out of sight long enough to escape attention and the potential of losing his customers to other salespeople. These three cases, in addition to the fact that none of the other respondents discussed police crackdowns in their assessments of risk of apprehension, provide some context for understanding why this drug control strategy has had such limited effectiveness (Sherman, 1990). It should also be noted shifts in visibility reduction techniques were only made among those who were responding to a criminal justice sanction.

Those who engaged in charge reduction techniques continued illegal activity with what they perceived would lead to a less serious charge if caught. Rougge had been arrested three times for drug-related activities, had "beaten" two charges and was serving a sentence of probation for the third. While on probation, he shifted from selling cocaine to marijuana because he perceived both less police scrutiny and less serious charges stemming from marijuana. He described targeted scale-backs in his activity. "I take it easy. I might not dedicate myself to the block all day, every day, I might go in the house [at curfew] when the Chinese store close". Shysty began selling baggies to corner stores while he was on parole after a term in prison, incorrectly perceiving paraphernalia sales to be legal. He intended to resume a larger-scale drug operation once his parole supervision lessened its requirements for reporting frequency. L Boogie began avoiding sales to strangers after being "popped" (caught) by a confidential informant.

Marlo made a shift in his use of charge reduction techniques in the absence of sanction. Although he sold drugs for nine years without arrest, he had some close calls with police stop and frisks. Over time, he moved from an operation largely comprised of hand-to-hand marijuana sales to a business model that he described as 75% flipping, or brokering deals without touching the product. He characterized himself as "crazy cautious" and attributed his increased risk

aversion both to age and observing many of his friends and family members experience periods of incarceration. “I want to live life…. I don’t got time to be locked up.” When asked what his current level of risk was, he said that it was low. “That’s how I love it,” he added. Marlo’s case study is consistent with research that finds that offenders become more risk-averse with age (Steinberg, 2004; Shover, 1985).

Changes in the use of risk distribution methods were less commonly used, particularly among those who associated the adjustment with a sanction. Eric moved from using a single partner to playing on a “team” of drug sellers, which he believed distributed the risk more widely, reducing his chances of apprehension. His rationale for this shift was a drug arrest and spell of incarceration. B reported that his drug arrest and subsequent incarceration taught him to avoid stash houses, reducing his reliance on risk distribution. Others took on partners not in response to a sanction but as a matter of personal preference for reduced risk of victimization (DeShawn) or increased profits (Ty). Although this does not represent a change in drug selling behavior, D had learned from a life event to avoid working with others because nobody could be trusted; his father had been killed as a result of jealousy and mistrust that had developed within a “crew.” This became a stable rule throughout his drug sales career.

Major Shifts

As mentioned earlier, changing drugs most often represented a radical overhaul of sales techniques because it involved new suppliers, new clientele, and new norms around these techniques. Six of the 20 respondents here described making such an adjustment, two of which were attributed to a stint of incarceration. Jeez, for example, moved from crack to marijuana sales after his placement at a juvenile facility.

T started selling marijuana as a corner boy at age 17. He described himself as "young and dumb" for taking the risks associated with hand-to-hand sales:

> I would have at least ten bags on me… Walking around with that carelessly, like they wasn't gonna touch me or nothing. Just being cocky, you know? Just sitting there on the block, smoking weed with weed on me. Cops are riding past, you know? Selling to people I didn't know. … Once I got locked up [at 18], I changed up a lot of stuff about what I was doing.

After spending some time in jail, T considered how to resume drug sales with fewer risks. His "eureka moment" came when a neighbor asked about the exotic strain of marijuana he was smoking and T called his cousin, who was his supplier. Once he brokered the deal, he realized, "Why would I be like everybody else and sell regular weed"? His cousin gave him access to his supplier and T started a niche business that was far more profitable than standard grade marijuana sales, eliminated competition and collateral risk of violent victimisation, and allowed him to develop higher end clientele who were less likely to be watched by the police. At the time of the interview, he had successfully sold "exotic" for three years without generating any police attention. This is an example of successful deployment of restrictive deterrence.

One respondent made major changes in response to a life event, adjusting techniques in all three domains. Roemello was gunned down at age 19 at the hands of someone who was retaliating against his brother, also a drug seller. He was paralyzed from the waist down and, after a lengthy hospital stay, immediately returned to his old territory, pistol-whipping someone from his wheelchair as a display of masculine toughness. When asked what he does differently since the incident, he replied "I'm in a wheelchair; you're not catching me on a corner. I already got shot up so you're not going to roll up on me on the corner and shoot me up again". He hired

workers to stand on the corner in his place, arranged deals using cell phones, and relied on his best friend to "be my legs", watching Roemello's back whenever he left the house. Interestingly, even though he described his stint in prison as "hell" for someone in a wheelchair, he was not deterred by this experience and continued to operate a healthy drug enterprise.

Others shifted the drugs they sold as a result of personal preferences. DeShawn added crack to his existing marijuana business to increase profit. D moved from selling crack to marijuana because it was less complicated. He also returned from Georgia to Philadelphia because he perceived drug sales to be more profitable there. Chocolate Thunder, who was the only respondent who sold drugs to support her habit, shifted from crack to dippers when she began using. Her user community thus served also as her client base.

Desistance

So far, we have seen evidence that criminal justice sanctions often produce restrictive deterrence, or the use of "smarter" strategies and techniques of drug selling. By contrast, when policy makers strove to build harsher sentencing structures and increase certainty of apprehension by increasing the visibility and scope of surveillance by the police, they were hoping to produce desistance, or "absolute deterrence" from offending. As we will see, some respondents attributed their desistance to the desire to avoid further sanction, which would be a "win" for deterrence-based drug policies. More commonly, however, respondents attributed periods of desistance to life course events. In both deterrence and life course-related desistance, some respondents returned to drug sales after a period of termination. Explanations for these returns were always related to life events or circumstances, most notably financial need that could not be met in the legal labor market.

In two cases, respondents attributed desistance to a stint of incarceration, although only one was able to maintain his commitment to going straight. Eric began selling crack cocaine at age 13 and successfully avoided arrest for drug sales until age 17. Undeterred after this initial arrest, he moved from working with a partner to a larger team of players. At 20, however, he was incarcerated after a robbery and spent a year and a half in the county jail. Since then, he desisted from drug sales and even avoided smoking marijuana. He attributed this change to his time in jail ("I guess you could say I was rehabilitated"), a growing patience that he developed during this "sitdown," and his desire for legitimate employment. He also spent that period of confinement thinking about how the thousands of dollars he "stashed" (saved) during his drug selling career was wiped out on bail and attorney's fees. Life course theory explains why an arrest at age 17 resulted in restrictive deterrence while a later arrest and spell of incarceration had more lasting effects (Sampson & Laub, 1993). Age and maturity are also likely at play in his decision to desist from drug offending (Massoglia & Uggen, 2010; Shover, 1985).

Weazo was incarcerated in a juvenile facility for selling drugs during his adolescence. He explained his motivation for desistance as wanting to avoid placing an emotional and financial burden on his family with any future stints of incarceration. Unlike most juveniles, whose records are expunged, Weazo had been originally charged as an adult and his case was transferred back to the juvenile court. The adult record remained, along with the stigma of the felony (Pager, 2003). He searched for legal employment unsuccessfully for a full year before returning to the drug economy. In both Weazo and Eric's cases, we see how the perceptions associated with sanctions and life course processes cannot be separated.

Other life events seemed to provide the basis for a "turning point" among those interviewed here. L Boogie had dramatically scaled back his drug sales activities in the weeks

leading up to his interview, making concrete plans for desistance. L Boogie had to that point made only minor adjustments to sanctions, avoiding sales to strangers after being "popped" by a confidential informant and changing locales twice as a result of police crackdowns (see above). Moreover, he had been the victim of armed robbery several times, but found that nothing was as profound a deterrent as a near-death experience in a car accident:

> I know this, you get hit it in the head, it's lights out real quick. There ain't nothing really scary about that. But when you get hit in a car accident, everything is real slow. You see your death coming to you. That's the most scariest thing. And all that screeching was about 12 seconds, and I felt scared. It's the first time in my life that I really felt scared.

The day after his accident, L Boogie started applying for jobs online and was planning to desist completely as soon as he started working legally. Although only a longitudinal study could confirm whether he was able to follow through with these plans, the fact that he had made concrete plans is significant because they are an important step in the change process (Prochaska & DiClemente, 1992).

At the time of the interviews, two respondents – Kevin and Eric – had terminated their involvement in drug sales. As noted above, Eric appeared to have been deterred by his stint in prison. Kevin had started selling marijuana at age 16 because his family was not providing for his basic financial needs, like school uniforms. Since then, he reported, his family had "stepped up financially" and he had taken a job in the fast food industry.

Two other respondents desisted for a non-trivial period of time before returning to drug sales. Sasha, who had never been arrested, stopped selling drugs during a year-and-a-half period when she was a university student. After that time, however, she dropped out and returned to Philadelphia to take care of her younger brother. She was also a single mother of two small children. She tried to earn enough income to subsist legally in a part-time job, but returned to drug sales when she was unable to secure full-time hours. Although she would like to "wean myself off it it", she explained, but "at the end of the day I still got kids. How y'all going to eat if I completely stop"?

Jeez was arrested multiple times for drug sales and related offences and incarcerated at a juvenile facility, none of which led him to changes in his methods of drug sales. He did, however, stop selling crack at age 19 when he had his first child and set up house with his girlfriend. For three years, he struggled to support his young family through legal employment, but could never find full-time work. After his hours at work kept getting cut, he had to re-evaluate his options in light of his contributions to the household relative to those of his girlfriend. "I can't bring home the bacon no more. I'm bringin' the eggs while she bringing in grits, bacon, and steak…. In this job (drug selling) I can be everything. I can be a man." This sentiment is consistent with ethnographic research linking involvement in the drug economy to masculinity construction among men who are unable to fulfill the traditional breadwinner role (Anderson, 1999; Bourgois, 1995). Taken together, these cases of failed desistance underscore the importance of legal opportunities in providing offenders with lasting off-ramps from the underground economy.

Discussion and Conclusion

American drug policy makers assume that drug sellers are rational actors who can be deterred from offending through harsh sentencing regimes and drug crackdowns. This study, employing interviews with 20 drug sellers in Philadelphia, critically evaluates this assumption by focusing on their perceptions of risk, an understudied aspect of deterrence research (Nagin, 2013). Moreover, it applies a life course lens to our understanding of risk perceptions and offending behavior, documenting dynamic adaptations in sales techniques and connecting them to rationales provided by the drug sellers. Their narratives suggest that life events and circumstances play a key role in both risk perceptions and risk management strategies. Yet the role of the life course has generally been neglected, both in the literature on apprehension avoidance and in the discourse around drug policy.

Respondents were highly attuned to the risks inherent in drug selling, noting near-constant police presence in their communities. Although they viewed negative consequences of their involvement in "the game," as nearly inevitable, 6 of the 20 reported experiencing no sanction at all, not even a neighborhood-based drug crackdown. Nevertheless, they were hardly cavalier about the costs of arrest and confinement. Importantly, these negative outcomes rarely produced desistance from offending as the architects of American drug policies assumed. Rather, drug sellers in the present study employed a narrow definition of which sanctions were relevant to their assessment of risk and, when they responded to sanctions, typically employed restrictive deterrence, or the use of techniques that reduced their risk of apprehension (Gibbs, 1975; Jacobs, 1996).

A wide variety of risk management techniques were identified during interviews, including those designed to reduce visibility, to attenuate charges in case of arrest, and to distribute risk across other people. Many of the visibility reduction techniques are consistent with

prior research on apprehension avoidance strategies (Jacobs, 1996; see also Jacobs, 1999; Jacobs & Miller, 1998; Jacques & Allen, 2014; Jacques & Reynald, 2012; Johnson & Natarajan, 1995; Nguyen, Malm, & Bouchard, 2015). Others, such as "flipping" or brokering deals or finding the right person with whom to develop a stash house relationship have received little attention in the literature (Adler, 1985 is an exception). With the decline of the crack cocaine market, many drug sellers rely on cell phones and private hand-to-hand exchanges to reduce their risk of apprehension, techniques previously associated with suburban drug sellers (VanNostrand & Tewksbury, 1999). Others use legal employment as means of interrupting routine activities.

Among the 14 respondents who made some sort of adjustment to their sales techniques, they were modest and often highly-specific in response to arrests on drug charges and neighbourhood crackdowns by police. Visibility reduction techniques were most commonly associated with sanctions. Behavioral adaptations to community supervision and drug crackdowns were often temporary. Changes in offending strategies also were explained as a result of personal preference for increased profit, less hassle, or because of their own drug use. Although criminal justice sanctions rarely prompted desistance, life course events such as going to college, steady employment, and in one case, a car accident led some respondents to report the actual or impending termination of their criminal careers. Life course events, most notably financial needs, also drove several back into drug sales after a period of desistance. Traditional deterrence theory cannot explain these decisions because it fails to acknowledge the importance of economic alternatives to drug sales.

The findings of the present study support previous conclusions that ratcheting up sanctions generally produces null or, at best, modest and temporary results (Nagin, 2013; Sherman, 1990). While strategies and techniques may undergo minor adjustments in response to

sanction regimes, larger scale decisions to engage in drug sales are probably more responsive to the legal opportunity structure than perceptions of apprehension certainty. Social policies that increase legal alternatives to the drug economy may be more effective in reducing crime than criminal justice policies (see Uggen & Thompson, 2003). “Ban the box” policies, currently under consideration in a number of jurisdictions, and incentives to hire former felons, such as the Work Opportunity Tax Credit, could help pave the way to greater access to legal employment opportunities (Henry & Jacobs, 2007; Holzer, Raphael, & Stoll, 2002). Moreover, quality jobs – those that offer job satisfaction – are the most effective in predicting reduced reliance on crime for economic gain (Uggen, 1999; Uggen & Wakefield, 2008). Given that the respondents in this study reported generally low reserve wages and a distaste for selling drugs, raising the minimum wage could also support their exit from the drug economy.

Additional research employing dynamic or longitudinal research designs are necessary to understand the on-the-ground responses of active offenders to various sanction regimes. Although administrative data, such as that used by Gallupe, Bouchard, and Caulkins (2011) allow for strong claims to external validity through large sample sizes, these studies should continue to be supplemented by smaller-scale, in-depth studies that can capture offenders whose techniques are successful and therefore do not result in subsequent arrest, as well as adjustments to offending patterns that appear to have been caused by a wide range of criminal justice sanctions and non-criminal life events. In fact, multi-method studies that draw on both official and self-report data could address a limitation of the present study, which is that it relies on respondents to report their experiences of criminal justice sanctions.

Although any conclusions are tentative because of the small sample size employed here, the present study provides a rare window into the subjective perceptions of sanction risk and

subsequent adjustments made by sellers operating in the modern-day drug economy. It uncovers the mismatch between the theory driving drug policies and the actual risk perceptions and management strategies used by drug sellers, providing contextual evidence for why the War on Drugs has been such a dismal failure (Global Commission on Drug Policy, 2014; National Academies of Science, 2014).

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Table 1: Respondents' Characteristics

Name	Age	Career Length (years) †	Drug(s)	Most Severe Sanction
B	28	5.5	Cocaine, marijuana	Incarceration
Chocolate Thunder*	33	16	Crack, wet	None
D	24	6	Cocaine, marijuana	Incarceration
DeShawn	22	8	Marijuana, cocaine	Crackdowns
Eric**	24	9.5	Cocaine	Incarceration
G	26	13	Marijuana, cocaine	Arrest
Jeez	24	10	Cocaine	Juvenile incarceration
Kevin**	23	1	Prescription pills	None
L Boogie	24	8	Marijuana, cocaine	Probation
Marlo	25	9	Marijuana	None
Nate	23	7	Cocaine, heroin	Incarceration
Roemello	31	17.5	2+ drugs	Incarceration
Rougge	23	7	Cocaine, marijuana	Probation
Sasha*	22	7	2+ drugs	None
Shysty	27	12	Marijuana, cocaine	Incarceration
T	23	3.5	Marijuana	Incarceration
Terrence	18	3.5	2+ drugs	None
Ty	24	2	Marijuana	None
Weazo	24	7.5	Marijuana	Juvenile incarceration
Web	22	10.5	2+ drugs	Incarceration
Means/ Counts	24.5	8.2	Marijuana (14) Crack (9)	No sanction (6) Arrest (1)

			Powder Cocaine (6) Heroin (3) Prescription pills (4) Syrup (2) PCP/ Wet (2)	Crackdown (1) Probation (2) Incarceration (10)

* Female, ** Former seller, † accounts for time off due to incarceration

Table 2: Risk Management Strategies, Techniques, and Adjustments

Strategies	Techniques	Adjustments
Visibility Reduction	Transactional mediation (9) Contextual assimilation (6) Corner stores (7) Private hand-to-hand (10) Cell phone (17) Interrupts routine activities (6) Sells out of town (7)	Changed neighborhoods Started sales in another city Reduced frequency of sales Rode pedal bikes Took short breaks
Charge Reduction	Flipping (4) Small quantities (6) Keep drugs, guns at distance (1) Code words (6) Marijuana only (9) Avoid sales to strangers (12)	Avoided sales to strangers Increased use of flipping Sold marijuana only (temporary) Sold paraphernalia
Risk Distribution	Partners or teams (13) Hired others (5) Stash houses (7)	Avoided stash houses Moved from partner to team Took on partner (or planned to)
Major Adjustments		Adjustments in all domains

		Changed drugs sold Moved to another part of the country

This submission involves no conflicts of interest.

EXHIBIT B

International Drug Policy Consortium
A global network promoting objective and open debate on drug policy

Modernising Drug Law Enforcement

Report 3

Applying harm reduction principles to the policing of retail drug markets

Alex Stevens *

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Key Points:

- The level of harm is more important than the size of the market.
- Visible, open air drug markets tend to be more harmful per unit of use than hidden, closed drug markets
- Policing tactics that are not experienced by the community as being fair, lawful and effective will harm police legitimacy and community relations.
- Some enforcement-led approaches, including short-term crackdowns and large scale stop and search, are unlikely to produce sustainable reductions in drug sales. They may increase levels of violence and health harms and reduce police legitimacy.
- It is rarely possible to eliminate retail drug markets, but well designed and implemented policing tactics can force the drug market to take less harmful forms.
- Applying harm reduction principles to drug policing may boost police legitimacy as well as community safety.
- Focused deterrence and 'pulling levers' may reduce both harm and crime, but this depends on the context and on careful implementation and evaluation.

Introduction

The policing of drug markets is usually conceptualised primarily as a matter of law enforcement – drug dealers and people who use drugs (PWUDs) are breaking the law, and the role of the police is to reduce such law breaking. However, the wider purpose of policing is to ensure the safety of the community by reducing harms to its members. This report examines the interaction between law enforcement and harm reduction in the policing of retail level drug markets.

Harm reduction is a principle that has been widely accepted as an important pillar of the health policy response to drug use.[1] It has less frequently been applied to policing, although

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this is not the first report to do so.[2] Harm reduction can be justified on both pragmatic and ethical grounds. Pragmatically, it emphasises a concern for what actually works in reducing harms, rather than for what might be hoped to work in eliminating drug use. Ethically, it reflects the emphasis of both international human rights treaties and rationalist morality[3] on the legal and moral imperative for states to act in ways that support human rights.

The first step in applying harm reduction principles is to define the harms that are to be targeted; in this case the harms associated with retail drug markets. Here, we can lean on the work that has already been done in this area by Caulkins and Reuter.[4] They themselves borrow the list of drug-related harms created by MacCoun and Reuter[5] and highlight those that are most directly relevant to policing (See Box 1).

Box 1. Drug related harms (Bold typeface indicates those most directly related to policing)

1. Suffering due to physical/mental illnesses
2. Addiction
3. Healthcare costs (treatment)
4. Healthcare costs (illness)
5. Disease transmission
6. Loss of incentives to seek treatment
7. Restriction on medicinal uses of drug
8. Reduced performance, school
9. Reduced performance, workplace
10. Poor parenting, child abuse
11. Harmful effects of stigma due to use
12. **Accruing criminal experience**
13. **Elevated price of substance**
14. Accident victimisation
15. **Fear, sense of disorder**
16. **Property/acquisitive crime victimisation**
17. **Violence, psychopharmacological**
18. **Violence, economically motivated**
19. **Reduced property values near markets**
20. Criminal justice costs (including opportunity costs)
21. Punishment and its consequences for user and family
22. **Corruption, demoralisation of legal authorities**
23. Interference in source countries
24. Violation of the law as intrinsic harm
25. **Devaluation of arrest as moral sanction**
26. **Infringement on liberty and privacy**
27. Prevention/restriction of benefits of use

It should be noted that these harms can be influenced in both directions by policing practices. For example, decisions on police tactics will most probably affect the costs that the criminal justice system imposes on the taxpayer. This is not only because of the upfront costs of targeting police resources on drug markets, but also on the 'downstream' costs that arrest and prosecution may impose on courts, prisons and probation services. Less directly, certain forms of policing may increase rather than reduce opportunities and incentives for violence, corruption, unsafe drug use practices (e.g. injecting heroin with used needles). While frequent, visible search and arrest of PWUDs might have some effects in deterring drug use and related harms, it may also infringe on the rights to health, liberty and privacy and devalue arrest as a moral sanction for other offences which may be seen as more serious by some members of the community.

Policing of drug markets also plays an important part in boosting or harming the legitimacy of the police. The concept of legitimacy echoes the 'Peelian idea' that the police should be embedded in networks of cooperation with the communities they serve. The police need information from the community in order to detect crime. Perhaps more importantly (and certainly according to Sir Robert Peel's legendary policing principles) they seek to achieve compliance with the law without the need for detection and punishment, by securing the absence of crime. But in order to do this, they need to be viewed as legitimate by the community.[6] According to Bottoms and Tankebe, this legitimacy rests on three elements: procedural fairness, lawfulness, and effectiveness. Procedural fairness arises when people are confident in the impartiality of the police and when they are treated with dignity and respect. Lawfulness requires that the police themselves act legally. And effectiveness refers to the outcomes of police actions; do people feel that they are being protected from crime? This report shares the assumption of Felbab-Brown that state interventions in drug markets must be seen to be legitimate if they are to be effective.[7] Interventions that are not seen as legitimate are likely to increase tensions between police and citizens, reduce the flow of intelligence that the police can use and increase resistance to police actions. This leads to lower levels of community safety and an increased risk of crime. Bottoms and Tankebe also refer to the potential for police action to generate legitimacy. The police can boost their reputation with the community by carrying out operations that are perceived as fair, lawful and effective.[8]

This report discusses some forms of policing that produce harms, including harms to police legitimacy. It goes on to look at policing tactics that have been designed explicitly to reduce harm, and the evidence for their effects and sustainability. It examines some issues in the implementation and evaluation of such practices in the UK and Brazilian contexts. It concludes with a set of recommendations for consideration by policy makers and senior police officers when they are designing policing methods in order to reduce harms related to retail drug markets.

Harmful drug law enforcement

There are three main forms of harm that may render policing tactics counter-productive. Police activities may increase violence associated with drug markets, increase health harms related to drug use and reduce police legitimacy (which may in turn increase criminality).

Policing and violence

We should first address the issue of whether retail drug markets are inherently violent. If all drug markets are equally violent then their reduction or elimination would properly be the target of policing. But if some market forms are more violent than others, then the police

can enhance community safety by encouraging markets to take less violent forms. In the most frequently cited article on drugs and crime, Goldstein[9] assumed that illicit drug markets are indeed inherently violent. Goldstein's concept of 'systemic' violence assumes that the presence of drug dealers who are predisposed to violence, combined with an absence of legitimate mechanisms for conflict resolution, produces high levels of violence. While it is true that some drug markets in some places are exceedingly violent, this is the exception rather than the rule. Goldstein's testing of his framework occurred near the peak of violence related to the New York crack market.[10] Research from some other markets – including markets for both heroin and cannabis – suggests a much lower prevalence of violence.[11] Not all drug dealers are predisposed to violence. Many of them actively avoid it. Instead, they use relations of trust and the norms of reciprocity that develop in markets for both licit and illicit products.[12]

As Felbab Brown notes in Report two of this series, *Focused deterrence, selective targeting, drug trafficking and organized crime: Concepts and practicalities,* a stable wholesale or trafficking operation can be non-violent. But perturbation of this stability can lead to violence.[13] Bowling bases his claim that drug law enforcement is criminogenic on evidence from the Caribbean where arrests in mid-level drug markets, through the arrest of key market players, has led to violence as subordinates and competitors fight over who will fill the gap that has been left in the market.[14] Recent evidence from Denmark has found a significant association between increased arrests of cannabis dealers and subsequent increases in violence.[15] This supports earlier US research in suggesting that law enforcement in retail level cannabis markets can also increase violence. The most thorough review that has so far been carried out on this topic is that by Werb et al.[16] Of the 15 studies that they reviewed, 14 found an association between drug law enforcement and increased levels of violence. It should, however, be noted that the method of comparison adopted did not allow for thorough consideration of the types of drug law enforcement that were being tested. It is no doubt possible, as seen below, to design policing interventions that reduce both drug transactions and violence.

The studies referred to above looked at the effect of increasing law enforcement interventions in drug markets. Studies which look at the effect of reducing levels of drug law enforcement are less common. At the national level, the experience of Portugal suggests no consistent link between drug decriminalisation and violence (murders did increase in the years immediately following decriminalisation, but then reduced to their pre-2001 level. Any increase may have been more to do with increased drug seizures at the level of importation than to the relaxing of punishment of drug consumers).[17]

At the local level, we do have the experience of the Lambeth Cannabis Warning Scheme. This saw police officers being told not to arrest people for possession of small amounts of cannabis in an area of South London for 12 months from July 2001. The justification given for this was that it would allow the police to focus their resources on crimes which the local community were more concerned about, such as robbery, burglary, sexual offences and class A drug offences (e.g. heroin and cocaine). An econometric study has found that, when compared to other London boroughs, the Lambeth cannabis experiment was associated with medium term reductions in non-drug crimes and with increases in their clear-up rates.[18] This is despite the findings that recorded cannabis offences increased (this may have been because officers increased their recorded detection of these offences when it meant giving a warning rather than a more time-consuming arrest). There was little, if any, apparent effect on class A drug crimes. The Lambeth scheme has been replicated in various forms across England and Wales since 2004 with the national use of the cannabis warning. Unfortunately, this replication was not designed

with evaluation in mind and the effects on non-drug crimes are unknown. The available data do suggest that the prevalence of both cannabis use and violence has fallen since 2004.[19]

Policing and health

Evidence on the health effects of drug policing strategies is less frequently taken into account, despite proposals to include the effects of law enforcement in public health strategies on HIV and AIDS.[20] Generally, prohibition of drugs increases their price, which can encourage users to inject (rather than smoke or snort) in order to maximise their intake from a limited supply. The transition to injection is itself associated with major health risks internationally.[21] At least one country – the Netherlands – which has reduced the punitiveness of its response to PWUDs has seen important successes in reducing the rate of injecting drug use.[22] Some studies have found that local policing tactics can contribute to increased health risks for PWUDs. For example, the criminalisation of drug possession encourages people who inject drugs (PWIDs) to inject hurriedly in unsafe environments, thereby increasing risks of transmitting blood-borne viruses.[23] Any short-term reductions in drug sales brought about by police crackdowns may be outweighed by consequent public health harms.[24] The criminalisation of the distribution of injecting paraphernalia leads to lower coverage for harm reduction measures such as needle exchange.[25] And lower coverage by needle exchange is associated with higher rates of HIV among PWIDs.[26] Another health risk associated with drug use is overdose. This is usually not fatal when there is a suitable emergency response, but fear of arrest makes many people who witness an overdose less likely to seek medical assistance.[27] Overall, the policing response to PWUDs must be considered as part of the 'risk environment' of drug use.[28] Issues relating specifically to PWIDs are discussed in Report 1 of this series.[29]

Police legitimacy

Beyond harms of violence, virus transmission and untimely death, policing tactics will also affect levels of police legitimacy. One widespread approach in drug policing which threatens legitimacy is stop and search (known as 'stop and frisk' in the USA). This is supposed to enable police officers to detect offenders, producing evidence for arrest and prosecution and deterring would-be offenders from carrying both drugs and weapons. It is also open to widespread abuse. One of the main problems has been the disproportionate use of stop and search on young people of black and minority ethnic origin. The overuse of stop and search was notoriously linked to the eruption of the Brixton riots in 1981.[30] It has also been blamed by some – though not all – commentators for the more recent outbreak of rioting in some English cities in the summer of 2011.[31] In New York, despite the fact that possession of marijuana was officially decriminalised in the late 1970s, it is still used as a pretext for a very large proportion of stops, which are overwhelmingly targeted at people who are not of white European descent.[32] There have been discussions as to whether the over-representation of black people in such figures (both in the UK and USA) can be explained by the over-representation of black people on the streets where police activities are targeted, rather than by any racist purpose.[33] These statistical disputes are likely to be of little import to the people who accurately perceive that it is they and people who share their skin tone who are most frequently stopped and searched.

In terms of legitimacy, stop and search challenges standards of procedural fairness. If people feel that they are being picked on for no adequate reason and are not treated respectfully in the process, then their perception will be that there is no justice for them. Some elements of stop and search can also be illegal. For example, a Federal District Court recently ruled that a policy in New York of routinely stopping and frisking people at residential properties (known as the 'Clean

Halls' programme) was unconstitutional.[34] The flexibility of the term 'reasonable suspicion' – which is used in several jurisdictions (including in section 23 of the British Misuse of Drugs Act) as a pre-condition of stop and search – means that police officers often bend the term beyond reason to continue stopping those whom they consider to pose a risk to the community. This can also be illegal, and therefore undermine the legitimacy of police action. The question of effectiveness of stop and search is vexed. High quality research designs are rare in this area, but a British Home Office review found that stop and search played a negligible role in crime reduction, reducing the number of 'disruptable' crimes by just 0.2 per cent.[35]

Another important threat to the legitimacy of the police is the presence of corruption. The huge profits that are made in the illicit drugs trade present incentives for corruption at every part of the supply chain from farmer to consumer. In retail drug markets, corruption may take the form of police officers being paid to provide intelligence to drug dealers (e.g. tip offs about forthcoming police operations), planting drugs on members of the public in order to justify arrest, diverting cash found on drug dealers to their own pockets and even direct involvement by police officers in the sale of confiscated drugs. Given that these forms of corruption are most visible to people who are already involved in drug offences, they are highly likely to damage the legitimacy of the police in their eyes and therefore to encourage them to maintain and develop their offending. When this corruption is made open to public view by court cases and press reports, it severely damages police legitimacy in the eyes of the whole community. The reduction of opportunities for police corruption can therefore also contribute to crime and harm minimisation.

Opportunities for harm reduction in policing retail drug markets

This section will look at approaches for dealing with two potential target groups for police action – PWUDs and drug sellers.

People who use drugs

The most direct way in which the police can reduce harm is to stop imposing criminal records and other punishments which harm people. In the vast majority of minor drug offences that are committed (i.e. simple possession of small amounts of cannabis) the criminal record is likely to cause more harm to the person than their drug use, even when accounting for an increased risk of psychosis among some of these people.[36] The internationally available evidence suggests that the harms of criminalising PWUDs are not counterbalanced by reductions in drug use. There is no correlation internationally between levels of punishment and levels of drug use.[37] Among European countries which changed their penalties for cannabis in the first decade of this century, there was no consistent association between reductions in penalties and increases in use (or between increases in penalties and reductions in use).[38]

There are diverse ways in which the police can avoid criminalising people who are found in illicit possession of drugs.[39] One is the English cannabis warning scheme that is discussed above. Other countries, including Portugal and various Australian states, have introduced mechanisms of diversion to non-criminal penalties.[40] In some countries – including Colombia, Spain and Germany – the courts have ruled that it is unconstitutional to punish people for possessing small amounts of some drugs. All these methods reduce the extent of harm that is imposed by criminalisation, although they can result in so-called 'net-widening' (See Box 2) and do not guarantee that these reductions are applied equally across

Box 2. Diversion, net-widening and boundary blurring

While decriminalisation and diversion can play a valuable role in reducing the harms of criminalisation, there is also the possibility of 'net-widening' and 'boundary blurring'.[42] Net-widening occurs when an alternative measure is created – usually with the intention of reducing the use of expensive, punitive penal responses – which results in practice in sucking in new people, rather than replacing the original measure. Boundary blurring occurs when the new measure makes it more difficult to tell where the penal system ends and the treatment or educative response begins.

The English cannabis warning system has created a clear example of net-widening. Immediately after the introduction of the cannabis warning in 2004, there was a significant reduction in the number of people who were arrested and given cautions or convictions for cannabis possession. But a much greater increase in the number of cannabis warnings were given. This led to a significant increase in the number of drug offences and seizures that were recorded. Since the late 2000s, there has been a re-growth in the number of people given criminal records through cautions and convictions for cannabis possession (following the common pattern of maintenance or re-growth of penal responses following the creation of alternatives). The net result has been a significant expansion in the number of people getting some sort of criminal justice intervention for cannabis use, despite a reduction in the number of people using cannabis.

There have also been some significant examples of net-widening in Australia. For example, the South Australian Cannabis Notice Expiation Scheme saw a 280 per cent increase in the number of notices given between 1987/8 and 1996/7.[43] Such expansion can have the effect of increasing demand on the educational and treatment services to which PWUDs may be diverted. It can also blur the boundary between criminal justice and other services. Health services may find it wasteful of their resources to spend time dealing with low level cannabis offenders when they would prefer to focus their resources on people with more harmful patterns of drug use.

groups within society that are using drugs. It has been reported, for example, that people who use drugs from economically vulnerable communities in Colombia are still exposed to criminalisation and incarceration more often than their wealthier peers.[41]

The most famous example of the reduction of penalties for drug possession comes from the Netherlands, where – since 1976 – prosecutors and the police have agreed not to pursue PWUDs (and dealers) for possession of small quantities of cannabis. This appears to have succeeded in separating the markets for cannabis and those for heroin and cocaine, thereby reducing the 'supply gateway' from cannabis to more harmful substances.[44] Recently, the Dutch government attempted, in the face of opposition from several municipal authorities, to impose controls on who would be allowed to buy cannabis in coffee shops. The fall of this government in 2012 ended the attempt to force all potential purchasers to register to receive a 'wietpas'. Some municipalities (holding a minority of the coffee shops) are going ahead with the banning of foreigners from using the coffee shops, with

early reports that this has led to rekindling unregulated open air street drug markets in these cities.

Drug sellers

The coffee shop system has been credited with improving the regulation of retail drug sales in the Netherlands, especially since tighter controls and enforcement (e.g. banning advertising and limiting amounts of drugs to be stored and sold) were introduced in the mid-1990s.[45] Violence in the retail side of the Dutch cannabis market is relatively rare, especially when compared to some American drug markets.

Levels of violence that have been associated with drug sales in some cities of both hemispheres of the American continent have fluctuated wildly over the years. The best known example is again provided by New York. Ric Curtis and Travis Wendel[46] have been following these developments for many years. They have shown how specific types of markets are associated with different types and levels of violence, and that police activities can influence what form the market takes. In the 1980s, drug-selling operations that had corporate characteristics took control of drug sales. They had hierarchical structures, internal divisions of labour (including the hiring of violent enforcers) and tended to control discrete drug selling territories. Intelligence-led policing took down many of these organisations, and their territories were displaced by a gentrifying housing market. The drugs market shifted to a looser collection of freelance retailers, all of them competing for territory and customers. Not only did the dealers fight for these profitable assets, they were prey to robbery and violence from some of the enforcers who had previously been on the more stable payroll of hierarchical gangs. Police targeting of these street corner entrepreneurs (and the development of mobile phone technology) then incentivised and enabled the development of a third kind of market; indoor sales by delivery. These sellers had no physical territory to protect. For them, violence served only to draw the attention of the police. So they avoided it. This model also had the benefit of reducing the presence of visible, open air drug markets. Such markets host a multitude of 'signal crimes'[47] which may also delegitimise the police and encourage other offending. In terms of harm reduction, hidden indoor sales by delivery are much less likely to be harmful, per unit sold, than visible, open air drug sales.

Another reported example of success in reducing the violence related to drug markets has come from High Point, North Carolina. The 'drug market intervention' here involved 'creating swift and certain consequences by "banking" existing drug cases; addressing racial conflict between communities and law enforcement, setting strong community and family standards against dealing; involving dealers' family members, and offering education, job training, job placement, and other social services'.[48] The 'banking' of drug cases involved collecting sufficient evidence to prosecute dealers, and then showing them the evidence in order to convince them that any continuation of their activities would certainly lead to incarceration. The evaluators reported that this led to the closure of the targeted open air drug markets, and to a reduction of violence in these areas. This approach of 'pulling levers' is an example of 'targeted' or 'focused' deterrence, as discussed in Report 2 of this series.[49] Kleiman argues that appropriately targeted and credible threats of swift punishment can lead to reductions in crime that reduce the need for actual punishment to be inflicted. So they can reduce the harms and costs of arrest and incarceration, as well as the prevalence of crime. This is surely the holy grail of drug policing, but some caution is warranted on claims that this grail has been found.

A more recent article on High Point has noted that evidence is available to support both proponents and critics of this approach.[50] There was a significant reduction in violence in the targeted areas, but there was also an increase in violence

across the city after the intervention. In addition, the reductions were only seen in the areas that had the highest levels of chronic violence. They were not achieved in drug markets with lower levels of violence. This echoes the pattern of reception of the 'Boston miracle'; Operation Ceasefire. This was an earlier 'pulling levers' intervention that brought together a partnership of the police and local community organisations. They presented local violent youths with a clear choice – avoid violence and accept help with education and employment, or go to prison immediately. Initial reductions in violence were dramatic and well-publicised. Less well known is the fact that violence bounced back when the partnership broke down due to the departure of its police coordinator and conflict between members.[51] Nevertheless, aspects of Operation Ceasefire influenced the development of targeted deterrence schemes in other parts of the world, notably Brazil; although there as well, the approach has not been without its downsides (see Box 3).

Box 3: Rio de Janeiro's 'Pacifying Police Units' (UPP)*

Rio de Janeiro has a long history of violence associated with drugs, organised crime and police repression. In Rio, the drug trade remains concentrated within economically and socially vulnerable communities living in the city's *favelas* (slums). In the 1970s, Rio became an important transit point for cocaine exports to North America, Europe and South Africa. Newly established drug factions quickly settled in the *favelas*, where they became important figures in the socio-political life of the community, providing them with health and social services and opportunities for employment in the drugs trade – services that were not offered by the government itself. In the 1980s and 1990s, divisions within and between drug factions, the increasing availability of high-calibre weapons, and violent police interventions in the *favelas* led to increasing levels of violence. High numbers of deaths (in 2010, the murder rate in Rio reached 46 per 100,000 inhabitants), an overcrowding of Brazilian prisons with drug offenders, high levels of corruption, and an ever-expanding drug market led the local government in Rio to review its drug policy.

Launched in 2008 in the *favela* of Santa Marta, UPPs ('*Unidades de Policía Pacificadora*', Pacifying Police Units) reflect a new public security policy that combines law enforcement with actions seeking to tackle the social, economic and cultural aspects of the drug market. A key element of this policy is that it should focus on those areas where the market is most harmful, while acknowledging that some level of trafficking will be tolerated elsewhere. The pacification process consists of four steps:

- **invasion**: this step aims to retake control of the territories under the influence of a drug 'cartel'; it involves the intervention of the military
- **stabilisation**: while in the past the military has been used to invade problematic *favelas* only to withdraw a few hours later, this new strategy entails that the military remain in the pacified territory until the UPPs take over
- **occupation**: the UPPs start to operate in the *favelas* and seek to restore the rule of law through a system of community policing

- **post-occupation**: the UPPs develop a strong relationship of trust with the community and establish socio-economic programmes to boost education and employment opportunities.

Between 2008 and 2012, 17 *favelas* were retaken by the UPPs. Several concerns have been raised about the policy, however. First, some have criticised a feeling of militarisation of the communities, with the military remaining in the *favelas* for an extended period of time, leading to tight police control, arbitrary search and seizures and harassment. Others have raised concerns about the capacity of the UPPs to tackle drug-related violence extensively. Indeed, out of the 1,000 *favelas* in the city, only 17 have been pacified so far. This may lead organised criminal groups to migrate to those neighbouring *favelas* that have not yet been pacified and resume their violent activities. Nevertheless, the UPPs have been well received by *favela* residents. A study in eight pacified *favelas* found that 83 per cent of the residents considered that their security situation had improved as a result of the programme.[52]

* Text box drafted by Marie Nougier, Research and Communications Officer, International Drug Policy Consortium

A recent review of experimental evaluations of focused deterrence approaches has found that they do tend to produce reductions in crime, but that more research is necessary into the dynamics, transferability and sustainability of these reductions.[53]

Implementation, evaluation and austerity

In their review of the effectiveness of drug law enforcement interventions, Mazerolle et al[54] suggested a hierarchy of effectiveness of different policing approaches. At the bottom of this hierarchy, they placed generic, unfocused police patrols, which have not been shown to have a substantial effect in reducing drug markets or their harms. Then came community wide approaches involving a range of partners, which have some evidence of effect, but not as much as more specifically targeted approaches, such as place-based 'hotspot' policing. This has some evidence of producing reductions in drug and other crimes, but these tend not to be sustained when the targeted policing resources are withdrawn (and they may produce some of the harms discussed above). At the highest level of their hierarchy, Mazerolle et al placed interventions that combine a problem-oriented, geographical targeting with efforts to create and sustain partnerships of agencies and actors (including local landlords) which can help to sustain reductions in drug markets and related harms.

In 2009, the UK Drug Policy Commission (UKDPC) found some evidence that police services in the UK have been learning the lessons of the research which Mazerolle et al reviewed. The UKDPC's report[55] includes a number of case studies which show the adoption of problem-oriented, place-focused, partnership-led operations. One example is Operation Reduction in Brighton. This runs in eight week phases, with intelligence being gathered in local drug markets through test purchasing to identify drug dealers who are causing the highest levels of harm through dealing and other crimes. This is followed by an arrest phase in which arrestees are encouraged to enter the drug treatment programmes that are made available to them. This has been evaluated as successful in reducing acquisitive crime in the area, and particularly among the individuals who were arrested. Similar claims have been published about Operation Iceberg in Kent and Operation Brava in Leeds. It is highly plausible, given the known successes of the

'pulling levers' approach – and of drug treatment in reducing offending – that these programmes reduced some forms of offending. However, it is regrettable that their evaluations have not included adequate control groups or systematic analysis of potential unintended consequences on violence and public health. The UKDPC report, for example, notes that there were initial problems in Operation Reduction with a group of dealers who replaced arrestees. These new dealers offered higher purity heroin which produced a short-term spike in overdose deaths (until these dealers were themselves arrested).

A report by the evaluators of Operation Reduction suggested that the evaluation of such initiatives can be costed at about £20,000.[56] Unfortunately, it costs much more than this to produce robust and comprehensive analysis of the effects of police operations on the full range of drug market harms. However, the failure to invest in such rigorous evaluation means that we are probably wasting much larger sums on programmes that are not effective, or that are actively counter-productive.[57]

The resources available for the policing of British drug markets (as for all other areas of public service) are under severe pressure. Another UKDPC report[58] found that a majority of polled police services expected to reduce their spending on the policing of drug markets. Intelligence gathering operations (of the type necessary for pulling levers) were considered particularly vulnerable. Police services also knew that potential partners across the public sector also had to reconsider the resources that they devote to partnership working. The need to follow the governmental mantra of doing 'more for less' is particularly acute in the policing of drug markets. There is an opportunity to do less of the things that are expensive and potentially counter-productive (e.g. unfocused patrolling, large-scale stop and search, numerous arrests of PWUDs, short-term crackdowns on dealers) and more of the things that provide value for the police and partners in health and local authorities. This would include maintaining and developing investment in operations that force the drug market to adopt less visible and harmful forms, working with partners (including landlords) to shape the social context of local drug markets and continuing to divert people dependent on drugs into cost-effective treatment. In an age where the police are having to scale back their numbers, it becomes increasingly important that their resources are spent effectively and that they act in ways that boost their legitimacy and thereby the non-coerced law abidance of local citizens.

Conclusions and recommendations

The police provide a crucial service to the public in reducing the harms of crime. This report has explored how this service can be enhanced. This involves avoiding practices which tend to produce crime and other harms. It also involves adopting tactics that have the best chance of reducing the harms associated with drug markets.

The police in many countries have learnt that a blanket approach which aims to eliminate drug markets is not feasible. Not all drug markets are equal in terms of the harms they produce. And untargeted, enforcement-only approaches are unlikely to produce sustainable reductions in either the scale of the drug markets or level of harms.

Below is a list of recommendations for consideration by policy makers and senior police officers who are designing and managing the policing of retail drug markets.

1. There should be increased recognition that the level of harm is more important than the size of the market.

2. Police services and policy makers should use tactics that are experienced by the community as being fair, lawful and effective. Otherwise, they will harm police legitimacy and community relations.

3. Policies and strategies should recognise that visible, open air drug markets tend to be more harmful per unit of use than hidden, closed drug markets.

4. There should be increased appreciation that some enforcement-led approaches, including short-term crackdowns and large scale stop and search, are unlikely to produce sustainable reductions in drug sales. They may actually increase levels of violence and health harms and reduce police legitimacy.

5. That policing tactics can force the drug market to adopt less harmful forms should be embraced and foregrounded in the design and implementation of anti-drug approaches

6. Policing of drug markets should be designed in order to minimise opportunities for corruption

7. Potentially effective tactics include decriminalisation/depenalisation, 'pulling levers', focused deterrence, diversion to treatment and other problem-oriented, partnership approaches.

8. In an age of austerity, it is necessary to concentrate resources on policing tactics which have the greatest chance of delivering both community safety and value to the taxpayer.

9. More research is needed to ascertain which tactics are likely to be most effective in which local and national contexts. Failure to invest in robust evaluation is a false economy.

Modernising Drug Law Enforcement

A project by IDPC, with the participation of the International Security Research Department at Chatham House and the International Institute for Strategic Studies

Drug law enforcement has traditionally focused on reducing the size of the illicit drug market by seeking to eradicate drug production, distribution and retail supply, or at least on the stifling of these activities to an extent that potential consumers are unable to get access to particular drugs.

These strategies have failed to reduce the supply of, or demand for, drugs in consumer markets. Given this reality, and a wider policy context where some governments are moving away from a 'war on drugs' approach, drug law enforcement strategies need to be adjusted to fit the new challenge – to manage drug markets in a way that minimises harms on communities. A recognition that law enforcement powers can be used to beneficially shape, rather than entirely eradicate, drug markets is being increasingly discussed.

The objective of this project, led by IDPC, with the participation of the International Security Research Department at Chatham House and the International Institute for Strategic Studies, is to collate and refine theoretical material and examples of new approaches to drug law enforcement, as well as to promote debate amongst law enforcement leaders on the implications for future strategies. Dave Bewley-Taylor is the editor of the Modernising Drug Law Enforcement project publication series. For more information, see: http://idpc.net/policy-advocacy/special-projects/modernising-drug-law-enforcement.

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EXHIBIT C

JAMA Network Open

Research Letter | Public Health

Association of Law Enforcement Seizures of Heroin, Fentanyl, and Carfentanil With Opioid Overdose Deaths in Ohio, 2014-2017

Jon E. Zibbell, PhD; Arnie P. Aldridge, PhD; Dennis Cauchon; Jolene DeFiore-Hyrmer, MPH; Kevin P. Conway, PhD

Introduction

The United States continues to experience an unprecedented overdose crisis. Fentanyl overdose deaths increased 525% from 3105 in 2013 to 19 413 in 2016 and then increased 45.2% from 19 413 in 2016 to 28 466 in 2017, with fentanyl overdose deaths outpacing deaths from both prescription opioids and heroin in 2016 and 2017.[1,2] The Drug Enforcement Administration[3] reported a 5-fold increase in national law enforcement seizures of illicitly manufactured fentanyls, and fentanyl overdose deaths increased substantially over this period. The Centers for Disease Control and Prevention[4,5] has endorsed using law enforcement drug seizures as a proxy indicator for the illicit drug supply, and a joint investigation between the Centers for Disease Control and Prevention and the state of Ohio[6] demonstrated concurrent increases in fentanyl overdose deaths and fentanyl seizures. Less known, however, is whether there are associations between law enforcement drug seizures and drug overdose deaths.

+ Invited Commentary

+ Supplemental content

Author affiliations and article information are listed at the end of this article.

Methods

Ohio's Bureau of Criminal Investigation provided drug seizure information associated with state and local drug cases from the state's 88 counties that were tested by 3 public laboratories from 2014 to 2017.[6] Each record contained a list of drugs detected by qualitative testing via gas chromatography–mass spectrometry, the confiscation date and county, and the weight in grams. We first constructed monthly statewide counts for seizures that contained heroin, fentanyl, carfentanil, cocaine, and methamphetamine and then calculated the percentage of seizures of heroin, cocaine without heroin, and methamphetamine without heroin that also contained fentanyl or carfentanil. Overdose death data were obtained from the Ohio Department of Health from January 2014 to December 2017 and were rereviewed and recoded for fentanyl or fentanyl analogue detection. Overdose deaths were those for which the cause of death, according to *International Statistical Classification of Diseases and Related Health Problems, Tenth Revision* codes, was unintentional (X40-X44), suicide (X60-X64), homicide (X85), or undetermined intent (Y10-Y14). We coded overdose deaths as opioid-involved if *International Statistical Classification of Diseases and Related Health Problems, Tenth Revision* codes T.40.0, T.40.1, T40.2, T40.3, T40.4, or T40.6 were indicated, or if the Ohio Department of Health's rereview included a separate flag for fentanyl or fentanyl analogues. We summed opioid-involved deaths to yield a monthly, statewide count.

Drug seizures are presented for heroin (29 917 seizures), cocaine (24 462 seizures), and methamphetamine (20 957 seizures) by year from 2014 to 2017, including the percentage of fentanyl or carfentanil in each drug category. Percentages of fentanyl or carfentanil are presented for a subsample with nonmissing weights by 3 weight strata (<1 g, >1 g but ≤30 g, and >30 g), with mean, median, and 99th percentile weights provided for seizures greater than 30 g. A Mantel-Haenszel test compared the distribution of fentanyl or carfentanil across weight categories over the 4-year period. A multivariate, generalized, autoregressive, conditional-heteroskedasticity model estimated the association between drug seizures and drug overdose deaths. This cross-sectional study received a full review and was approved by the institutional review board at the Ohio Department of Health. All data were administrative records and the study did not require an informed consent process. All analyses were completed using Stata MP statistical software version 15.1 (StataCorp). Additional

Table. Percentage of Law Enforcement Seizures of Heroin, Cocaine, and Methamphetamine With Fentanyl or Carfentanil by Seizure Weight, Ohio, 2014-2017[a]

Drug	Seizures, No. (% With Fentanyl or Carfentanil)			
	2014	2015	2016	2017
Heroin				
All seizures	7715 (3.4)	9151 (9.0)	7809 (25.0)	5242 (48.6)
All seizures with weight	5869 (3.3)	6778 (9.0)	6028 (25.4)	4500 (49.8)
By seizure weight, g[b]				
≤1	4654 (3.5)	5236 (9.9)	4767 (27.5)	3576 (52.0)
>1 but ≤30	1132 (2.4)	1412 (6.0)	1141 (18.0)	835 (44.7)
>30[c]	83 (3.6)	130 (3.9)	120 (9.2)	89 (11.2)
Cocaine, with no heroin present				
All seizures	4898 (0.7)	5599 (1.7)	7102 (4.9)	6863 (11.3)
All seizures with weight	3727 (0.3)	3955 (0.4)	5197 (2.1)	5397 (5.9)
By seizure weight, g[b]				
≤1	2568 (0.5)	2545 (0.6)	3419 (2.7)	3611 (7.1)
>1 but ≤30	1071 (0.0)	1274 (0.0)	1607 (0.9)	1623 (3.8)
>30[d]	88 (0.0)	136 (0.0)	171 (0.6)	163 (0.0)
Methamphetamine, with no heroin present				
All seizures	2517 (0.2)	3576 (0.5)	5519 (1.6)	9345 (2.9)
All seizures with weight	1610 (0.1)	2292 (0.0)	4127 (0.4)	7764 (1.2)
By seizure weight, g[b]				
≤1	1070 (0.1)	1534 (0.0)	2901 (0.5)	5364 (1.5)
> 1 but ≤30	393 (0.0)	539 (0.0)	1031 (0.1)	2208 (0.8)
>30[e]	147 (0.0)	219 (0.0)	195 (0.0)	192 (0.0)

[a] Seizures are reported from the Ohio Bureau of Criminal Investigation's 3 state laboratories. Test of statistical significance of percentage of synthetic drugs by seizure weight, by year is the Mantel-Haenszel χ^2 test with 1 *df*.

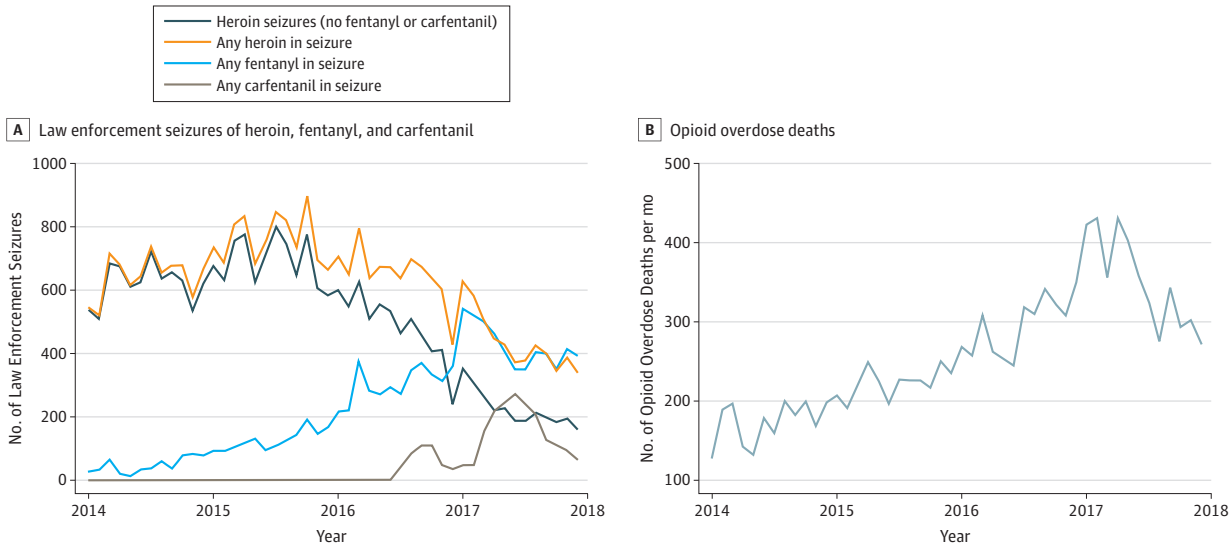
[b] $P < .001$.

[c] Mean, 192 g; median, 68 g; 99th percentile, 1542 g.

[d] Mean, 272 g; median, 72 g; 99th percentile, 2136 g.

[e] Mean, 245 g; median, 88 g; 99th percentile, 3573 g.

Figure. Opioid Overdose Deaths and Law Enforcement Seizures of Heroin, Fentanyl, and Carfentanil, Ohio, 2014 to 2017



A, Law enforcement seizures of heroin, fentanyl, and carfentanil are shown by month. B, Opioid overdose deaths are shown by month.

model details are included in the eAppendix in the Supplement. All statistical tests were 2-sided, and $P < .05$ was considered statistically significant.

Results

Of the 15 104 overdose decedents from 2014 to 2017, 34.3% were female and 1.8% were Hispanic (race was not reported), with a median age of 40 years (interquartile range, 31-51 years). The mean (SD) monthly number of opioid-involved overdose deaths was 260 (78). Of the 29 917 seizures of heroin identified, 23 175 (77.5%) included weights in grams. The percentage of these containing fentanyl or carfentanil increased from 3.4% in 2014 to 48.6% in 2017. Most of the increase involved seizures weighing less than 30 g. By 2017, 52.0% of heroin seizures less than 1 g and 11.2% of heroin seizures greater than 30 g contained fentanyl or carfentanil. Overall, changes in the distribution of the percentage of heroin seizures containing fentanyl or carfentanil over time and across weight categories were statistically significant ($\chi^2 = 3528$; $P < .001$). Among 18 276 cocaine seizures with weights available in 2017 not containing heroin, 7.1% contained fentanyl or carfentanil, all of which were less than 1 g. Among 558 cocaine and 753 methamphetamine seizures weighing more than 30 g, less than 0.5% contained fentanyl or carfentanil (**Table**).

Increases in opioid overdose deaths were associated with increases in fentanyl or carfentanil seizures from 2014 until mid-2017 (**Figure**). Heroin seizures not containing fentanyl or carfentanil decreased consistently from 2014 to 2017, whereas heroin seizures containing fentanyl or carfentanil increased steadily. The adjusted multivariate, generalized, autoregressive, conditional-heteroskedasticity model shows that fentanyl seizures were significantly associated with overdose deaths, with every additional fentanyl seizure associated with an increase in deaths, with a continuous coefficient of 0.58 (95% CI, 0.41-0.74; $P < .001$). Carfentanil seizures were the only other significant covariate, with a coefficient of 0.34 (95% CI, 0.12-0.51; $P = .002$).

Discussion

By integrating overdose mortality data from Ohio's Vital Statistics System with state crime laboratory data from Ohio's Bureau of Criminal Investigation, we demonstrate a significant association between law enforcement drug seizures and overdose deaths in Ohio from 2014 to 2017. To our knowledge, this is the first study to offer an empirical basis for using crime laboratory data as a viable indicator of opioid overdose deaths. This analysis is limited by the administrative character of crime laboratory data, which, like other institutional data systems (eg, electronic health records), are subject to internal measurement error. Because quantitative testing was not performed by Ohio's Bureau of Criminal Investigation, the analysis could not identify percentage amounts of fentanyl and carfentanil in heroin, cocaine, and methamphetamine seizures and, thus, was unable to determine whether fentanyl adulteration was intentional or the result of unintentional trace contamination. The absence of drug seizures from private laboratories limits a comprehensive portrait across Ohio; however, the strength of our findings and large sample size suggest that our conclusions would not change materially by including samples from private laboratories. Our analyses were limited to Ohio and may not generalize beyond this state.

These findings underscore the importance of partnerships between public health and public safety to address the opioid overdose epidemic. Active data sharing between law enforcement and public health agencies can facilitate timely, actionable data to identify fentanyl hot spots and coordinate rapid responses that could limit overdose mortality.

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Correction: This article was corrected on December 27, 2019, to correct Jolene DeFiore-Hyrmer's academic degree.

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SUPPLEMENT.

eAppendix. Model Specification and Results

EXHIBIT D

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Review

Effect of drug law enforcement on drug market violence: A systematic review

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ABSTRACT

Violence is amongst the primary concerns of communities around the world and research has demonstrated links between violence and the illicit drug trade, particularly in urban settings. Given the growing emphasis on evidence-based policy-making, and the ongoing severe drug market violence in Mexico and other settings, we conducted a systematic review to examine the impacts of drug law enforcement on drug market violence. We conducted a systematic review using Preferred Reporting Items for Systematic Reviews and Meta Analyses (PRISMA) guidelines. Specifically, we undertook a search of English language electronic databases (Academic Search Complete, PubMed, PsycINFO, EMBASE, Web of Science, Sociological Abstracts, Social Service Abstracts, PAIS International and Lexis-Nexis), the Internet (Google, Google Scholar), and article reference lists, from database inception to January 24, 2011. Overall, 15 studies were identified that evaluated the impact of drug law enforcement on drug market violence, including 11 (73%) longitudinal analyses using linear regression, 2 (13%) mathematical drug market models, and 2 (13%) qualitative studies. Fourteen (93%) studies reported an adverse impact of drug law enforcement on levels of violence. Ten of the 11 (91%) studies employing longitudinal qualitative analyses found a significant association between drug law enforcement and drug market violence. Our findings suggest that increasing drug law enforcement is unlikely to reduce drug market violence. Instead, the existing evidence base suggests that gun violence and high homicide rates may be an inevitable consequence of drug prohibition and that disrupting drug markets can paradoxically increase violence. In this context, and since drug prohibition has not meaningfully reduced drug supply, alternative regulatory models will be required if drug supply and drug market violence are to be meaningfully reduced.

Background

Violence is amongst the primary concerns of communities around the world, and the illegal drug trade has been identified as a key cause of violence, particularly in urban areas (Johnson, Golub, & Dunlap, 2000; Martin et al., 2009; Ousey & Lee, 2004; Romero-Daza, Weeks, & Singer, 2003). Whilst drug market violence has traditionally been framed as resulting from the effects of drugs on individual users (e.g., violence stemming from drug-induced psychosis), violence is increasingly being understood as a means used by individuals and groups to gain or maintain market share of the lucrative illicit drug trade (Blumstein, 1995; Brownstein, Crimmins, & Spunt, 2000; Donohue III & Levitt, 1998; Goldstein, Brownstein, Ryan, & Bellucci, 1989; Guerrero, 1998).

In a variety of settings, gangs or cartels that derive their primary financing from illicit drugs have been implicated in a substantial proportion of homicides (Agren, 2010; Castle, 2009; Decker, 2003; Hutson, Anglin, Kyriacou, Hart, & Spears, 1995). For instance, studies of drug gangs in Chicago have demonstrated that as much as 25% of gang activity involves violent assault and homicide (Levitt & Venkatesh, 2000), and in Vancouver, Canada, a leaked Royal Canadian Mounted Police report notes that a recent spike in gang-related homicides is the result of the expansion of drug gangs across the province of British Columbia (Rainbow, 2010). It is important to note, however, that data demonstrate that drug market violence may increase independent of street gangs, as reportedly occurred in Los Angeles in the 1990s (Klein, Maxson, & Cunningham, 1991). In some instances, responses to the illicit drug trade have contributed to increased militarization on the part of participating individuals and organizations, with a resulting increase in drug-related homicides. For instance, as a result of fighting between the Colom-

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bian military and drug cartels, in the year 1990 nearly 1 in 1000 Colombians was murdered, a rate three times that of Brazil and Mexico and ten times that of United States (Levitt & Rubio, 2005). More recently, Mexico has experienced extreme drug market violence and mortality subsequent to the 2006 launch of a massive nationwide counternarcotics campaign (Elsworth, 2006). In 2008 alone, 6,290 drug-related deaths were recorded in that country and to date over 28,000 individuals have been killed as a result of the Mexican drug war since 2006 (Agren, 2010; Associated Press, 2009).

Governments generally address increases in drug market violence with increases in funding for drug law enforcement interventions aimed at reducing the use and availability of illicit drugs. For the purposes of this review, drug law enforcement is defined as police-, military-, or force-based responses to illicit drugs that emphasize the imposition of criminal laws for drug use and drug-related crimes (i.e., possession, trafficking and production). Such interventions take the form of targeted crackdowns of known street drug markets (Aitken, Moore, Higgs, Kelsall, & Kerger, 2002; May & Hough, 2001), military interventions (Veillette, 2005), and legal sanctions against drug users, traffickers and producers (Drucker, 2002). These interventions increasingly resource policing efforts, and governments continue to prioritize drug law enforcement over preventive- or treatment-based responses to drug use and availability (Elovich & Drucker, 2008; Government of Canada, 2008; ONDCP, 2009; Roberts, Trace, & Klein, 2004). For example, in fiscal year 2010/11 the US government allocated approximately $10 billion USD in enforcement-based responses to drug use, including $178 million USD towards ongoing support for Plan Colombia, a military-based interdiction intervention in Colombia, and $177 million USD for the Merida Initiative, an enforcement-based assistance plan to help the Mexican government dismantle drug cartels (ONDCP, 2010). Despite the ongoing emphasis on policing as the primary means to reduce drug-related harms, however, little is known regarding the association between drug law enforcement and drug market violence. We therefore conducted a systematic review to examine the role that drug law enforcement interventions may play in reducing drug market violence. Given the widespread assumption that drug law enforcement interventions reduce drug market violence, our primary hypothesis was that the available scientific evidence would demonstrate an association between increased drug law enforcement expenditures or intensity and reduced levels of violence.

Methods

This review involved conventional systematic searching, data extraction and synthesis methods. Specifically, a comprehensive search of the literature was undertaken using electronic databases (Academic Search Complete, PubMed, PsycINFO, EMBASE, Web of Science, Sociological Abstracts, Social Science Abstracts, PAIS International and Lexis-Nexis), the Internet (Google, Google Scholar), and article reference lists. Search terms included "violence," "drug-related violence," "drug market violence," "homicide," "prohibition," "drug law enforcement," "enforcement," "drug crime," "gangs," "drug gangs," and "gun violence". The terms were searched as keywords and mapped to database specific subject headings/controlled vocabulary terms when available. Each database was searched from its inception to its most recent update as of January 24, 2011 for English language articles.

Inclusion/exclusion criteria

Studies published in peer-reviewed journals, abstracts from international conferences and reports from governments and non-governmental organizations that reported on a link between drug law enforcement, illicit drug interventions, and violence were all eligible for inclusion in the systematic review. Non-peer-reviewed sources were included in the search because preliminary searches suggested that data-driven literature on our search topic was limited and we therefore did not want to be overly conservative in our search. Editorials, advocacy articles, and studies of police violence (i.e., brutality) were excluded.

Data collection process

Two investigators conducted data extraction independently, in duplicate, using standardized techniques (D.W. and G.R.). Data abstractors collected information about the study design, sample size, methods of effectiveness measurement, and outcomes (i.e., drug market violence). The data were entered into an electronic database such that duplicate entries existed for each study; when the two entries did not match, consensus was reached through discussion.

Data items and summary measures

The primary outcome of interest for this review was any reported association between drug law enforcement and drug market violence. For the purposes of this review, drug market violence was defined as violence (i.e., homicides, assaults, and shootings) arising from the illicit drug market. Given the heterogeneity of the literature on drug law enforcement, in some instances proxy measures were used for both drug law enforcement (i.e., number of drug arrests, number of police officers, etc.) and drug market violence (i.e., homicide, shootings, etc.).

Data synthesis

To ensure scientific rigour, the Preferred Reporting of Systematic Reviews and Meta-Analyses (PRISMA) guidelines were used for systematic data synthesis (Moher, Liberati, Tetzlaff, & Altman, 2009). These guidelines are widely recognized as the gold standard in transparent reporting of systematic evaluations of scientific research questions.

Because studies included in this systematic review varied extensively regarding methodologies and outcomes, findings were summarized on a per-study basis and statistical data were entered into a standardized form. When reporting results from individual studies, the measures of association and *p*-values reported in the studies were cited. The heterogeneity in methodologies and outcomes also excluded the possibility of conducting a meta-analysis of the studies included in the systematic review.

Risk of bias across studies

A recent commentary noted that publication bias may have prevented the publication of a number of negative studies regarding the effectiveness of school-based anti-illicit drug interventions (McCambridge, 2007). Further, scientists have been critical of government health agencies that appear not to be receptive to funding grants that may be critical of current approaches to drug policy, particularly in the United States (Pearson, 2004). It is therefore possible that studies with null findings and those that observe significant associations between higher levels of drug enforcement and higher levels of violence may be underreported reported in the literature.

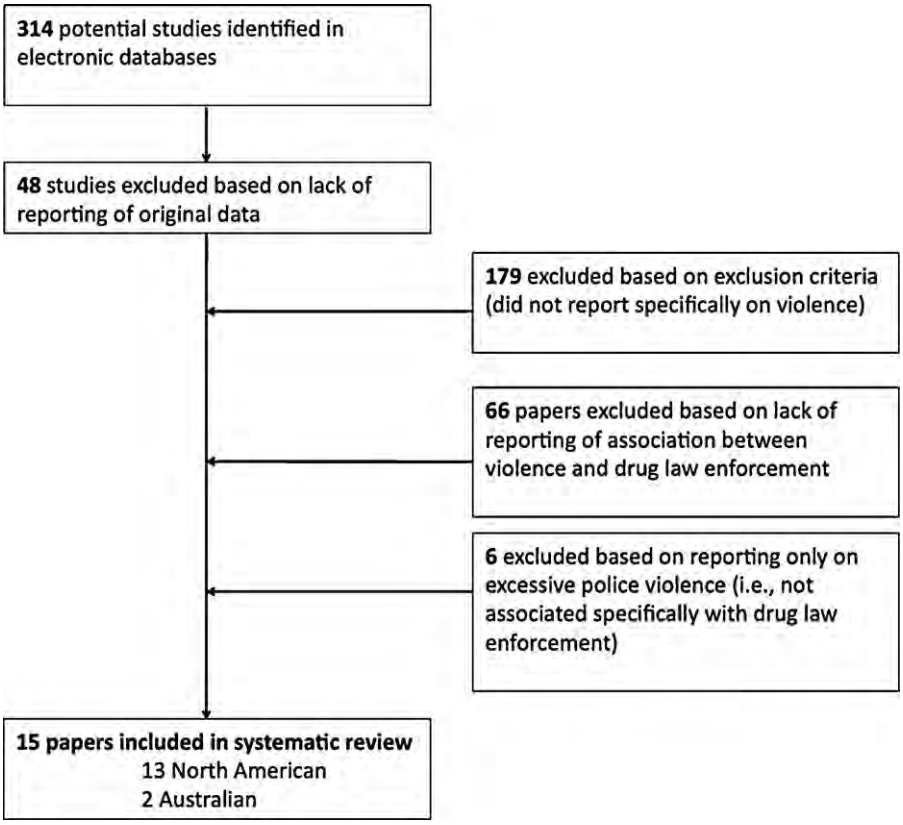

Fig. 1. Search process and eligible studies.

Results

Study selection and study characteristics

In the initial search, 314 potential articles were identified for inclusion in the review. Of these, 48 (15.3%) were excluded because they did not present new data (e.g., editorials). As such, 266 (84.7%) articles were retrieved for detailed examination after initial searching of keywords and abstracts. Of these, 248 (93.2%) were deemed non-relevant to the current review for the following reasons: 179 (67.3%) were excluded based on a lack of explicit mention of violence in the analysis, whilst 66 (24.8%) further studies were excluded based on a lack of reporting of drug law enforcement-related violence (i.e., they reported on levels of violence but did not report on the application of any drug law enforcement-based intervention). Finally, 6 (2.3%) papers were excluded because they reported on police violence (i.e., brutality) rather than violence associated with drug law enforcement, leaving 15 (5.6%) studies eligible for inclusion in the systematic review. The full extraction process is summarized in Fig. 1.

Overall, the 15 eligible studies included 13 (87%) studies from North America (Benson, Leburn, & Rasmussen, 2001; Benson & Rasmussen, 1998; Brumm & Cloninger, 1995; Burrus, 1999; Caulkins, Reuter, & Taylor, 2006; Goldstein et al., 1989; Levitt & Venkatesh, 2000; Miron, 1999, 2001; Rasmussen, Benson, & Sollars, 1993; Resignato, 2000; Riley, 1998; Shepard & Blackley, 2005), and 2 (13%) studies from Australia (Maher & Dixon, 1999, 2001). Thirteen (87%) used quantitative study designs and 2 (13%) used qualitative study designs. One study used a mixed method (i.e., quantitative and qualitative techniques) design. Of the 13 studies that employed quantitative techniques, 11 (85%) conducted regression analyses of real world data and 2 (15%) presented theoretical models of drug market dynamics. The individual studies are described in Table 1.

Results of individual studies

The 11 studies that conducted longitudinal quantitative analyses of empirical data included violence, violent crime, or homicide as a primary independent variable of interest, and used measures of drug law enforcement as dependent variables of interest. All studies were published in peer-reviewed academic journals. These studies used a variety of proxy variables to quantify drug law enforcement, drug arrests as a proportion of total arrests, police expenditure, number of police officers, and drug seizure rates. All 11 longitudinal quantitative analyses used sophisticated regression analyses in their investigation of the impact of drug law enforcement on drug market violence, and data analysed were of high quality. Contrary to our original hypothesis, in 10 (91%) of these studies that analysed empirical data, a significant association was observed between drug law enforcement and violence (Benson et al., 2001; Benson & Rasmussen, 1998; Goldstein et al., 1989; Levitt & Venkatesh, 2000; Miron, 1999, 2001; Rasmussen et al., 1993; Resignato, 2000; Riley & O'Hare, 1998; Shepard & Blackley, 2005). That is, studies found that an increase in drug law enforcement intensity was associated with an increase in drug market violence. Only 1 (9%) study reported no significant association between drug law enforcement and drug market violence (Brumm & Cloninger, 1995). The 2 mathematical models of drug market dynamics, which modelled the potential future impact of law enforcement, reached divergent conclusions: one concluded that increased law enforcement would decrease violence (Burrus, 1999), whilst the other concluded that increased law enforcement would increase violence (Caulkins et al., 2006).

Table 1
Eligible studies on violence and prohibition.

Author/year	Location	Total *N*	Study design	Study period	Main findings
Goldstein, 1989	New York City, US	414 homicide events	Longitudinal observational study	March 1, 1988–October 31, 1988	39% of all homicide events were 'systemic', i.e., a result of prohibition/enforcement effects.
Rasmussen, 1993	Florida, US	67 Florida counties	Longitudinal observational study	1989	The model presented suggests that increased drug enforcement will increase the size of a drug market in an adjoining jurisdiction, resulting in a higher violent crime rate.
Brumm, 1995	US	57 US cities	Longitudinal observational study	1985	No significant association between drug arrests and violence was observed.
Benson, 1998	Florida, US	67 Florida counties	Longitudinal observational study	1983–1987	Measures of drug law enforcement were significantly and positively associated with Index I crime (violent and property crime) in Florida, despite adjustment for confounders. Drug arrests were associated with an almost fivefold risk of violent and property crime (Drug arrest Relative Risk = 4.63, $p < 0.05$).
Riley, 1998	6 US cities	Not reported	Longitudinal observational study, qualitative	1995	Increased enforcement efforts against crack markets were associated with increased homicide rates in 4 cities and decreased homicide rates in 2 cities.
Burrus, 1999	NA	NA	Predictive model	NA	Theoretical model implies that law enforcement decreases territorial returns and the marginal benefit of violence decreases, and violence decreases.
Maher, 1999	Sydney, Australia	143	Qualitative	February 1995–February 1997	As dealers leave the market, those willing to work in a high-risk environment move in. Street dealing becomes more volatile and violent.
Miron, 1999	US	NA	Longitudinal observational study	1900–1995	Enforcement variables account for more than half of the variation in the homicide rate over the study period (R^2: .53).
Levitt, 2000	Chicago, US	Not reported	Longitudinal observational study	Four year period in the 1990s (anonymized for confidentiality)	Lack of formal dispute resolution mechanisms in illicit drug trade and drug law enforcement pressure caused a high level of violence amongst drug gang studied; as a result, violent conflict made up approximately 25% of gang activities during study period.
Resignato, 2000	United States	24 US cities	Longitudinal observational study	October 1992–September 1993	In 4 regression analyses, the drug enforcement proxy variable (ratio of drug arrests to total arrests), was positively and significantly associated with violence.
Benson, 2001	Florida, US	67 Florida counties	Longitudinal observational study	1994–1997	Increases in the rate of drug arrests were associated with a twofold risk of violent and property crime across counties Adjusted Relative Risk for change in drug arrests: 2.20 ($p < 0.01$).
Maher, 2001	Sydney, Australia	Not reported	Qualitative	1995–2001	Violent disputes associated with the drug market contributed to a number of murders and the substantial rise in non-fatal shootings with handguns in NSW in 1995–2000.
Miron, 2001	US	Not reported	Longitudinal observational study	1993–1996	In a regression analysis of the homicide rate, and using nine different drug seizure rates (prohibition proxy variables), 6 drug seizure rates were significantly and positively related to the homicide rate.
Shepard, 2005	New York State, US	62 counties	Longitudinal observational study	1996–2000	In regression analyses, drug arrests were not significantly negatively associated with crime (i.e., do not decrease crime). Increases in total per capita drug arrests are accompanied by higher rates of crime. Additionally, arrests for manufacture and sale of hard drugs is associated with higher levels of all crimes, including assault (Relative Risk for assault by hard drug arrest = 0.35, $p < 0.05$).
Caulkins, 2006	NA	NA	Predictive model	NA	Theoretical model implies that increasing the severity of penalties associated with dealing drugs raises the stakes for all dealers, especially for the marginal dealers, who are the most likely to be apprehended. The remaining dealers command a higher market price. If favourable positions are secured by use of violence, violence may increase.

The 2 qualitative studies included in this systematic review both reported on health harms amongst illicit drug users in an open air illicit drug market located in Sydney, Australia (Maher & Dixon, 1999, 2001). In these studies, the authors observed that, as dealers exit the illicit drug market, those willing to work in a high-risk environment enter, and that street dealing thereby becomes more volatile (Maher & Dixon, 1999). Further, the authors noted that the increased volatility associated with street dealing has resulted in a higher number of violent disputes, which have contributed to an increase in murders and non-fatal shootings amongst individuals involved in the illicit drug trade (Maher & Dixon, 2001).

Discussion

In this systematic review, all available English language studies that evaluated the association between drug law enforcement and violence were reviewed. Whilst the number of studies was limited, they included a diverse array of literature including longitudinal analyses involving up to 6 years of prospective follow-up, regression analyses, qualitative analyses, and mathematical predictive models. Contrary to our primary hypothesis, amongst studies that systematically evaluated this question using real world data, 91% found a significant association between levels of drug law enforcement and levels of drug market violence.

The present systematic review demonstrates that drug law enforcement interventions are unlikely to reduce drug market violence. Instead, and contrary to the conventional wisdom that increasing drug law enforcement will reduce violence, the existing scientific evidence base suggests that drug prohibition likely contributes to drug market violence and increased homicide rates and that increasingly sophisticated methods of disrupting illicit drug distribution networks may in turn increase levels of violence.

The association between increased drug law enforcement funding and increased drug market violence may seem paradoxical. However, in many of the studies reviewed here, experts delineated certain causative mechanisms that may explain this association. Specifically, research has shown that by removing key players from the lucrative illegal drug market, drug law enforcement has the perverse effect of creating new financial opportunities for other individuals to fill this vacuum by entering the market (Maher & Dixon, 1999; Rasmussen et al., 1993). Classic historical examples of this phenomenon are embodied in the steep increase in gun-related homicide that emerged under alcohol prohibition in the United States (Miron, 1999), and after the removal of Columbia's Cali and Medellin cartels in the 1990s (Levitt & Rubio, 2005). In this second instance, the destruction of the cartels' cocaine duopoly led to the emergence of a fractured network of smaller cocaine producing cartels that increasingly used violence to protect and increase their market share (Bagley, 2001). In this context, violence may be an inevitable consequence of drug prohibition when groups compete for massive profits without recourse to formal non-violent negotiation and dispute resolution mechanisms (Miron, 1999; Resignato, 2000). Additionally, 'target hardening', wherein vulnerable entities become increasingly militarized in the face of risk of attack (Newton, Rogerson, & Hirschfield, 2008), has occurred amongst drug organizations facing increased drug law enforcement. In particular, the escalating militarization of drug cartels in the face of government enforcement operations has been documented in Mexico, where the emergence of the Zetas, former Mexican special forces soldiers, as criminal players in the drug market has resulted in increased violence and homicides (Sullivan & Elkus, 2008). In terms of indirect effects of drug law enforcement, experts have noted that violence may exist in many forms, including structural (i.e., political and economic inequity) (Farmer, 2010), interpersonal (i.e., the normalization of 'everyday' violence) (Scheper-Hughes, 1996), and symbolic (the ideological or cultural oppression of one group of individuals) (Bourgois, 1998). Whilst fully exploring these forms of violence is beyond the scope of this review, they nevertheless represent pervasive sources of harm amongst drug dependent populations and in communities affected by drugs. Whilst all three forms of violence differ, they are all distally related to the application of drug law enforcement against drug users.

Whilst not a central focus of this review, prior reviews have concluded that, in addition to violence, drug prohibition has produced several other unintended consequences. One key concern driving the introduction of new players into the illicit drug market is the existence of a massive illicit market that has resulted in response to the prohibition of illicit drugs, estimated by the United Nations to be worth as much as US$320 billion annually (UNODC, 2005). These massive drug profits are entirely outside the control of governments and, based on the findings of the present review, likely fuel crime, violence, and corruption in countless urban communities. Further, these profits have destabilized entire countries across the world, such as Colombia, Mexico, and Afghanistan, and have contributed to serious instability in West Africa (Cornwell, 2008; Destrebecq & Leggett, 2007; Felbab-Brown, 2005; Morris, 2003). In North America, profits from the cannabis trade constitute a major source of potential corruption and instability. In British Columbia, Canada, the cannabis market was recently estimated to be worth approximately $7 billion Canadian dollars annually, and a ferocious gang war has recently been waged over the control of these profits (British Columbia Statistics, 2009; Castle, 2009). In the United States, cocaine is used at least annually by approximately 5.8 million people, and control of this market has long been characterized by gang violence (Blumstein, 1995; Goldstein et al., 1989; Johnson et al., 2000; UNODC, 2009). In southeast Asia, a burgeoning illicit methamphetamine trade is intimately tied to regional instability, where the minority Wa and Shan groups fund an insurgency against the Burmese military junta through manufacture and wholesale distribution of methamphetamine and opium to Thailand, China, and other neighbouring countries (Cornell, 2007). In West Africa, entire countries such as Guinea-Bissau are at risk of becoming 'narco-states', as Colombian cocaine traffickers employ West African trade routes to distribute cocaine into destination markets in Europe, Russia, and the Middle East (Destrebecq & Leggett, 2007). Estimates now suggest that 27% of all cocaine destined for Europe is transited through West Africa, and is worth over $1.8 billion USD annually wholesale and as much as ten times as much at the retail level (Destrebecq & Leggett, 2007).

In terms of additional unintended consequences, in the United States, mandatory minimum sentencing policies for drug offenders have resulted in a massive growth in the prison population and place an enormous burden on the US taxpayer (Harrigan, Study Group Members AMC, Reiss, & Lange, 2000; National Center on Addiction and Substance Abuse at Columbia University, 2001). Most notably, the incarceration of drug offenders in the United States has generated substantial racial disparities in incarceration rates (Caulkins, Rydell, Schwabe, & Chiesa, 1997; Gaskins, 2004; Mascharka, 2000; Meierhoefer, 1992). For instance, based on data from 2007, one in eight African-American males in the age group 25–29 is incarcerated on any given day in the US, despite the fact that ethnic minorities consume illicit drugs at comparable rates to other subpopulations in the US (Sabol & Couture, 2008).

Whilst increased drug market violence might be acceptable to the general public under the scenario whereby drug law enforcement substantially reduces the flow of illegal drugs, prior research has clearly demonstrated that law enforcement efforts have not achieved a meaningful reduction in drug supply or use in settings where demand remains high (Degenhardt et al., 2008). In the United States, despite annual federal drug law enforcement budgets of approximately $15 billion USD and higher since the

1990s, illegal drugs – including heroin, cocaine, and cannabis – have become cheaper and drug purity has increased, whilst rates of use have not markedly changed (Manski, Pepper, & Petrie, 2001; ONDCP, 2009; UNODC, 2008). In Russia, despite a strong emphasis on drug law enforcement, evidence suggests that illicit drug use is widespread (British Columbia Statistics, 2009). Specifically, recent United Nations estimates suggest that over 1.6 million Russians use illicit opiates annually, though experts caution that the true number of Russian illicit opiate users could be as high as 5 million (UNODC, 2009).

In the face of the strong evidence that drug law enforcement has failed to achieve its stated objectives of reducing the supply and use of illicit drugs, and considering that our review suggests that this approach likely contributes to increases in drug market violence (Miron, 1999; Resignato, 2000; UNODC, 2008), policy-makers must consider alternatives. Indeed, some experts have begun to call for the regulation of certain currently illegal drugs. In the United Kingdom, researchers recently released a report delineating potential regulatory models for currently illegal drugs (Rolles, 2009). In California, a recent fiscal deficit has prompted the State Board of Equalization to prepare estimates of the potential revenue from a regulated cannabis market (Rolles, 2009). The State Board estimated that annual revenues of approximately $1.4 billion USD could result from the imposition of a regulatory framework (Ingenito, 2009). Additionally, recent results from an evaluation of Portugal's drug decriminalization policy suggests that this approach may reduce both illicit drug use and its related harms (Greenwald, 2009). Portugal's drug control framework as well as that proposed by researchers in the UK both prioritize public health responses to drug users, resourcing efforts towards treatment (i.e., methadone maintenance therapy), harm reduction interventions (i.e., sterile syringe distribution and medically supervised injecting facilities), and the prevention of illicit drug use. In Portugal, where such a model has been implemented since 2001, data suggest that rates of drug use have not increased and levels of drug-related harm, including the transmission of HIV amongst drug users, have decreased significantly (Hughes & Stevens, 2007). However, it is of note that the decriminalization of illicit drugs may not significantly reduce levels of drug market violence given that production and trafficking of drugs would remain unregulated under such a model. Given the absence of legal dispute resolution mechanisms in the regulation of a decriminalized market, violence may remain high.

Limitations

This study has a number of limitations. First, because the majority of studies included in this systematic review were longitudinal observational studies, and because no randomized control trials were included in the review, it is important to note that we cannot assume causality for such a complex phenomenon as drug market violence. Second, publication bias may have skewed the availability of studies investigating the role of violence and drug law enforcement as a result of political sensitivities in organizations funding research on drug policy. Specifically, research funders have traditionally been unsympathetic to critical evaluations of the 'war on drugs' (Pearson, 2004; Saunders, 2007). However, it is noteworthy that the only paper to describe drug law enforcement having a positive effect on reducing drug market violence was based on a theoretical model (Burrus, 1999), and was inconsistent with the empirical evidence presented in the data-driven studies (Benson et al., 2001; Benson & Rasmussen, 1998; Brumm & Cloninger, 1995; Goldstein et al., 1989; Levitt & Venkatesh, 2000; Maher & Dixon, 1999; Maher & Dixon, 2001; Miron, 1999, 2001; Rasmussen et al., 1993; Resignato, 2000; Riley & O'Hare, 1998; Shepard & Blackley, 2005) and in the popular media (Agren, 2010; CBC, 2010). Third, we were limited by the lack of peer-reviewed published research on the effect of drug law enforcement on drug market violence, and were therefore restricted to a sample size of 15 studies. The fact that 13 (87%) of these studies were from North America also limits the generalizability of our findings to other settings. Fourth, because the analysis was restricted only to studies investigating the effect of drug law enforcement on drug market violence, studies that reported on levels of police violence against drug users were excluded. Finally, there are instances, such as the recent outbreak of violence in Mexico, where there is widespread agreement that law enforcement efforts sparked drug market clashes (Agren, 2010; Laski, 2009), but this has not been evaluated in a scientific study. As such, the association between drug law enforcement and drug market violence that we identified in the literature is most likely an underestimate.

Conclusions

Based on the available English language scientific evidence, the results of this systematic review suggest that an increase in drug law enforcement interventions to disrupt drug markets is unlikely to reduce drug market violence. Instead, from an evidence-based public policy perspective and based on several decades of available data, the existing scientific evidence suggests drug law enforcement contributes to gun violence and high homicide rates and that increasingly sophisticated methods of disrupting organizations involved in drug distribution could paradoxically increase violence. In this context, and since drug prohibition has not achieved its stated goals of reducing drug supply, alternative regulatory models for drug control will be required if drug market violence is to be substantially reduced.

Contributors

Evan Wood had full access to all the data in the study and had final responsibility for the decision to submit for publication. DW and GR conducted the systematic search. DW and EW drafted the manuscript. GG and TK revised the systematic review and meta-analysis methodology. TK, JM and GG revised the manuscript substantially. All authors have seen and approved the final version.

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Conflict of interest statement

Dan Werb, Greg Rowell, Gordon Guyatt, Thomas Kerr and Evan Wood have no competing interests to declare. Julio Montaner has received grants from, served as an ad hoc adviser to, or spoken at events sponsored by Abbott, Argos Therapeutics, Bioject Inc., Boehringer Ingelheim, BMS, Gilead Sciences, GlaxoSmithKline, Hoffmann-La Roche, Janssen-Ortho, Merck Frosst, Panacos, Pfizer

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EXHIBIT E

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Research Paper

The protective effect of trusted dealers against opioid overdose in the U.S.

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ABSTRACT

Background: Opioid overdose has become the leading cause of death among adults between 25 and 54 years old in the U.S. The purpose of this study is to explore the social and relational factors that shape the current opioid overdose epidemic.

Methods: Between January 2016 and February 2017, adults in Providence, Rhode Island, who use opioids were recruited to complete structured survey and semi-structured interview about the social context of their substance use.

Results: A total of 92 individuals completed a survey and an interview. Of those, 51 individuals (68.6% male, 49.0% white) discussed their relationships with drug suppliers in their interview and were included in this sub-study. Many of these participants indicated that long-term relationships with trusted dealers represent a key strategy for reducing the risk of substance use-related harm due to suppliers' alleged adoption of consumer protection strategies (e.g. refusing to sell fentanyl) and quality assurance measures (e.g. testing batches of drugs for fentanyl prior to sale).

Conclusion: Interpersonal relationships between individuals who use drugs and their suppliers strongly influence the risk and protective factors experienced by people who use drugs in today's opioid overdose epidemic. Evidence-based prevention strategies that are based on an awareness of—or even designed to harness—those positive and/or protective relationships that people who use drugs have already constructed for themselves are likely merited.

Introduction

Eric (a pseudonym) is a low-level heroin dealer. He buys the drug in batches from other suppliers higher up the illicit market's proverbial food chain and then repackages that supply to sell to his customers. One day, not long ago, Eric came home to see a news story on a local television station about an overdose victim found and resuscitated in a public parking lot nearby. The newscast reported that fentanyl, a powerful synthetic opioid, was present in the drugs this individual had used and was likely the cause of their overdose. Eric was shocked to recognize the overdose victim on the news as one of his own clients. This is how Eric learned that the heroin he was currently selling was adulterated with fentanyl.

Our research team heard this story by way of one of Eric's regular clients, a middle-aged white woman named Sandy (also a pseudonym). She spoke in detail about the conversation she had with Eric when he called her to warn her about what he saw on the news. He recommended she throw away the drugs she had just bought from him in light of this newly discovered fentanyl contamination. Allegedly, Eric even offered to replace the drugs they threw out with a new batch of (ostensibly fentanyl-free) heroin at a discounted price. "I know it sounds crazy to you guys," Sandy said in our interview, "but some of them [dealers] actually care if they serve you that [fentanyl]. They don't want you dead. They need you for that money. And they don't want you dead. So, there are some dealers that actually care."

The axiom that "epidemics are fundamentally social processes" (Maher, 2002) has been foundational to social medicine and, later, critical medical anthropology since this view was broadly promoted by physician-anthropologist Rudolph Virchow in the 19th century. "Medicine," he wrote in his 1848 administrative report on an infectious disease outbreak in the desperately oppressed region of Upper Silesia, "has imperceptibly led us into the social field and placed us in a

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position of confronting the great issues of our time." (Virchow, 2006). Following this insight, research into the social-epidemiological dynamics of opioid overdose throughout the world have paid close attention to structural and individual-behavioral drivers of negative health outcomes (Butt et al., 2017; Culbert et al., 2016; Fornili, 2018; Gilbert et al., 2013; Heimer, 2018; Perlman & Jordan, 2018). Further, the ability of social relationships and social network dynamics to shape health outcomes on a population-level has been well established by recent research on sexually-transmitted HIV (Brennan et al., 2012; Teixeira da Silva et al., 2019; Valenzuela-Jiménez, Manrique-Hernández & Idrovo, 2017). Research exploring the impact of social and relational factors on overdose, however, remains sparser.

In the past few years, a growing number of mixed-methods research studies have successfully contextualized different features of the U.S.' current opioid overdose epidemic within the social environments that engendered them. Many have explored individual or micro-level factors, including risk-reduction strategies developed by people who use drugs to cope with the falling availability of prescription opioids in the drug market (Mars, Bourgois, Karandinos, Montero & Ciccarone, 2014) and the potential harms of unintentional fentanyl-exposure (Carroll, Marshall, Rich & Green, 2017; Rhodes et al., 2019). Recent studies have also investigated the structural, or macro-level, factors that shape the overdose risk environment, demonstrating how the risk of fentanyl exposure may vary according to the kind of heroin products—or products presented to consumers as heroin or as heroin-like (Ciccarone, Ondocsin & Mars, 2017)—that are locally available, the marketing methods used to sell those products, and the amount of product information made available to consumers through local market structures (Mars et al., 2015, 2016).

Little research on the current, fentanyl-fueled opioid overdose epidemic, however, has explored in-depth the role of socio-relational factors, such as the nature of the relationship between Eric and Sandy and the sense of mutual obligation they feel towards each other, in shaping the health outcomes of people who use drugs. Early substance use research in the U.S. has posed these vital questions about the social terrain of substance use and its related harms that remain highly relevant today (Bourgois, Prince & Moss, 2004; Singer, Valentín, Baer & Jia, 1992; Spradley, 1968). To the best of our knowledge, however, only two studies conducted during the current epidemic have explicitly analyzed the role of socio-relational factors in shaping health outcomes. The most recent of these, which was conducted among a predominantly African-American cohort of people who use drugs in urban North Carolina, produced two important findings: (1) relying on trusted or familiar dealers was as a commonly reported fentanyl-avoidance strategy used by individuals who preferred not to consume fentanyl-adulterated drugs and (2) participants reported encountering fentanyl-adulterated heroin—despite not seeking fentanyl—when they were unable to purchase drugs from dealers whom they knew and trusted (Rhodes et al., 2019). Additionally, an earlier study conducted among a predominantly white cohort of people who use drugs in Providence, Rhode Island, found that some participants described their overdose risk as directly increased or directly decreased as a result of actions allegedly taken by their dealers, suggesting that the nature of consumer-supplier relationships may differentially impact overdose risk in the illicit drug market (Carroll et al., 2017).

The purpose of this study is to elaborate and build upon these previously generated hypotheses. We aim to explore the social and relational factors that shape the current opioid overdose epidemic within a population of people who use drugs in Providence, Rhode Island. Specifically, we aim to describe the interpersonal relationships between people who use drugs and the individuals who act as their drug suppliers (whether regularly or irregularly) in order to consider how these social ties and the culturally-reinforced mutual obligations between them shape overdose risk. Put another way, this study asks how we can make sense of people like Eric, the heroin dealer who warned his clients about fentanyl contamination in his drugs, and the potential public health impact of the relationship he has built with Sandy by considering these supplier-consumer relationships through an ethnographic lens. Further, how might national-, state-, and community-level responses to today's opioid-overdose epidemic be improved if we are able to trace the role that he and others like him have in shaping patterns of overdose among participants in the illicit drug market?

Background

The illicit opioid market in the U.S. has undergone several transformations in recent decades. The history of current trends ostensibly begins in the early 1990s, when Colombian-sourced heroin—remarkably cheaper and purer than heroin originating elsewhere—began appearing in the U.S. drug market (Ciccarone, Unick & Kraus, 2009). Closely on the heels of the growing market share held by Colombian-sourced heroin came another significant trend: a massive growth in opioid prescribing in the U.S. health care system, including an increase in the retail sales of oxycodone (brand names include Percocet, Percodan, and OxyContin) of nearly 600% between 1997 and 2005 (Manchikanti, 2007). Many people who used opioids at that time did not use diverted prescription opioids exclusively. A large study of substance use trends in New York City in 2008 found that about 1 in 5 individuals who had recently used diverted prescription opioids also reported snorting heroin and about 1 in 5 had reported injecting heroin in the past year (Davis & Johnson, 2008). Nevertheless, rates of fatal overdose involving prescription opioids tripled over the same time period (Compton, Jones & Baldwin, 2016).

In 2010, the FDA approved a new, abuse-deterrent formulation of OxyContin, which "[was] intended to prevent the opioid medication from being cut, broken, chewed, crushed, or dissolved to release more medication" (U.S. Food & Drug Adminisration, 2010). In essence, this meant that commercially manufactured OxyContin, then an extremely popular product in the U.S. illicit/diverted drug market, could no longer be readily prepared or processed for snorting or injecting. Heroin—cheaper, purer, and more prevalent than it had ever been thanks to the glut of Colombian-sourced product—quickly became the substitute for many who could no longer access OxyContin. By 2012, ethnographic research conducted in several U.S. urban centers identified a sizeable cohort of (often, but not always) younger people who inject opioids who had initiated drug injection with diverted prescription opioids (like OxyContin) but then transitioned to heroin injection when the availability of early formulation OxyContin dropped and its street price increased (Cicero, Ellis & Surratt, 2012; Mars et al., 2014). Retrospective studies of nation-wide health data have directly linked the OxyContin reformulation to higher rates of hepatitis c (Powell, Alpert & Pacula, 2019) and opioid overdose (Evan & Lieber, 2018), indicating that this transition from OxyContin to heroin was widespread. Between 2010 and 2012, heroin overdose deaths doubled in 28 U.S. states (Rudd, Aleshire, Zibbell & Gladden, 2016).

In 2013, the State Health Laboratory and the State Medical Examiner of Rhode Island—where the study presented in this paper was conducted—reported a series of unusual deaths to the U.S. Centers for Disease Control and Prevention (CDC). Ten decedents who had experienced a fatal overdose tested positive for the synthetic opioid acetyl fentanyl in postmortem toxicology screening (U.S. Centers for Disease Control & Prevention, 2013). This was the first time that a fentanyl analog not commercially available (i.e. not prescription fentanyl) was identified in a cluster of fatal overdoses. Similar fentanyl-associated fatalities continued to appear in Rhode Island into the next year (Mercado-Crespo, Sumner, Spelke, Sugerman & Stanley, 2014). Fentanyl-related fatalities began to appear in neighboring Massachusetts in 2014 (Somerville et al., 2017), and, by 2016, were observed across the eastern and central regions of the U.S. (O'Donnell, 2017; Peterson et al., 2016). The prevalence of fentanyl in the illicit market—by now well established as a supply-side response to shifts in the heroin market rather than a result of consumer demand (Mars, Rosenblum &

Ciccarone, 2018)—has since continued to spread across the U.S., fundamentally changing the shape of the illicit drug market and the opioid overdose epidemic. By 2017, 47,600 opioid overdose deaths were identified in the U.S., more than 28,000 of which involved synthetic opioids like fentanyl (U.S. Centers for Disease Control & Prevention, 2019a, 2019b).

In the age of fentanyl, navigating product uncertainty in the illicit opioid market in Rhode Island—as elsewhere—presents many challenges. The gradual saturation of fentanyl into the New England drug market brought with it a sudden proliferation of visually and chemically varied "heroin" products that, according to consumers, presented with an assortment of atypical colors, textures, smells, and phenomenological effects (Carroll et al., 2017; Ciccarone et al., 2017). In Rhode Island, specifically, individuals who use opioids have reported adopting a variety of pseudo-strategies for detecting and avoiding fentanyl-contaminated drugs (checking for taste, smell, color when cooked in solution, etc.) as well as harm reduction strategies for reducing overdose risk (such as using a smaller quantity of drugs or consuming drugs more slowly) when the purity and potency of the drug is unknown, but these strategies are not always reliable (Carroll et al., 2017; Rouhani, Park, Morales, Green & Sherman, 2019). While it may have once been the case that adding inert or neutral cut to illicit opioid products (and thereby decreasing their potency) was neither universal nor systematic in the 1990s (Coomber, 1999), broad consensus has emerged in the age of fentanyl that products are frequently adulterated—either with neutral cutting agents, or with powerful synthetic opioids, or both—at unknown stages in the supply chain (Ciccarone et al., 2017; Mars, Ondocsin & Ciccarone, 2018). In Rhode Island, as elsewhere, the high prevalence of social supply (drugs brought and sold among close contacts with little or no regard to profit motive) in the local market obscures the presence and origin of fentanyl as "cut" even further, as both consumers and low level suppliers (including social suppliers) are an additional step removed from the adulteration process and the supply chains in which that adulteration takes place.

It is well established that product source, product purity, and the relative openness or closedness of a local drug market varies geographically between—and sometimes within—different parts of the U.S. (Mars et al., 2018; Mars, Bourgois, Karandinos, Montero & Ciccarone, 2016; Rosenblum et al., 2014). This variability, in turn, shapes the local risk environment for overdose (Mars et al., 2015) as well as the kinds of trust that may be established between supplier and consumer within a particular market (Carroll et al., 2017; Mars et al., 2018; Rhodes et al., 2019). Though trust in one's supplier has been reported as a reason for disinterest in drug checking technology—such as fentanyl test strips—(Bardwell, Boyd, Arredondo, McNeil & Kerr, 2019), high levels of reported trust in local suppliers has not dampened enthusiasm for drug checking tools in Rhode Island (Goldman et al., 2019; Krieger et al., 2018). These strips only became widely available to individuals who use drugs in Rhode Island in 2018 (Miller, 2018), more than a year after this present study was completed. Thus, participants in this study were limited in their ability to identify fentanyl in the local drug supply through the use of fentanyl test strips, reliant on their own physical senses and the information that passed between consumers and, occasionally, their suppliers, to make consumer choices—choices that were, at best, only partially informed.

Methods

Recruitment

Subject recruitment for this study has been described in detail elsewhere (Carroll et al., 2017). In brief, individuals who were at least 18 years of age, resided in Rhode Island, and had engaged in the use of an illicit opioid or diverted prescription opioid in the previous 30 days (by self-report) at the time of recruitment were eligible to participate. Recruitment took place between January 2016 and February 2017 at harm reduction programs, emergency departments, and other community-based organizations targeting at-risk populations throughout the city of Providence, Rhode Island.

Data collection

Participants in this study consented to an anonymous survey and a semi-structured interview [with J.C.]. The anonymous survey was designed to collect demographic information, substance use behaviors, treatment history, past experience with overdose, and suspected exposure to fentanyl in the past year. Interviews were designed to explore participants' experiences, as reported on the survey, and identify participants' insights about why those experiences (such as overdose, arrest, or suspected fentanyl exposure) occurred as they did. The interview format was intentionally developed to be flexible; the interviewer could diverge from the semi-structured questions to discuss new or unanticipated topics brought into the conversation by the participant, and new topics broached by participants could be used to inform the nature of open-ended questions in future interviews. All participants were offered $20 compensation for completing the survey and the interview.

Analysis

Descriptive statistics were generated from survey data to describe the study population. Interview recordings were transcribed and subsequently analyzed [by J.C.] contemporaneously with ongoing data collection using a modified version of grounded analysis for generating social theory (Glaser & Strauss, 1967). Also described in detail elsewhere (Carroll et al., 2017), this mode of analysis consists of actively reading and free-coding transcripts of completed interviews while new interviews are still being conducted. Conducting data collection and analysis simultaneously allows for the generation, testing, and refinement of hypotheses in the field.

The significance of the risk or protection that drug suppliers may confer upon their clients in shaping vulnerability to overdose was a hypothesis generated mid-way through the data-collection process. As a result, study participants who were recruited, consented, and interviewed *after* the generation of this hypothesis were explicitly prompted to discuss their relationship with various drug suppliers. Participants recruited and interviewed *prior* to the generation of this hypothesis, by contrast, were not given such prompts, as their relevance was not yet recognized by the study team. A post-hoc review of pre-hypothesis interviews revealed that some participants did discuss their drug suppliers and how their relationships with those suppliers impacted their risk of harm despite not being explicitly prompted to do so; others, however, did not.

Once data collection had concluded, all transcripts were re-evaluated and central findings discussed for merit by all members of the study team [J.C., J.R., and T.G.]. Core concepts were further explored through recursive coding exercises within those thematic concepts [by J.C.]. The findings presented here were isolated in these final stages of analysis.

Human subjects approval

This research protocol and all amendments to that protocol made throughout the study period were approved by the Institutional Review Board at the Miriam Hospital in Providence, Rhode Island.

Results

A total of 92 individuals completed a survey and an interview for this study. Of those, 33 (35.9%) identified as female and 41 (44.6%) identified with a racial or ethnic group other than white. The majority of participants (n = 78, 84.8%) reported regular (at least weekly) non-

medical use of an opioid of some kind. A small minority of participants (n = 9, 9.8%) reported using opioids less than weekly. The majority (n = 55, 59.8%) reported regular (at least weekly) use of heroin, specifically. The remaining minority reported regular non-medical use of prescription opioids (n = 12, 13.0%), or use of both heroin and prescription opioids on a regular basis (n = 11, 12.0%). The remaining 14 participants either reported intermittent use or were missing this data on the frequency of opioid consumption on their survey form. No significant differences in preference for heroin or prescription opioids were found between male- and female-identifying participants or between white and non-white participants.

A subset of 51 individuals (55.4% of the full study population) discussed their relationships with drug suppliers in their interview and, thus, were included in the qualitative data analysis presented here. Among that subset, the proportion of male-identifying participants who are non-white is nearly identical to that in the full study population (n = 13, 37.1% and n = 21, 35.6%, respectively). Among female-identified participants, however, individuals who discussed consumer–supplier relationships were almost exclusively white (n = 13, 81.3%); race data is missing for 2 female-identifying participants, and the remaining female participant identified her racial group as "other," indicating that she preferred to be designated as "Italian." (see Table 1). Though many participants reported having social and/or commercial connections to multiple dealers, all but one participant in this subset (n = 50, 98%) reported using a single, "primary" dealer from whom they prefer to procure opioids the majority (if not all) of the time.

First encounters with primary dealers

About half of the participants in this study reported meeting their primary dealer through mutual participation in the drug economy. A Puerto Rican man in his early 30s described meeting his primary dealer of the past 5 months in this way: "Yea, I met him on the streets and started buying some stuff. Then he gave me his number and ever since, I've been calling him." Others reported meeting their primary dealer through other clients or through low-level "runners" who sell and deliver drugs on behalf of someone else. The following description from a 40-something white woman who lived in a Providence suburb is typical of this pattern:

> Respondent: Like I mean because first we had someone that had to, it was like the middle man, he had to call them. And then finally we got their number. I mean at least for a year. Now it's probably like a year and a half.
> Interviewer: And so, this doesn't sound like this original person you bought from—this wasn't someone that you knew prior to starting that, like, client-retailer relationship.
> Respondent: No. It was like someone else got it from that person. And then we got the number so we could call it ourselves and wouldn't have to deal with [the middle man] anymore.

Though this process of relationship development was described by other participants, few were as specific as the above participant about the length of time required to develop that mutual trust. Thus, it is hard to know if this experience is typical in that sense.

Some participants reported multiple axes of social intimacy with their primary dealers, regardless of how they and that primary dealer first met. According to a different Puerto Rican man in his 30s who regularly uses heroin, he and his dealer have known each other "for a lot of years." He said, "I go to his house sometimes when he's got a party or something. I go to his house, you know, with his family, they know my family and everything." Many others described friendships dating back to their childhoods. One young white man in his early 20s used kinship terms to describe such individuals from whom he regularly sourced illicit and prescription opioids: "Yeah, [I knew them] before I started doing heroin and what not. They're pretty much my friends. One of them is my best friend, like my brother."

Dealers' concern for product safety

Several participants reported that their dealer was indifferent to the presence of fentanyl in the drug supply they were selling or were likely to outright lie about its presence. An African-American man in his 60s who has been a daily heroin user for several decades offered the most pessimistic view:

> Interviewer: Is this something that you've ever talked about with the people that you buy it from?
> Respondent: Yeah, a couple people, they'll tell you that. A lot of people like to say that they don't have [fentanyl] in there. And you can't go with what they say because they'll sell rat poison if they think you'll buy it anyway. They won't tell you anything. They'll tell you the drug is the bomb when it's garbage.

However, the large majority of participants spoke about their primary dealers going out of their way to alert clients to the presence of fentanyl or even to avoid selling fentanyl-contaminated product completely. Some reported, just as Sandy did (described in the introduction), that their dealer explicitly refuses to sell fentanyl and would never knowingly do so. One man in his mid-50s insisted, confidently, that this was the case with his primary dealer:

> Interviewer: Does your guy deal to other people? Like does he have some type of business?
> Respondent: No, he only does this once a while. He just deals to me and maybe two or three other guys.
> Interviewer: Have you ever had an opportunity to talk to him about fentanyl and dope and the quality of the products you…
> Respondent: Yeah.
> Interviewer: What does he have to say?
> Respondent: If there is fentanyl, he will throw the batch away.

This individual could offer no first-hand knowledge of how their primary dealer gained such detailed knowledge about the chemical

Table 1
Participant demographics (Providence, Rhode Island).

Female participants	Discussed dealer[a] (n = 51) n (%)	Full cohort (n = 92) n (%)
White	13 (81)	19 (58)
African–American	0 (0)	1 (3)
Nat. Hawaiian or Pac. Islander	0 (0)	2 (6)
Native/Indigenous Amer.	0 (0)	1 (3)
Asian–American	0 (0)	0 (0)
Other	1 (6)	3 (9)
Missing	2 (13)	7 (21)
TOTAL	**16 (100)**	**33 (100)**
Male participants	***n* (%)**	***n* (%)**
White	12 (34)	22 (37)
African–American	4 (11)	6 (11)
Nat. Hawaiian or Pac. Islander	4 (11)	6 (11)
Native/Indigenous Amer.	1 (3)	2 (3)
Asian–American	0 (0)	1 (2)
Other	4 (11)	6 (11)
Missing	10 (29)	16 (27)
TOTAL	**35 (100)**	**59 (100)**

[a] Participants who "discussed [their] dealer are those who spoke explicitly about their relationship with the individual(s) from whom they purchase drugs during their interview. This includes (a) participants who were directly asked to describe their relationship with their dealer following the generation of this hypotheses and (b) those participants who organically spoke about their dealers without being prompted to do so prior to hypothesis generation. (See study methods for more detail).

content of their drug supply, yet reported a high level of certainty that this work was, somehow, someway, being done on his behalf.

Other participants who reported their primary dealer will not knowingly sell fentanyl also stated explicitly that their dealer employs a reliable method of some kind for detecting fentanyl in their supply. One participant implied that his dealer "tasted" the product before selling it and determined its potency in this way, and another reported being the recipient of "freebies" that were explicitly given to her for the purpose of "tasting" new product on behalf of a dealer. Aside from these instances, though, no participants were able to describe or identify any concrete mechanism to detect the presence or absence of fentanyl employed by their dealers. As one white man in his early 20s described his awareness of his dealer's "screening" activities as follows:

> Interviewer: So you're under the impression that he actually tests his heroin?
> Respondent: I know he does.
> Interviewer: You've seen him do it?
> Respondent: Yeah. I know he does it, but I don't know the chemical. He never told me what it is.
> Interviewer: What do you think he would do if a batch ever turned up as fentanyl?
> Respondent: I don't know. [Laughs]
> Interviewer: He hasn't had to deal with that yet?
> Respondent: He won't, because these guys [know] what he does. And he knows what they do.

In contrast, most participants simply relied on faith, buttressing that faith with circumstantial evidence that they found significant. For example, an Hispanic man in his early 40s reported buying heroin from an individual who, he claims, was high enough in the drug supply chain to control the quality of their product:

> [My primary dealers] stay away from that….When you get a certain amount of quantity, you know what you're getting. It's not like you're getting shit that's already worked with. When you're getting a certain amount of quantity, it comes wrapped up a certain way. You know that what you're getting is the real thing.

Finally, some additional participants who did not explicitly state that their dealer refuses to sell or tests their drug supply for fentanyl still described buying from their primary dealer as a deliberate fentanyl avoidance strategy: "I have one connect that I go through, and he don't mess with it. So I just stay with him."

"It's not as safe to go to the number 2 guy."

Though a few participants said that they would only buy heroin from one person—insisting that they would rather abstain than buy from someone else less trusted—most reported having several contacts available, which they would activate if their primary supplier had no product or was for some reason unreachable. In Sandy's view,

> You can't have [just] 1 guy. You need 3 guys. One guy, you know, he's got this baby mama screaming at him. One guy's in court. The other guy's probably shopping–….so that's how we get to our second or third choice. But there is like a threshold at which point you're like: good person number 1, good person number 2, good person number 3, and screw all these [other] people.

The drawback, almost universally described, of calling up the "number 2 guy" was a potentially riskier encounter with less-familiar product. This was illustrated by a recent experience recounted by a white man in his 20s:

> Respondent: I almost overdosed. I kind of had to be smacked around a little bit and woken up, but the kid that I was running with likes [fentanyl]. He lied to me and told me it's not that. Then when I go and do it, you know, I pass out and not realize what's going on.
> Interviewer: Was this a situation where he was sharing his batch?
> Respondent: Yeah. Well, I couldn't get it from my boy. So he'd get it. I give him the money and be like, "Yo, make sure it's not fentanyl." And he wants to get that because the other stuff doesn't do it for him. So he'd lie to me, and then I'd go and do it. Then next thing you know, I'm almost overdosing.

This kind of duplicity, while always a risk, wasn't described as typical, however. Most described the problems that arise from buying from a "number 2 guy" as one rooted in a mutual lack of trust and familiarity, not in the other person's dishonesty. A white man in his 30s described the situation as follows:

> No, it's just like, "I can get you a half gram," or "I have shit, call me." You know that kind of shit? You never met him, you never did nothing with him, but you have a number in your phone, nobody else is answering, you're sick, you call him, now you have no opiates and you're sick. You try to do a bag and fucking next thing you know you're waking up in a hospital. You know, a lot of stuff can happen, you know?

As he and others described, when buying from a less familiar dealer, the drugs one acquires may have passed through a different set of hands on its way down to the consumer. The end product being sold may be different enough in purity or chemical composition to precipitate an overdose if a buyer consumes what they perceive to be a "typical" amount of the drugs they are used to purchasing from their primary dealer.

This point was made quite explicitly by a white man in his 60s who was recruited for this study while in a hospital only a few hours after he experienced an accidental opioid overdose. Reflecting on the incidents of the day, he recounted calling his "number 2 guy" for heroin that morning—and described why he would have preferred not to.

> Respondent: I do have a number 1 guy [dealer], yeah.
> Interviewer: And about how much of the time does he get your business?
> Respondent: He gets my business like 90% of the time. I have another alternative that I use. And my number 1 guy wasn't available today so I went to my number 2 guy, which is probably not as safe.
> Interviewer: What makes you say that?
> Respondent: It's not as safe to go to the number 2 guy. The number 1 guy is a lot safer to deal with.
> Interviewer: And what makes you say that?
> Respondent: He could basically assure me that there's no fentanyl in his product. And I've been dealing with him for five years and I've never had a problem. This number 2 guy I have only known a couple of months and now I've already had a problem with his product. And I wouldn't in the least bit doubt it if the product did have fentanyl in it. Because using the small quantity that I used and to overdose on it, it probably was cut with fentanyl, which caused me to overdose.

Relatedly, eight individuals from the full cohort of 92 who participated in an interview for this study were recruited from the emergency department of a local hospital after experiencing a non-fatal opioid overdose, including the man quoted above. Half of those reported being intermittent users, typically having very limited exposure to opioids. They all attributed their overdose to poor decision making that led to their uncharacteristic use of opioids in that event. The other overdose survivors interviewed in the hospital emergency department reported using heroin regularly. When asked what about this day was different from all other days, all of these individuals reported obtaining heroin from a less familiar source—either because they were given unfamiliar heroin by someone else or because their primary supplier could not be located, prompting them to call their "number 2 guy."

Mutual care

Relatively few women in this study reported having socially intimate, trusting relationships with their primary dealers. Yet, those who did spoke at length about the ethos of mutual care that developed out of what began as the most impersonal business relationships. Sandy described her connection with Eric—and with some of the other trusted individuals from whom she buys heroin—as some of the most familiar and trusting relationships in her life.

> I was just with [Eric] the other day, and I said, "Yo, how's your stuff," and I said, "I don't want to buy [fentanyl] from you." And he's like, "[Sandy], everybody's got fentanyl, and I don't want to buy it." So, he's not even picking it up… He's like, "I'm not going to serve people that." So, there's actually dealers that care. I know you guys don't think they care; they actually care. I mean, some of these guys we've been with for years. You know, they're family. We know where they live. You know, we got to that level. [My partner] and I are different. We're good girls. They know our lives. We get to know them. And a different level. When you see this person sometimes three times a day, you become friends with them. You can't help it. You know, you're in their life. You talk to your dealers more than your parents.

Sandy's spouse, with whom she uses heroin almost daily, echoed this sentiment, claiming that Eric regularly looks after them in more ways than simply refusing to sell fentanyl:

> Interviewer: Do you trust this person [Eric]?
> Respondent: Oh, yeah.
> Interviewer: What makes you trust him so much?
> Respondent: Because I know he's not out to kill people. He's not out to like, "all right, let me cut this with fentanyl." He won't even cut it like to stretch it to make extra money. You know what I mean? He's not even that type to do it like that. He's just very - even like after I meet him he'll call like a couple minutes later. Are you safe? Are you all right?
> Interviewer: He'll check up on you afterward?
> Respondent: Check everybody out. Make sure that we got back to the car. Make sure no cops are around, like snooping around, stuff like that. Like he's just not out to do any harm to anybody. And then my other guy, like if he's not around certain times, so my other guy, like I trust him as far as safety wise too. I do trust him with the material too because it's the same thing. He's not out to get people - like he wouldn't want to kill his customers. Many times we'll say come on, get the fentanyl, get the stuff with the fentanyl, they won't do it.

Another white woman, in her late 20s, claimed that her dealer would sometimes sell heroin that contained fentanyl, but reported that this person could be counted on to be honest about whether fentanyl was present in any given batch. More than this, though, she reported that her dealer had come to her to obtain the overdose-reversing drug naloxone. She said that he, knowing that she had been trained to reverse overdoses and had received a naloxone rescue kit from a local syringe services program, called her one night to assist with an overdose he was witnessing:

> Respondent: I guess he didn't really have a habit, and he did a little bit, and he went out. And the kid, my dealer called me saying that he went out and I could hear him gasping. So I ran there and he couldn't find the Narcan that I gave him. Excuse me. So I ran all the way back to [the apartment where I live], got it, we hit him with it, and then he didn't come through and then 15 minutes later again we hit him again. And then I rubbed his chest and he came through…
> Interviewer: …And the person that you buy from was, I just want to make sure I heard you correctly. So like you were doing whatever you were doing—
> Respondent: —And he called me.
> Interviewer: And your dealer was with this person [who overdosed].
> Respondent: Uh-huh.
> Interviewer: Was the person who overdosed someone you already knew? Were you kind of like –
> Respondent: No, I didn't know him at all.
> Interviewer: So why did your dealer call you?
> Respondent: Because the night before that, I had just taught him how to use Narcan.
> Interviewer: You trained your dealer how to use Narcan?
> Respondent: Uh-huh…I had given it to him the night before and he couldn't find it because he put it in his trunk. And instead of going looking for that, I had him bring me right to [my apartment], because I knew I could get it there. So –
> Interviewer: And so was the person in overdose transported to [your apartment] or were they already at [your apartment]?
> Respondent: No, he was at the dealer's house.
> Interviewer: He was at the dealer's house also. Then you went to [your apartment], then the dealer's house…
> Respondent: …He really, yeah, and he just asked me [again] this morning. He's like I need some more Narcan. He's like I'll pay you for it.

Rhode Island's current 9–1–1 Good Samaritan Law, which provides limited immunity from criminal prosecution for drug possession when emergency responders are called to the scene of an overdose, was enacted in July 2016 (Office of the Governor, 2016). At the time that this interview was recorded, the law had been in effect for nearly 9 months.

When you have no number 1

Participants of color—especially women of color—are statistically under-represented in the subset of individuals included in this analysis. Of those who were included in that subset, however, several reported having no primary dealer and, consequently, little control over the content or quality of the drugs they purchase. A man in his 40s who reported using opioids (typically prescription medications) 3–4 times per week on average—one of the few African-American men recruited for this study—reported product inconsistencies and framed those reports in a way that signaled a low level of trust with the person from whom he was buying.

> Interviewer: Do you have a regular dealer?
> Respondent: Not really, no. No, kind of whoever I bump into.
> Interviewer: You didn't have any quality issues?
> Respondent: Oh yeah. Nowadays you do more than ever. It's probably bringing it back to you were saying, this cutting it, debasing it and everything else now. For all you know, you're probably buying some baby powder.

Another non-white participant, a Native American man in his late 30s who reported using heroin 5–6 days per week on average, similarly reported having no reliable contacts with whom it would be possible to build a meaningful relationship by describing a recent heroin purchase.

> Interviewer: Would you be willing to walk me through the purchase that you made a week ago? Where you went, what you did, how you found the person kind of — Not exactly where you went, but you know what I mean.
> Respondent: A week ago I felt like I wanted some drugs. So, I walked down to an area where a lot of people were at that I would know. Like [this place], for instance, or whatever. When you see a lot of people out there, usually trying to buy drugs and things like that. And so it's infamous for buying drugs. Certain places are infamous for them people using drugs out there. You'll see them out there

actually doing drugs. So, I would walk up to someone like that, that I know that's into that, and I would ask them, “where can I get it?” And then would either call someone or even go with me to place — Interviewer: Is that consistent? Does that consistently work? Is that a good strategy for you?
Respondent: It's my best strategy. It's still the only strategy that I really have, because I personally don't know anyone personally to really call and be like, "Yo."

Several women in this study (all white) and a number of men endorsed the idea that dealers, in general, cannot be trusted to tell the truth, let alone act in their best interest. The sample of non-white participants included in this study is very small, thus limiting the ability to draw conclusions about race versus less frequent substance use as a determining factor in shaping social relationships; however, it bears mentioning that descriptions of extreme social isolation in the drug market, such as those immediately above, were only shared by male-identifying participants of color.

Discussion

The findings of this study suggest that, for many people who use drugs in Providence, Rhode Island, maintaining long-term relationships with trusted dealers is a key strategy for reducing the risk of substance use-related harm. Though not universal, a sizable number of participants reported typical behaviors from their dealers that align with the goals of consumer protection (i.e. refusing to sell fentanyl or openly communicating with clients about the presence or absence of fentanyl in heroin being sold), quality assurance (i.e. self-designed methods of “testing” heroin for fentanyl prior to selling it, seeking feedback and checking in post purchase), emergency first response (i.e. procuring naloxone and facilitating overdose reversal), and other forms of social and logistical support. In other words, some people who use opioids maintain generally positive relationships with their dealers, and those relationships appear to be protective against overdose as well as conducive to safer substance use behaviors.

The findings of this study also reveal that access to these potentially protective consumer-supplier relationships is not universal. Though the sampling method and the sample size of this cohort precludes any meaningful correlation analysis, several trends in the data bear explicit mention. First, male-identifying participants were much more likely than female-identifying participants to report a close relationship with their primary dealer with roots in a pre-existing friendship. Whatever the cause, it is possible that women are likely to face additional barriers to trust and social intimacy in these relationships—not least of which because they are more likely to need to build those relationships from scratch with each new supplier they meet. Second, though few people in this cohort reported having no meaningful relationships with suppliers, typically relying on the ability to buy from strangers or poorly-known acquaintances when buying drugs, the concentration of these reports among male-identifying participants of color (especially in a state like Rhode Island whose population is predominantly of white race) suggest that these individuals may be vulnerable to social isolation and, subsequently, greater risk of opioid-related harm than their white counterparts.

Further, this study predominantly included individuals who were already well connected to and regularly receiving services from a syringe services program or other community support organizations that distribute safer injection supplies and provide services with a harm reduction approach. Evidence of syringe service program's protective effect against the spread of HIV and other blood-borne diseases is very-well documented (Abdul-Quader et al., 2013; Cooper et al., 2012). The individuals included in this study, many of whom appear to face a lower risk of overdose thanks, in part, to their supplier, have likely also significantly reduced their risk of overdose through receipt of harm reduction services. It is conceivable that reliable receipt of such services is an indicator of the social support networks that many of the participants in this study already enjoy. In other words, it is possible that individuals who have fostered deeper relationships with harm reduction staff may be more likely to have also fostered deeper relationships with their suppliers—using the same risk mitigation strategy in multiple domains of their personal lives. If this is, indeed, the case, then structural barriers to safer injection supplies and social barriers to trusted consumer-supplier relationships would likely have synergistic effects—amplifying both the risk of infectious disease and the risk of overdose among some populations while jointly reducing those risks in others. Future studies should investigate possible correlations between structural (macro-level) risk factors, socio-relational (meso-level) risk factors, social capital, and incidence of overdose and other substance use-related harms.

Our findings are congruent with those found in the North Carolina study (Rhodes et al., 2019). Participants in that study also reported using trusted dealers as a personal fentanyl-avoidance and overdose-prevention strategy. In addition, participants in the North Carolina study indicated that their dealer stopped selling a particular batch after “a lot of people OD'd,” just as many participants in our study reported doing (Rhodes et al., 2019). Importantly, the study presented here also lends support to two conclusions put forward by the authors of the North Carolina study. First, both studies indicate that distinctions between drug “sellers” and drug “consumers” are often muddy. Many people in both studies reported buying and selling from friends, from individuals who also use, or from individuals whom they often use with. This fact throws into sharp relief the contradictions inherent in many states’ newly adopted “drug-induced homicide” or “death by distribution” laws, which typically allow for homicide charges to be brought against a “seller” believed to have sold drugs that resulted in an overdose (Blanchard, 2019; Mulvaney, 2017). Second, the findings of both studies imply that removing access to trusted dealers may put clients (who rely on those dealers for their fentanyl avoidance and overdose prevention effects) at immediate risk of overdose. Indeed, for many individuals in this study, the inability to access a trusted supplier was reported as the specific event that precipitated their most recent overdose.

The policy implications of these findings are significant. Put bluntly, arresting a dealer may directly contribute to overdose within their client population. Overall, the impact that drug policy, public health interventions, and/or law enforcement responses to substance use may have on the protective strategies that people who use drugs have created for themselves remains poorly understood. Without such understanding, good-faith attempts to disrupt macro-level drivers of the opioid-overdose epidemic (police sweeps, dealer take-downs, sudden pain clinic closures, etc.) may in fact only result in creating more harm among those who are already at risk (Carroll, Rich & Green, 2018). In the context of such disruptions, at a minimum, action should be taken to coordinate with public health interventions to reduce the risk of unintended consequences (Carroll et al., 2018).

Further, the Rhode Island legislature joined numerous other U.S. states in passing its own drug-induced homicide law in 2018. This new law allows for a life-sentence to be handed down to individuals found guilty of distributing illicit substances when those substances were implicated in a fatal overdose (Shihipar & Peterson, 2018). As of January 2020, only five cases in total have been brought under this new law, yet coverage of these cases have been widespread in local and national media (Associated Press, 2019; O'Laughlin, 2019; U.S. Attorney's Office, Western District of Rhode Island, 2019). The full impacts of these prosecutions on individuals who use drugs in Rhode Island and the relationships upon which they rely to navigate an uncertain drug market remain unknown, though many have suggested that further criminalization through these laws are likely to have little impact on substance use other than hindering 9–1–1 calls during an overdose (Peterson et al., 2019). Nevertheless, mixed-methods research indicates that substance use and illicit drug distribution cannot be

effectively deterred through increased threat sanctions and arrests (Bailey, 1983; Friedman et al., 2006, 2011). Research on criminal deterrence has also concluded that efforts to deter through increased criminalization simply restrict the characteristics of illegal behaviors, altering how (not whether) individuals produce or distribute illicit substances, occasionally resulting in increased risk to consumers of substance use-related harms (Barratt, Chanteloup, Lenton & Marsh, 2005; Dickinson, 2017; Friedman et al., 2006). Drug induced homicide laws should, therefore, be thought of not as deterrence strategies but as selective pressures that change the shape of the drug market. For individuals who rely on trusted suppliers for survival in an increasingly deadly drug market, this market pressures produced by this law—-ostensibly enacted in their name—may simply serve to disrupt the one lifelines they currently have.

These findings should be interpreted with certain study limitations in mind. Data collection was carried out in a single urban center—Providence, Rhode Island—at a time when fentanyl was still a relatively new feature of the local drug market. This data may not be representative of other regions with different populations or different historical changes in the drug supply. The individuals who participated in this study were predominantly recruited through direct service points and may not be representative of other people at risk of overdose who are from different (i.e. more affluent) socioeconomic backgrounds or who do not actively seek harm reduction services of any kind. Further, no demographic information was collected from participants about their primary or secondary dealers. Thus, this study is unable to assess generational differences among dealers (especially different social norms between older and younger—or more experienced and less experienced—dealers). Nor can this study elaborate how risk environments faced by people who use drugs may differ according to whether or not their primary dealer also uses drugs.

Finally, female-identified participants included in this qualitative study were almost exclusively white. Based on a review of the history of data collection activities, this discrepancy appears to have resulted due to an unanticipated confluence of sampling strategies, selection of recruitment locations, and timing of hypothesis generation. Regardless of the cause, female-identified participants of color are notably underrepresented in this analysis. Future studies should strive to correct this imbalance by ensuring that the experiences and perspectives are adequately sought out across demographic strata—especially women of color and sexual and/or gender minorities of color.

Conclusions

In summary, these findings suggest that socio-relational factors, especially interpersonal relationships between individuals who use drugs and their suppliers, significantly impact the synergistic relationships across multiple substance use-related harms in today's opioid-overdose epidemic. Evidence-based prevention strategies that are based on an awareness of—or even designed to harness—the positive and protective relationships that people who use drugs have already constructed for themselves are likely merited. Policy responses to the opioid-overdose epidemic should be organized around proven harm reduction and overdose prevention strategies, but, as this study indicates, there may be merit in considering the impact of those approaches on networks of people who use drugs, not simply on individuals.

Declaration of Competing Interest

None.

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EXHIBIT F

A brief from THE PEW CHARITABLE TRUSTS | March 2018

More Imprisonment Does Not Reduce State Drug Problems

Data show no relationship between prison terms and drug misuse

Overview

Nearly 300,000 people are held in state and federal prisons in the United States for drug-law violations, up from less than 25,000 in 1980.[1] These offenders served more time than in the past: Those who left state prisons in 2009 had been behind bars an average of 2.2 years, a 36 percent increase over 1990,[2] while prison terms for federal drug offenders jumped 153 percent between 1988 and 2012, from about two to roughly five years.[3]

As the U.S. confronts a growing epidemic of opioid misuse, policymakers and public health officials need a clear understanding of whether, how, and to what degree imprisonment for drug offenses affects the nature and extent of the nation's drug problems. To explore this question, The Pew Charitable Trusts examined publicly available 2014 data from federal and state law enforcement, corrections, and health agencies.[4] The analysis found no statistically significant relationship between state drug imprisonment rates and three indicators of state drug problems: self-reported drug use, drug overdose deaths, and drug arrests.

The findings—which Pew sent to the President's Commission on Combating Drug Addiction and the Opioid Crisis in a letter dated June 19, 2017—reinforce a large body of prior research that cast doubt on the theory that stiffer prison terms deter drug misuse, distribution, and other drug-law violations. The evidence strongly suggests that policymakers should pursue alternative strategies that research shows work better and cost less.

Sharp rise in federal drug imprisonment yields high cost, low returns

More than three decades ago, Congress responded to the rise of crack cocaine by requiring that more drug offenders go to prison and stay there longer.[5] Largely as a result of those actions, between 1980 and 2015, the number of federal prisoners serving time for drug offenses soared from about 5,000 to 92,000, though changes in drug crime patterns and law enforcement practices also contributed to the growth.[6] Although the share of federal inmates who are drug offenders has declined from its peak of 61 percent in 1994,[7] it was still nearly 50 percent in 2015.[8]

And as the federal prison population soared, spending ballooned 595 percent between 1980 and 2013 without delivering a convincing public safety return.[9] In fact, self-reported use of illegal drugs increased between 1990 and 2014 (see Figure 1), as has the availability of heroin, cocaine, and methamphetamine as indicated by falling prices and a rise in purity.[10] The surge in federal prison spending has also failed to reduce recidivism. The rate of federal drug offenders who leave prison and are placed on community supervision but commit new crimes or violate the conditions of their release has been roughly a third for more than three decades.[11]

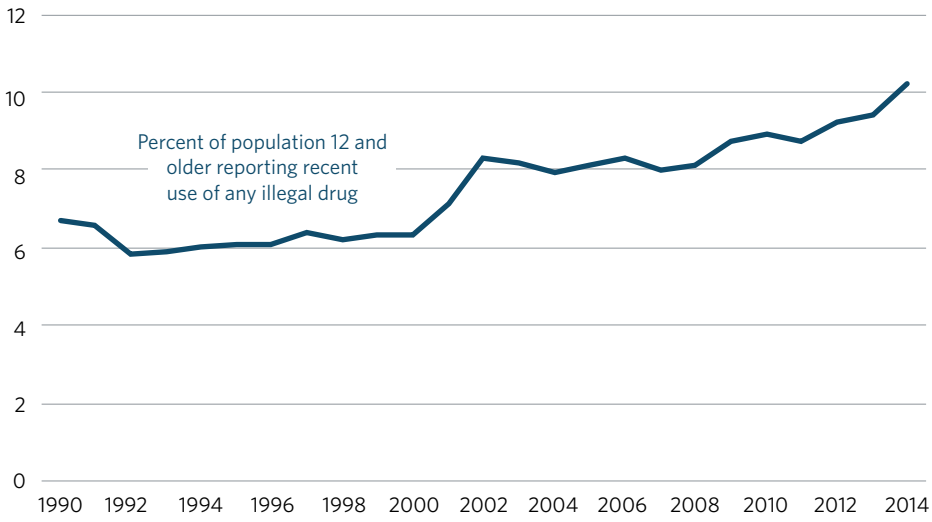
Penalties do not match roles

Although federal sentencing laws have succeeded in putting some kingpins and other serious drug offenders behind bars, they have also led to lengthy imprisonment for lower-level offenders.[12] The U.S. Sentencing Commission found that in 2009 the most serious traffickers—those defined as "high-level suppliers" or "importers" who rank at the top of the commission's culpability scale—represented 11 percent of federal drug offenders.[13] In contrast, nearly half of those sentenced for federal drug crimes in 2009 were lower-level actors, such as street dealers, couriers, and mules.[14] Research indicates that the public safety impact of incapacitating these offenders is essentially nullified because they are rapidly replaced.[15]

Figure 1

More Than 10% of Americans Reported Recent Use of an Illegal Drug

Self-reported drug use, 1990-2014



Source: Office of National Drug Control Policy, National Drug Control Strategy: Data Supplement 2016, Table 2, https://obamawhitehouse.archives.gov/sites/default/files/ondcp/policy-and-research/2016_ndcs_data_supplement_20170110.pdf

Rise in opioid misuse

Lawmakers across the country are trying to address the rise in opioid misuse, which includes prescription drugs and illicitly manufactured heroin and fentanyl. In 2015, more than 33,000 Americans died from an opioid overdose, and heroin-related deaths climbed 20 percent from the previous year, according to the Centers for Disease Control and Prevention.[16] In addition to lost lives and destabilized families and communities, these mortality rates take an extreme economic toll. The costs of opioid misuse totaled $504 billion in 2015, according to a recent report from the White House Council of Economic Advisers.[17]

Prescription opioids are more widely misused than heroin, and nearly 80 percent of today's heroin users said they previously misused prescription opioids.[18] Changes in the prescription opioid market may have spurred some users to shift to heroin.[19] For example, one study found that in a population of OxyContin users, heroin use nearly doubled within 18 months after the medication was reformulated in 2010 to deter misuse by making it harder to crush the tablets.[20] Heroin also costs less and is easier to acquire than prescription opioids in some communities.[21]

Drug imprisonment varies widely by state

Although federal courts garner more public attention, most of the nation's criminal justice system is administered by the states, and state laws determine criminal penalties for most drug offenses. But the 50 states have made different policy choices regarding drug penalties, which has led to considerable variation in drug imprisonment rates. (See Figure 2.)

In 2014, Louisiana had the highest drug-offender imprisonment rate in the nation at 226.4 per 100,000 residents, more than twice the rate of 37 other states. In contrast, Massachusetts' drug imprisonment rate was the lowest at 30.2 per 100,000 residents, less than one-seventh Louisiana's. In raw numbers, Louisiana had more drug offenders in prison on the last day of 2014 than every state except California, Florida, Illinois, and Texas, which have much larger populations. The country's second-highest drug imprisonment rate, 213.7 per 100,000 residents, was in Oklahoma and was more than double the rates in two neighboring states, Kansas and Arkansas. (See Table A.1 for more information.)

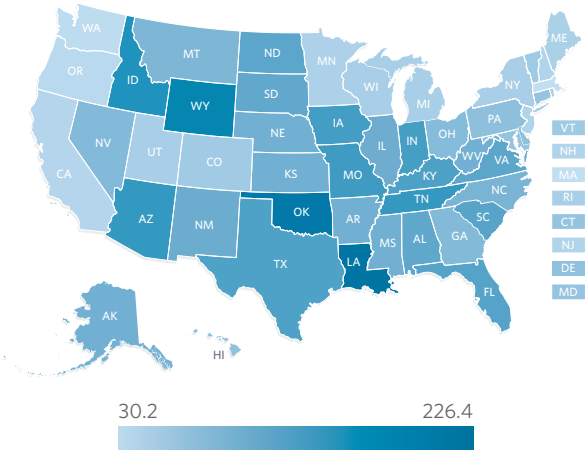
> "Lawmakers across the country are trying to address the rise in opioid misuse, which includes prescription drugs and illicitly manufactured heroin and fentanyl. In 2015, more than 33,000 Americans died from an opioid overdose, and heroin-related deaths climbed 20 percent from the previous year, according to the Centers for Disease Control and Prevention."

Figure 2

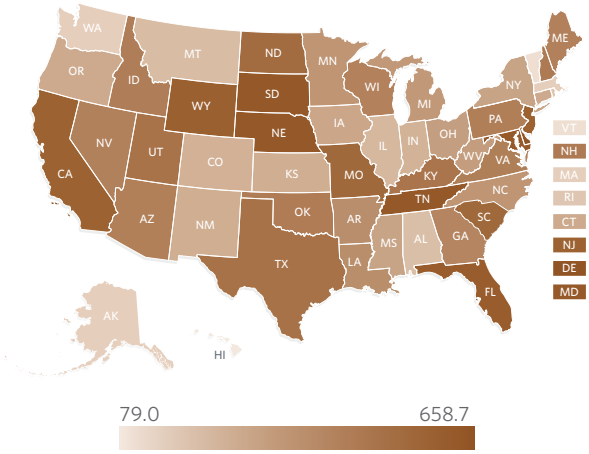
Drug Imprisonment Not Correlated With Drug Use, Arrests, or Overdose Deaths

4 measures of drug problems by state

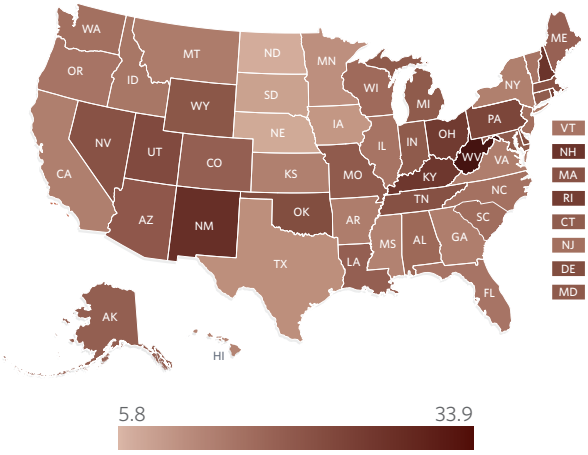
Drug Imprisonment Rates



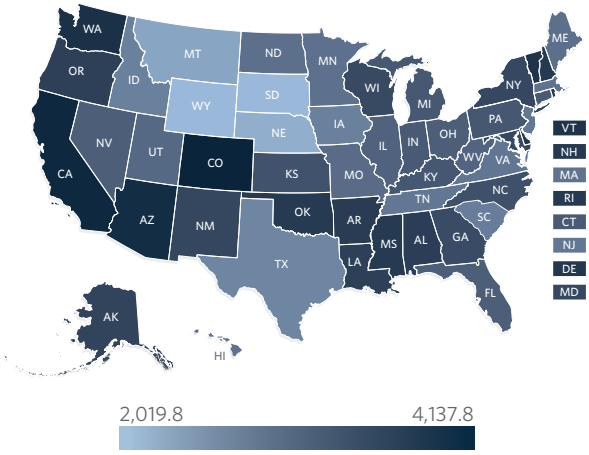
Drug Arrest Rates



Drug Overdose Death Rates



Drug Use Rates



Note: All rates are per 100,000 residents.

Source: Pew's analysis of 2014 data from 48 state corrections departments, the federal Bureau of Justice Statistics National Corrections Reporting Program (for California and Maine), the Federal Bureau of Prisons, the Centers for Disease Control and Prevention, the Federal Bureau of Investigation's Uniform Crime Reporting (UCR) Program, and the Substance Abuse and Mental Health Services Administration's National Survey on Drug Use and Health. See the "Data and methodology" section for more information.

No relationship between drug imprisonment rates and states' drug problems

One primary reason for sentencing an offender to prison is deterrence—conveying the message that losing one's freedom is not worth whatever one gains from committing a crime. If imprisonment were an effective deterrent to drug use and crime, then, all other things being equal, the extent to which a state sends drug offenders to prison should be correlated with certain drug-related problems in that state. The theory of deterrence would suggest, for instance, that states with higher rates of drug imprisonment would experience lower rates of drug use among their residents.

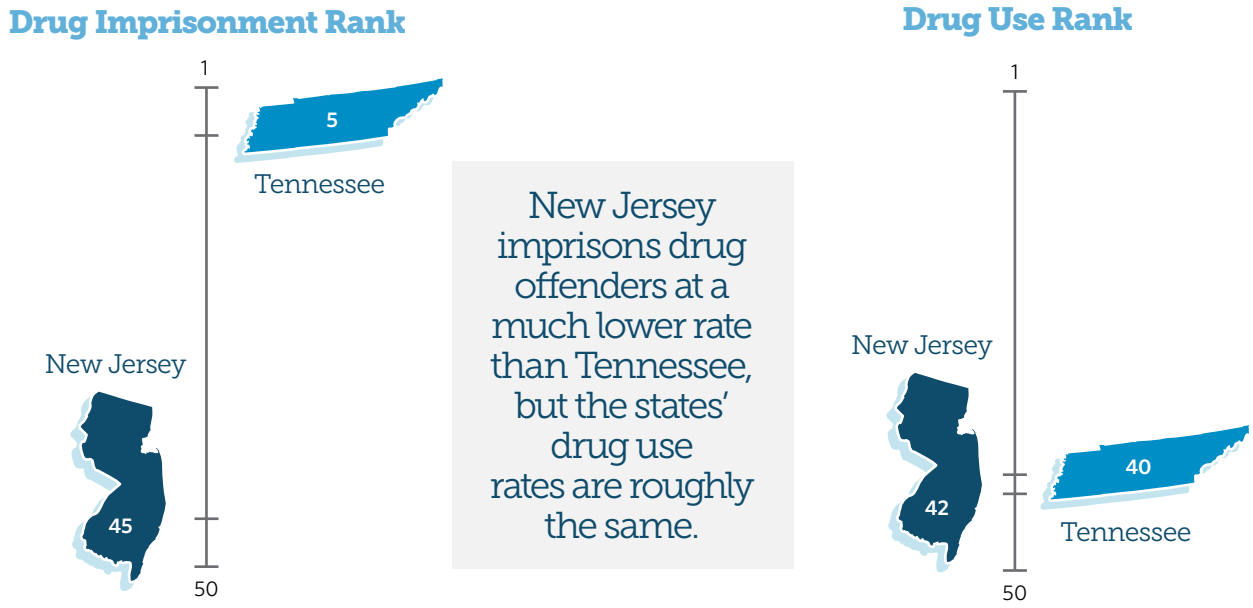
To test this, Pew compared state drug imprisonment rates with three important measures of drug problems—self-reported drug use (excluding marijuana), drug arrest, and overdose death—and found no statistically significant relationship between drug imprisonment and these indicators. In other words, higher rates of drug imprisonment did not translate into lower rates of drug use, arrests, or overdose deaths.

State pairings offer illustrative examples. For instance, Tennessee imprisons drug offenders at more than three times the rate of New Jersey, but the states' rates of self-reported drug use are virtually the same. (See Figure 3.) Conversely, Indiana and Iowa have nearly identical rates of drug imprisonment, but Indiana ranks 27th among states in self-reported drug use and 18th in overdose deaths compared with 44th and 47th, respectively, for Iowa.

Figure 3

Aggressive Approach to Drug Crimes Yields No Drug Misuse Benefit

Drug use and imprisonment rankings for Tennessee and New Jersey



Source: Pew's analysis of 2014 data from the states of New Jersey and Tennessee, the federal Bureau of Justice Statistics National Corrections Reporting Program, the Federal Bureau of Prisons, the Centers for Disease Control and Prevention, the Federal Bureau of Investigation's Uniform Crime Reporting (UCR) Program, and the Substance Abuse and Mental Health Services Administration's National Survey on Drug Use and Health

> If imprisonment were an effective deterrent to drug use and crime, then, all other things being equal, the extent to which a state sends drug offenders to prison should be correlated with certain drug-related problems in that state."

The results hold even when controlling for standard demographic variables, including the percentage of the population with bachelor's degrees, the unemployment rate, the percentage of the population that is nonwhite, and median household income. (See the "Data and methodology" section for more information.)

Some associations (though not causal relationships) did emerge among the demographic variables. The larger the share of a state's population that:

- Has a bachelor's degree, the lower the drug imprisonment rate.
- Is not white, the higher the drug imprisonment rate.
- Is unemployed, the lower the drug imprisonment rate.

Effective policies for curtailing drug misuse

The absence of any relationship between states' rates of drug imprisonment and drug problems suggests that expanding imprisonment is not likely to be an effective national drug control and prevention strategy. The state-level analysis reaffirms the findings of previous research demonstrating that imprisonment rates have scant association with the nature and extent of the harm arising from illicit drug use. For example, a 2014 National Research Council report found that mandatory minimum sentences for drug and other offenders "have few, if any, deterrent effects."[22] The finding was based, in part, on decades of observation that when street-level drug dealers are apprehended and incarcerated they are quickly and easily replaced.

On the other hand, reduced prison terms for certain federal drug offenders have not led to higher recidivism rates. In 2007, the Sentencing Commission retroactively cut the sentences of thousands of crack cocaine offenders, and a seven-year follow-up study found no increase in recidivism among offenders whose sentences were shortened compared with those whose were not.[23] In 2010, Congress followed the commission's actions with a broader statutory decrease in penalties for crack cocaine offenders.[24]

These and other research findings suggest that the most effective response to drug misuse is a combination of law enforcement to curtail trafficking and prevent the emergence of new markets; alternative sentencing to divert nonviolent drug offenders from costly imprisonment; treatment to reduce dependency and recidivism; and prevention efforts that can identify individuals at high risk for substance use disorders.

Law enforcement strategies. A 2014 report by the Police Executive Research Forum found that law enforcement agencies in several states are collaborating with other stakeholders to develop alternative approaches to drug offenders, such as diverting those with substance use disorders into treatment.[25] Another model involves harm-reduction strategies, such as training law enforcement officers in overdose prevention and community policing in neighborhoods with emerging heroin markets.[26] These interventions include collaborating with community organizations to dismantle open-air street markets by, among other things, telling drug dealers face to face that they will probably face punishment if they continue to sell drugs.[27] When offered options and assistance, many dealers accept; drug offenses in targeted jurisdictions have dropped by as much as 55 percent.[28]

Alternative sentencing strategies. Over the past 10 years, many states have revised their drug penalties and reduced their prison populations without seeing an increase in crime rates. In 2010, as part of a larger reform effort, South Carolina expanded probation and parole opportunities for people convicted of drug offenses.[29] The state's reform bill passed unanimously in the Senate and by a vote of 97 to 4 in the House of Representatives.[30] Since the legislation was enacted, South Carolina's prison population has decreased by 14 percent, and people convicted of violent offenses now make up a larger proportion of the state's inmates.[31] In addition, the violent crime rate dropped by 16 percent between 2010 and 2015.[32]

Michigan, New York, and Rhode Island also significantly decreased drug sentences, with Michigan and Rhode Island rolling back mandatory minimum penalties for drug offenses.[33] Each of these states reduced their prison populations and their crime rates.[34] More recently, Mississippi, Alaska, and Maryland have changed their drug sentencing and related policies, including revising mandatory minimums, reducing sentencing ranges, and establishing presumptive probation for certain offenses.[35] And in the 2016 election, 58 percent of Oklahoma voters approved a ballot measure that converted drug possession from a felony to a misdemeanor.[36]

Although lengthy prison sentences for drug offenders have shown a poor return on taxpayer investment, alternatives such as drug courts and stronger community supervision have proved more effective. A systematic review of drug courts in 30 states concluded that a combination of comprehensive services and individualized care is an effective way to treat offenders with serious addictions.[37] Meanwhile, supervision strategies that provide swift, certain, and graduated sanctions for violations and rewards for compliance have been shown to reduce recidivism and costs.[38] Texas, Georgia, North Carolina, and South Carolina have saved hundreds of millions of dollars by taking alternative approaches.[39]

> "The absence of any relationship between states' rates of drug imprisonment and drug problems suggests that expanding drug imprisonment is not likely to be an effective national drug control and prevention strategy."

Treatment strategies. An estimated 22 million Americans needed substance use treatment in 2015, but only about 1 in 10 received it.[40] Medication-assisted treatment (MAT)—a combination of psychosocial therapy and U.S. Food and Drug Administration (FDA)-approved medication—is the most effective intervention to treat opioid use disorder.[41] Yet only 23 percent of publicly funded treatment programs report offering any FDA-approved medications, and fewer than half of private sector facilities report doing so.[42]

Many states and localities are expanding drug treatment programs to address opioid misuse. In March 2015, Kentucky enacted a law eliminating barriers to treatment in county jails and providing funds for evidence-based behavioral health or medication-assisted treatment for inmates with an opioid use disorder.[43] It also allows local health departments to establish needle exchange sites, increases access to naloxone (a prescription drug shown to counter the effects of an opioid overdose), and supports individuals recovering from an overdose by connecting them to treatment services and prohibiting their possible prosecution for drug possession.[44]

Prevention strategies. Several evidence-based approaches are available to help patients and medical providers ensure appropriate use of prescribed opioids. One, a patient review and restriction (PRR) program, identifies individuals at risk for prescription misuse and ensures that they receive controlled substance prescriptions only from designated pharmacies and prescribers.[45] Another approach is prescription drug monitoring programs (PDMPs), state-based electronic databases of controlled substance prescriptions dispensed by pharmacies and prescribers. PDMPs allow prescribers, pharmacists, and other authorized stakeholders to monitor patients' controlled substance prescriptions and enable states to track prescribing practices and population-level drug use trends.[46]

Public supports alternatives for drug offenses

Across demographic groups and political parties, U.S. voters strongly support a range of major changes in how the states and federal government punish people who commit drug offenses. A nationwide telephone survey of 1,200 registered voters, conducted for Pew in 2016 by the Mellman Group and Public Opinion Strategies, found that nearly 80 percent favor ending mandatory minimum sentences for drug offenses.[47] By wide margins, voters also backed other reforms that would reduce the federal prison population. More than 8 in 10 favored permitting federal prisoners to cut their time behind bars by up to 30 percent by participating in drug treatment and job training programs that are shown to decrease recidivism. Sixty-one percent believed prisons hold too many drug offenders and that more prison space should be dedicated to "people who have committed acts of violence or terrorism."

A minority of voters backed tough prison terms for drug offenses. Twenty percent said drug couriers or mules should receive a 10-year minimum sentence, and 25 percent said drug dealers who sold illegal substances on the street deserved a minimum 10-year term. In addition, 34 percent believed that drug offenders "belong behind bars," and 22 percent thought sentences for people convicted of federal drug offenses were "too lenient."[48]

> "Across demographic groups and political parties, U.S. voters strongly support a range of major changes in how the states and the federal government punish people who commit drug offenses."

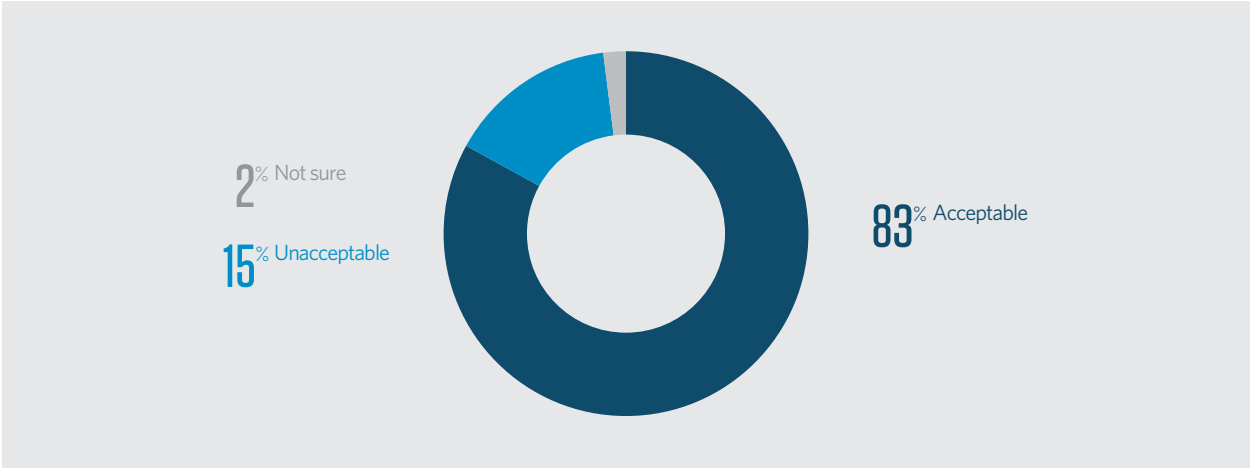
In addition, public opinion polls in four states, also conducted for Pew by the Mellman Group and Public Opinion Strategies between February 2015 and March 2017, reveal significant and broad political support for reducing prison sentences for nonviolent offenders and reinvesting the savings in alternatives, including drug treatment.

- **Maryland.**[49]
  - 75 percent agreed that imposing longer prison terms "is the wrong way to break the cycle of crime and addiction" and that a "more effective strategy is to put drug-addicted offenders into treatment programs and community supervision and to hold them accountable with community service or short stays in jail if they continue to use drugs or fail to go to treatment."
  - More than 8 in 10 (83 percent) favored giving judges more discretion in deciding sentences for drug offenses.
  - 86 percent supported "allowing nonviolent offenders to earn additional time off of their prison term for completing substance abuse and mental health treatment programs while in prison."
- **Utah.**[50]
  - 73 percent of state voters—including 74 percent of Republicans, 73 percent of independents, and 71 percent of Democrats—favored a bipartisan commission's recommendation to reclassify simple drug possession from a felony to a misdemeanor.
  - 70 percent believed that "prison is not the best place for people who are addicted to drugs. Requiring offenders to get treatment and increasing community supervision rather than sending them to prison will more effectively stop the cycle of addiction and make our communities safer."
  - 85 percent expressed support for "shorter prison sentences for inmates who complete rehabilitative substance abuse and mental health treatment programs while in prison."
- **Oklahoma.**[51]
  - 84 percent of respondents believed prison sentences for nonviolent offenders should be shortened and that the resulting savings should be reinvested in probation, parole, and substance abuse and mental health treatment.
  - 86 percent favored allowing people on probation or parole the chance to reduce their supervision periods by engaging in good behavior or participating in substance abuse or mental health treatment programs.
  - Support for both of these reforms spanned political parties and demographic groups.
- **Louisiana.**[52]
  - Nearly two-thirds of Louisiana voters (63 percent)—including 54 percent of Republicans, 66 percent of independents, and 69 percent of Democrats—approved of a proposal to reduce penalties for lower-level drug offenses while keeping long sentences for higher-level drug dealers.
  - 83 percent favored a proposal to cut prison sentences for nonviolent crimes and use the resulting savings for "stronger probation and parole and more substance abuse and mental health treatment for offenders." (See Figure 4.) Consensus was broadly bipartisan for this question as well, with backing from 80 percent of Republicans, 82 percent of independents, and 87 percent of Democrats. (See Figure 5.)

Figure 4

Most Louisianans Favor Cutting Prison Sentences for Nonviolent Crimes

Strong support for investing in probation, parole, and substance misuse treatment

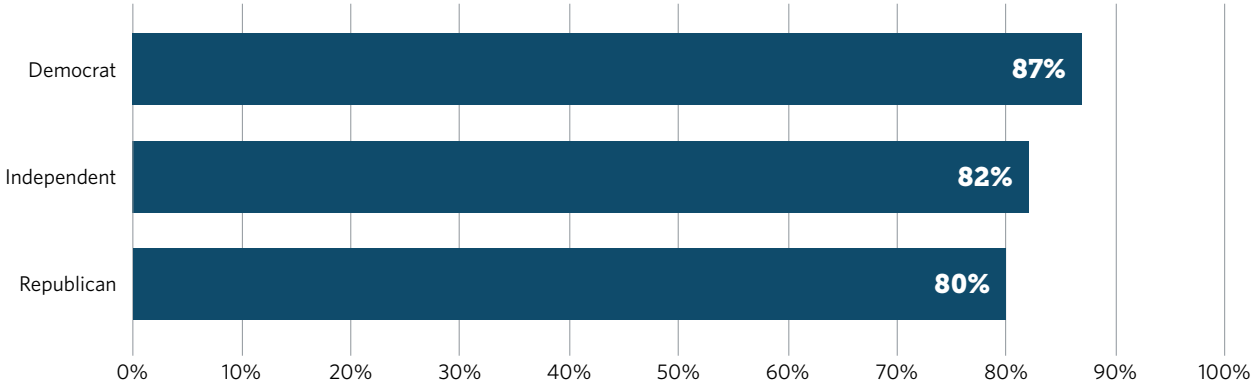


Source: A telephone survey of 600 voters representing the likely 2018 Louisiana electorate conducted for The Pew Charitable Trusts by the Mellman Group and Public Opinion Strategies between March 27 and 30, 2017. Voters were asked: "One proposal is to shorten prison sentences for nonviolent offenders and [use] the money saved to pay for stronger probation and parole and more substance abuse and mental health treatment for offenders. Would you find this proposal generally acceptable or generally unacceptable?"

Figure 5

Support for Louisiana Reform Was Broadly Bipartisan

Voters across party lines backed cutting prison terms for nonviolent offenders



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Conclusion

Although no amount of policy analysis can resolve disagreements about how much punishment drug offenses deserve, research does make clear that some strategies for reducing drug use and crime are more effective than others and that imprisonment ranks near the bottom of that list. And surveys have found strong public support for changing how states and the federal government respond to drug crimes.

Putting more drug-law violators behind bars for longer periods of time has generated enormous costs for taxpayers, but it has not yielded a convincing public safety return on those investments. Instead, more imprisonment for drug offenders has meant limited funds are siphoned away from programs, practices, and policies that have been proved to reduce drug use and crime.

Data and methodology

This analysis used imprisonment data collected from state corrections departments, the Bureau of Justice Statistics National Corrections Reporting Program (for California and Maine only), and the Federal Bureau of Prisons. Imprisonment data included offenders in state and federal facilities; federal drug offenders were assigned to state counts based on the location of the federal district court in which they were sentenced. Inmates were considered "drug offenders" if their "most serious" or "controlling" offense was for a drug crime, including all drugs and all levels of drug offenses (ranging from possession to trafficking). Correctional facilities in the District of Columbia were not included in the analysis. Federal offenders in community corrections, military, and foreign facilities and local jail inmates (up to 70 percent of whom are being held pending trial[53]) also were not included.

Drug use rates were reported by the National Survey on Drug Use and Health (NSDUH), an annual survey of randomly selected individuals 12 and older, sponsored by the Substance Abuse and Mental Health Services Administration, an agency in the U.S. Department of Health and Human Services. This analysis utilized 2013-14 NSDUH data for adults 18 or older, comprising approximately 96,000 individuals. For this brief, illicit drug use rates excluded marijuana, which has been legalized for medicinal and recreational use in several states.

Overdose death rates came from the Centers for Disease Control and Prevention and the FBI's Uniform Crime Reporting Program (UCR) reported drug arrest rates. The state-level drug arrest rates include marijuana since UCR data is not broken out by drug type.

Unless otherwise noted, all data are from 2014, the most recent year for which complete data are available for each of the four measures. Data on drug treatment admissions and unmet drug treatment need by state were excluded because the availability of drug treatment depends on a range of factors (including state funding levels) that make such data a relatively poor indicator of the extent of a state's drug problems.

To measure whether a relationship exists between drug imprisonment rates and state drug problems, Pew performed a simple regression test. The statistical model isolated the correlation between states' drug problems and drug offender imprisonment rates and controlled for standard demographic variables, including the percentage of the population with bachelor's degrees, the unemployment rate, the percentage of the population that is nonwhite, and median household income in each respective state. Demographic data were drawn from the U.S. Census Bureau, and unemployment and income data were derived from the U.S. Bureau of Labor Statistics. The analysis did not draw conclusions about causality between state drug imprisonment rates and the aforementioned indicators of state drug problems.

The 2016 nationwide poll cited in this report captures findings from a telephone survey of 1,200 registered voters conducted for Pew by The Mellman Group and Public Opinion Strategies between Jan. 13 and 19, 2016, that included cellphones and landlines randomly selected from official voter lists. The margin of error for the survey was plus or minus 2.8 percent at the 95 percent confidence level and higher for subgroups.

The four state polls also capture findings of telephone surveys—also conducted by the Mellman Group and Public Opinion Strategies—of 600 likely voters per state, which similarly included cellphones and landlines selected from official voter lists. Each survey had a margin of error of plus or minus 4.0 percent at the 95 percent confidence level and higher for subgroups. The field dates for the state surveys were Feb. 16-19, 2015, for Utah; Feb. 17-21, 2016, for Maryland; March 6-10, 2017, for Oklahoma; and March 27-30, 2017, for Louisiana.

Appendix

Table A.1

Drug Imprisonment and Drug Use Indicators by State, 2014

State	Drug imprisonment			Overdose death rate (rank)	Drug arrest rate (rank)	Adult illicit drug use rate (rank)
	Prisoner count	Rate	Rank by rate			
Louisiana	10,527	226.4	1	16.7 (23)	380.5 (26)	3,508.4 (13)
Oklahoma	8,286	213.7	2	20.0 (10)	457.0 (17)	3,623.5 (10)
Wyoming	1,050	179.7	3	18.7 (14)	592.1 (7)	2,019.8 (50)
Idaho	2,464	150.8	4	13.0 (35)	453.3 (18)	2,575.0 (45)
Tennessee	9,280	141.7	5	19.4 (11)	633.5 (4)	2,711.3 (40)
Arizona	9,483	140.9	6	18.0 (15)	440.8 (21)	3,933.7 (3)
Missouri	8,229	135.7	7	17.6 (19)	552.4 (11)	2,848.0 (34)
Iowa	4,080	131.3	8	8.5 (47)	293.4 (35)	2,602.9 (44)
Indiana	8,647	131.1	9	17.8 (18)	245.1 (41)	3,070.5 (27)
Kentucky	5,514	124.9	10	24.4 (4)	490.4 (15)	3,118.6 (24)
Texas	33,304	123.5	11	9.6 (45)	503.3 (13)	2,548.8 (46)
Florida	23,804	119.7	12	13.2 (32)	614.2 (6)	3,022.4 (29)
South Carolina	5,721	118.4	13	14.5 (27)	552.9 (10)	2,643.3 (43)
North Dakota	835	112.9	14	5.8 (50)	541.5 (12)	2,800.9 (35)
Virginia	9,380	112.7	15	11.8 (39)	444.2 (20)	2,709.2 (41)
Alabama	5,381	111	16	14.9 (25)	205.0 (44)	3,556.1 (12)
South Dakota	944	110.6	17	7.4 (48)	633.6 (3)	2,022.4 (49)
New Mexico	2,101	100.7	18	26.2 (2)	265.1 (38)	3,408.7 (16)
Illinois	12,711	98.7	19	13.2 (33)	228.9 (42)	2,972.3 (31)
Kansas	2,851	98.2	20	11.4 (42)	264.4 (39)	3,209.7 (22)
West Virginia	1,809	97.8	21	33.9 (1)	323.9 (31)	2,929.1 (32)

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State	Drug imprisonment			Overdose death rate (rank)	Drug arrest rate (rank)	Adult illicit drug use rate (rank)
	Prisoner count	Rate	Rank by rate			
Alaska	720	97.7	22	16.8 (21)	157.3 (47)	3,454.8 (15)
Nebraska	1,830	97.3	23	6.6 (49)	635.9 (2)	2,190.0 (48)
Mississippi	2,904	97	24	11.2 (43)	299.2 (33)	3,668.6 (9)
Arkansas	2,858	96.3	25	12.0 (37)	376.5 (27)	3,583.7 (11)
North Carolina	8,984	90.3	26	13.7 (30)	348.9 (29)	3,253.2 (21)
Montana	890	86.9	27	12.2 (36)	215.4 (43)	2,255.5 (47)
Georgia	8,429	83.5	28	11.9 (38)	422.1 (25)	3,327.2 (20)
Nevada	2,293	80.8	29	19.2 (12)	440.6 (22)	3,033.6 (28)
Ohio	9,193	79.3	30	23.7 (5)	313.4 (32)	3,014.7 (30)
Pennsylvania	9,255	72.4	31	21.4 (7)	448.8 (19)	3,131.5 (23)
Hawaii	998	70.3	32	11.1 (44)	79.0 (50)	2,790.1 (37)
Delaware	657	70.2	33	20.2 (9)	658.7 (1)	3,687.0 (6)
Maryland	3,998	66.9	34	17.9 (16)	632.2 (5)	3,394.1 (17)
Connecticut	2,388	66.4	35	17.3 (20)	276.0 (37)	3,085.2 (26)
Vermont	363	57.9	36	13.2 (31)	105.5 (49)	3,761.3 (5)
Colorado	3,005	56.1	37	16.8 (22)	249.8 (40)	4,137.8 (1)
Rhode Island	540	51.2	38	23.4 (6)	181.3 (45)	3,680.8 (7)
Utah	1,486	50.5	39	20.5 (8)	497.1 (14)	2,892.5 (33)
Wisconsin	2,899	50.4	40	14.8 (26)	431.7 (24)	3,342.4 (19)
New York	9,919	50.2	41	11.6 (41)	297.7 (34)	3,369.7 (18)
Michigan	4,944	49.9	42	17.8 (17)	338.7 (30)	3,108.1 (25)
Maine	643	48.3	43	16.2 (24)	436.2 (23)	2,800.7 (36)
Minnesota	2,542	46.6	44	9.5 (46)	350.9 (28)	2,778.6 (38)
New Jersey	3,864	43.2	45	14.0 (28)	589.8 (9)	2,699.8 (42)
New Hampshire	573	43.2	46	25.2 (3)	469.1 (16)	3,677.3 (8)
California	15,983	41.2	47	11.7 (40)	590.4 (8)	3,996.5 (2)

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State	Drug imprisonment			Overdose death rate (rank)	Drug arrest rate (rank)	Adult illicit drug use rate (rank)
	Prisoner count	Rate	Rank by rate			
Oregon	1,470	37	48	13.1 (34)	281.2 (36)	3,502.4 (14)
Washington	2,422	34.3	49	13.9 (29)	157.3 (46)	3,808.8 (4)
Massachusetts	2,039	30.2	50	19.1 (13)	155.9 (48)	2,740.8 (39)

Notes: All rates are per 100,000 residents. The first three columns reflect adult inmates serving time in state and federal prisons for drug offenses. The adult illicit drug use rate excludes marijuana. New Hampshire and Utah's drug prisoner counts include drug and alcohol offenses. Uniform Crime Reporting arrest data limitations included: No 2014 data from the New York City Police Department; Illinois counts are for Chicago and Rockford only; UCR had limited data for Alabama so publicly available data provided by the state were used instead.

Sources: Pew's analysis of 2014 data from 48 states, the federal Bureau of Justice Statistics National Corrections Reporting Program (for California and Maine only), the Federal Bureau of Prisons, the Centers for Disease Control and Prevention, the Federal Bureau of Investigation's Uniform Crime Reporting Program, and the Substance Abuse and Mental Health Services Administration's National Survey on Drug Use and Health

External reviewers

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