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High Rates of Police Detention Among Recently Released HIV-infected Prisoners in Ukraine: Implications for Health Outcomes

Jacob M. Izenberg¹, Chethan Bachiredy¹, Michael Soule², Tetiana Kiryazova³, Sergey Dvoryak⁴, and Frederick L. Altice^{1,5}

¹Yale University School of Medicine, Section of Infectious Diseases, AIDS Program, New Haven, CT, USA

²Massachusetts General Hospital, Department of Psychiatry, Boston, MA, USA

³Future Without AIDS Foundation, Odessa, Ukraine

⁴Ukrainian Institute on Public Health Policy, Kyiv, Ukraine

⁵Yale University School of Public Health, Division of Epidemiology of Microbial Diseases, New Haven, CT, USA

Abstract

Background—Ukraine's HIV epidemic, primarily affecting people who inject drugs (PWID), is expanding and transitioning despite free opioid substitution therapy (OST) and antiretroviral therapy (ART), two effective ways to reduce HIV transmission. Police detention not resulting in imprisonment, defined as police harassment, of PWID is common, but its prevalence and impact on health is not known.

Method—HIV-infected individuals (N=97) released from prison within one year were recruited and surveyed in two HIV-endemic Ukrainian cities about post-release police detention experiences. Data on the frequency of police detention, related adverse events, and impact on OST and ART continuity were collected, and correlates of detention were examined using logistic regression.

Results—Detention responses were available for 94 (96.9%) participants, of which 55 (58.5%) reported police detentions (mean=9.4 per person-year). For those detained while prescribed OST (N=28) and ART (N=27), medication interruption was common (67.9% and 70.4%, respectively); 23 of 27 participants prescribed OST (85.2%) were detained en route to/from OST treatment. Significant independent correlates of detention without charges included post-release ART prescription (AOR 4.98, $p=0.021$), current high-risk injection practices (AOR 5.03, $p=0.011$),

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Contact: Jacob Izenberg, **Address:** 135 College Street, Suite 323, New Haven, CT 06511 USA, **Telephone:** +1.203.737.2883, **Facsimile:** +1.203.737.4051, Jacobizenberg@gmail.com.

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Contributors

Jl participated in study design, survey preparation, and data analysis and wrote the manuscript

CB, MS participated in study design, data analysis, and critical editing of the manuscript

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Conflicts of Interest

All authors declare that they have no conflicts of interest

male gender (AOR 10.88, $p=0.010$), and lower lifetime months of imprisonment (AOR 0.99, $p=0.031$).

Conclusions—HIV-infected individuals recently released from prison in Ukraine experience frequent police detentions, resulting in withdrawal symptoms, confiscation of syringes, and interruptions of essential medications, including ART and OST. Structural changes are urgently needed to reduce police detentions in order to control HIV transmission and improve both individual and public health.

Keywords

HIV; police detention; police harassment; antiretroviral therapy; opioid substitution therapy; injection drug use; Ukraine; Eastern Europe

1. Introduction

During the first decade of the twenty-first century, Eastern Europe and Central Asia collectively experienced a 24% increase in HIV incidence despite a 19% decline globally (Spicer et al., 2011; UNAIDS, 2010). Of these countries, Ukraine is the most severely affected, with adult prevalence exceeding 1% (Bobrovskyy et al., 2012). Despite growing transmission through heterosexual intercourse (Burruano and Kruglov, 2009), PWID account for 70% of Ukraine's cumulative HIV incidence (UNAIDS, 2010), reflecting a regional epidemic among people who inject drugs (PWID) (Mathers et al., 2008). In Ukraine, this syndemic of HIV and drug injection is reflected in the fact that of approximately 290,000 PWID, primarily using opioids, (Kruglov, 2008; Nieburg and Carty, 2012), HIV prevalence ranges from 21.3%–41.8% (Balakiryeva et al., 2012; Mathers et al., 2008). As a consequence mathematical modeling of the HIV epidemic among both PWID and non-PWID has identified expansion of opioid substitution therapy (OST), one of few evidence-based interventions effective at reducing HIV transmission among opioid injectors (Gowing et al., 2008), as the most cost-effective (and in combination with ART, the most efficacious) approach to reducing overall HIV incidence and prevalence (Alistar et al., 2011).

Ukrainian law mandates free ART (Judice et al., 2011) and OST (Bruce et al., 2007; Mathers et al., 2010), yet access remains very limited due to numerous prevention and treatment barriers (Altice et al., 2010; Bruce et al., 2007; Izenberg and Altice, 2010; Judice et al., 2011; Wood et al., 2008). Among these, police detention and harassment is not empirically described, yet likely plays a significant role in both facilitating high-risk injection behavior among PWID and undermining ART and OST uptake and expansion (Bruce and Schleifer, 2008; Mimiaga et al., 2010; Strathdee et al., 2010; Wolfe et al., 2010).

Ukrainian law allows police to detain individuals for 72 hours without a criminal charge (Wolfe and Cohen, 2010). Unsanctioned detentions, beatings, forced-confessions, and other forms of police abuse have also been reported (Schleifer, 2009), making police detention without charge but one form of police harassment. PWID, particularly those with HIV, are often targeted when visiting services venues, including syringe-exchange sites, pharmacies (which legally sell clean syringes in Ukraine) (Spicer et al., 2011), and OST and HIV clinics (Judice et al., 2011; Mimiaga et al., 2010). Additional documented abuses include the confiscation of HIV medications (Mimiaga et al., 2010), intimidation of OST providers (Cohen, 2010), and forced confessions (Schleifer, 2009). By promoting “rushed” or “hidden” injection and discouraging use of treatment facilities, these policing practices contribute profoundly to what Rhodes and colleagues call the “HIV risk-environment”, so much so that by their estimates, elimination of police beatings alone in three Ukrainian cities

would avert between 2–19% of future HIV infections in those locales (Strathdee et al., 2010).

Although qualitative data confirm that detention of PWID and HIV-infected individuals is a major problem in Ukraine and a likely contributor to the country's unrelenting HIV epidemic, the practice has not to our knowledge been quantitatively evaluated anywhere in the region among any group, including HIV-infected individuals. Thus, our aim was to characterize the prevalence and impact on health of police detention on a group of HIV-infected individuals recently released from prison in Ukraine.

2. METHODS

2.1 Patient Population and Study Design

From November 2010 through January 2011, trained staff in Odessa and Kyiv, two HIV-endemic Ukrainian cities, recruited a sample of 88 men and 11 women according to the following criteria: 1) age >18 years; 2) HIV-infected by self-report; and 3) released from prison between 1–12 months. Potential participants were not told about inclusion criteria during recruitment, but that only that their post-release experiences were being assessed. A convenience approach was used to recruit an adequate sample of this hidden, highly marginalized target population. In Odessa, a prisoner outreach organization conducted a snowball sample with 7 initial seed respondents. In Kyiv, a different organization recruited respondents at a post-release services center where former prisoners periodically access services. Only verbal consent was obtained as no identifying information was gathered, with a copy of the consent form given to each consenting respondent. No eligible recruit refused further participation, consistent with previous experiences in Ukraine (Booth et al., 2009). The 60-minute surveys were then conducted in a private room with no prison staff or government representatives present. After completion, participants were paid UAH 50 (\$8.25 USD) for time and travel. Ethical oversight was provided by Institutional Review Boards at the Ukrainian Institute on Public Health Policy and Yale University School of Medicine.

2.2 Study Measures

Surveys were created in English, translated into Russian, and back-translated into English using previously described methods (Bullinger et al., 1998), verified by bilingual staff, and piloted to verify quality and respondent understanding.

Unofficial detention, defined here as detention not accompanied by a “charge” (e.g., theft, drug possession, etc.), was the primary outcome of interest. Respondents were asked to report the number of unofficial detentions they had experienced since prison-release, and those reporting one or more were categorized as “detained”. The total number of detentions experienced by each respondent since prison-release was counted and, because respondents had been out for varying periods of time, a rate of detentions per person-year was calculated for each respondent. To streamline the survey process, further characterization of detentions was limited to the 5 most recent episodes per individual. For these episodes only, respondents were asked if any of the following related adverse events had occurred: confiscation of needles, experience of withdrawal symptoms, or interruption of either OST or ART for greater than 24 hours. Detained respondents were asked if they had experienced a coerced confession, defined as having their access to medications (OST or ART) or the threat of withdrawal used to extract a confession. Finally, all respondents were asked if they had been stopped, detained or harassed while *en route* to or from an OST venue at any time since release.

Demographic measures included age and gender. Income was stratified as above or below poverty (monthly 888 UAH, approximately \$110 USD, in 2010). Relationship status was defined as stable partner (spouse or “girlfriend/boyfriend”) or no stable partner. Housing was stratified into “stable” versus “unstable” according to established definitions (Chen et al., 2011), with stable housing defined as an apartment rented by or belonging to the respondent, relative, or stable partner or residency in a long-term treatment facility. Residency in a brothel or shelter or self-reported homelessness was considered unstable. Criminal justice measures included length of last incarceration, lifetime prison sentences, total number of months in prison, lifetime detentions not resulting in a prison sentence, and age of first incarceration.

Two standardized scales validated in Russian were used to screen for substance use disorders—the Alcohol Use Disorders Identification Test (AUDIT; Nilssen et al., 2005) and the 10-item Drug Abuse Severity Test (DAST-10; Uusküla et al., 2012). DSM-IV criteria were used to measure opioid dependence. We used validated AUDIT cut-offs for men (8) and women (4) for hazardous drinking (Allen et al., 2001; Neumann et al., 2004; Peng et al., 2012), and 20 for dependence (Babor et al., 2001). A cut-off of 3 was used on the DAST-10 to define moderate to high drug abuse severity (Skinner, 1982).

Current drug use was defined as use on at least one day in the last thirty days, and measured using an inventory of typical drugs of abuse, expanded to include those common in Ukraine, including homemade compounds. For simplicity, these were categorized as stimulants, illegal opioids, alcohol, and poly-substance. Heroin, morphine, opium, and homemade “poppy straw” were classified as illegal opioids. Stimulants included amphetamines, ecstasy, cocaine, and homemade stimulants. Poly-substance was defined as use of substances in at least two substance groups in a single day, with the exception of OST. Respondents reported total injection days and typical number of injections on a given day, with current injection defined as at least one injection day in the prior month and current high-risk injection defined as injecting with a shared needle or syringe or with liquid drugs drawn from a shared container in the last thirty days. Respondents were also asked the age at which they first injected.

To evaluate healthcare use post-release, respondents were asked about receiving OST, HIV care (defined as a visit with a doctor or nurse to get HIV care other than an HIV test), and ART since release from prison.

2.3 Data Analysis

Data analysis was conducted using SPSS version 20 (SPSS Inc, Chicago, IL, USA). Respondents were placed into one of two categories for the primary outcome: “detention” and “no detention.” Descriptive data on the prevalence of detention and related adverse events were tallied from the descriptions given for each detention. Bivariate correlations of detention were determined using appropriate tests (chi square for binary responses, independent t-tests for normally distributed continuous variables and Mann-U Whitney tests for all other continuous variables). Characteristics with $p < 0.20$ on bivariate analysis were selected for an initial model, which was further fitted using backward stepwise regression based on small-sample corrected AIC. After the initial stepwise regression, time since prison-release was forced into the final model to control the potential effect of time since release on the primary outcome. Because of our interest in understanding the relationship between detention and HIV transmission, active high-risk injection was also retained in the model through forced entry while active injection was eliminated because of collinearity. During the backwards-stepwise elimination approach, recruitment location and age were dropped from the final model (neither demonstrated a significant effect on the outcome,

improvement in AIC, or significant interaction effects with other parameters when reintroduced).

3. RESULTS

3.1 Baseline Characteristics

Table 1 describes characteristics of the sample stratified by detention status. Of 97 respondents recruited (50 from Odessa, 47 from Kyiv), 94 provided valid information on their detention experiences and were included in the analysis. Respondents were primarily men (88.4%) in their mid-thirties (mean = 35.7 years) who were stably housed (75.3%). Compared to those not detained, those detained were significantly more likely to be male (96.4% vs 76.9%, $p = 0.004$) and recruited in Kyiv (61.8% vs. 28.2%, $p < 0.001$).

The mean duration of last prison term was 49.6 months, and the mean time since release was 171.4 days. Neither differed significantly by detention status ($p=0.548$ and $p=0.673$, respectively). The lifetime rates of incarceration and detentions not resulting in imprisonment were high, averaging 2.9 and 11.0, respectively.

The majority of respondents met pre-incarceration screening criteria for high drug abuse severity (81.9%), opioid dependence (84.0%) and hazardous drinking (61.6%); 18.6% met criteria for alcohol dependence. About half reported current illegal opioid use and one in five reported current stimulant use.

3.2 HIV transmission risk behaviors

A majority of respondents was currently injecting drugs (57.6%), with a mean of 1.8 injections per injection day. Overall, 37.0% met criteria for “high risk” injection, with 24.8% having drawn from a common liquid container and 14.3% sharing a syringe; 11.7% reported both. Those reporting detentions were significantly more likely to report “high risk” injections (51.9%, vs. 15.8%, $p < 0.001$).

3.3 Access to Post-Release Healthcare Services

Access to post-release healthcare services is presented in Table 1. Two thirds of all respondents (67.6%) reported receiving HIV care since release; however, less than a third received medications, including ART (29.2%) or OST (31.8%) and only 15.1% received both. Compared to those not detained, those detained were significantly more likely to have received both ART (39.2% vs. 15.8%, $p = 0.016$) and OST (44.0% vs. 15.8%, $p = 0.005$).

3.4 Correlates of Police Detention

Table 2 provides an overview of key detention events with 58.5% reporting at least one unofficial police detention post-release (range 1–30). Among those detained, the calculated mean annual detention rate was 9.4 per person-year.

Of 55 reporting detentions, 7 respondents experienced >5 episodes. As described in our methods, we report on only the 150 detentions for which we collected detailed data on detention experiences. Among those detained while on OST ($N = 28$), the majority (67.9%; 43 instances) reported at least one interruption lasting >24 hours. Among those detained while on ART ($N = 27$), over two-thirds (70.4%; 42 instances) experienced an interruption >24 hours. Likewise, over two-thirds (69.4%; 83 episodes) of those detained while using drugs ($N = 49$) reported experiencing withdrawal symptoms. Over three-quarters (78.3%; 34 total episodes) of those detained while carrying needles or syringes ($N = 23$) reported having them confiscated at least once. Among all those detained, 57.4% experienced police efforts to extract a confession through threats of withdrawal or withholding of medication. The vast

majority (85.2%) of those prescribed OST reported arrest or harassment en route to or from an OST site.

The final logistic regression model for correlates of detention is depicted in Table 3. Significant independent correlates for detention included being prescribed ART post-release (AOR 4.98, $p = 0.021$), male gender (AOR 10.88 $p = 0.010$), high-risk injection practices (AOR 5.03, $p = 0.011$), and cumulative lifetime months in prison (AOR 0.99, $p = 0.031$). Time since release from prison did not significantly correlate with detention ($p = 0.202$).

4. DISCUSSION

4.1 Police Detention and Its Impact on HIV Prevention and Treatment

Although the recently incarcerated, HIV-infected individuals represented in our data are particularly high-risk, this study is nonetheless the first, to our knowledge, to systemically quantify the prevalence of unofficial police detentions and related disruptions in ART and OST prescription among HIV-infected individuals in Ukraine. Importantly, over half of participants reported at least one detention since release from prison, which is consistent with prior findings of widespread detention and harassment of vulnerable groups associated with HIV risk, particularly PWID (Jürgens et al., 2010; 2011; Schleifer, 2009; Spicer et al., 2011). Moreover, the mean rate of detention among this group exceeded 9 episodes per person-year, suggesting the practice is not only prevalent but also recurrent, ultimately leading to disruptions in essential healthcare.

The finding that nearly three quarters of respondents detained while prescribed ART had experienced at least one interruption longer than 24 hours is consistent with prior findings of routine medication interruption during incarceration (Wolfe et al., 2010) and of associations between detention or other police interdiction efforts and ART non-adherence and discontinuation, or non-persistence (Bae et al., 2011), in Ukraine (Mimiaga et al., 2010) and elsewhere (Clements-Nolle et al., 2008; Kerr et al., 2005; Small et al., 2009). Considering that even short ART interruptions are linked with the development of drug resistance (Oyugi et al., 2007) and poor virologic outcomes (Liu et al., 2006; Malta et al., 2010), this finding is extremely troubling, particularly given the frequency of detention observed in our study.

Among those detained while on OST, over two-thirds experienced an interruption exceeding 24 hours. While disturbing, this finding is not surprising; though approved for use in Ukrainian pre-trial detention settings in 2012 (but still not provided), OST was not available in any prison or detention setting at the time of this study, meaning any detention >24h would presumably have involved missing OST doses. The significant HIV-related benefits that OST confers on this high-risk population are threatened by such interruptions. Retention in community-based OST programs is associated with improved HIV outcomes (Altice et al., 2011; Roux et al., 2009), moderated risk behavior and, perhaps most importantly, reduced HIV incidence (Bruce, 2009; Metzger et al., 2010). Similar results are documented in criminal justice settings (Hedrich et al., 2012; Jürgens et al., 2009) and after release to the community (Springer et al., 2012). Disruption of daily OST is associated with decreased long-term treatment retention, relapse to drug injection, higher rates of HCV seroconversion, and increased likelihood of incarceration (Hedrich et al., 2012). Moreover, prolonged OST lapses may result in reduced tolerance to opioids and resultant subsequent overdose, which contributes to a high incidence of post-release death among individuals who use opioids (Binswanger and Wortzel, 2009) when OST is not provided (Kinlock et al., 2009).

Our analysis, while limited by a small sample size, indicated that receiving ART post-release was an independent correlate of detention. There are limited data to help interpret this potentially critical finding (or the similar bivariate association observed between access

to OST and detention). We surmise, however, that at least some of those detained may have been detained en route to or from an ART or OST site, evidenced by the large number of OST recipients reporting police harassment while accessing services. Moreover, qualitative studies have implicated police targeting individuals prescribed ART and OST while accessing treatment (Mimiaga et al., 2010; Schleifer, 2009). The need to physically access services and the requirement that individuals receiving either service “register” with authorities both dramatically increase the visibility of PWID who may otherwise remain hidden from authorities (Izenberg and Altice, 2010). Additionally, provider stigmatization of PWID, who constitute the majority of HIV-infected individuals, means PWID cannot necessarily expect their treatment providers to protect them (Cooper et al., 2005; Wolfe et al., 2010). While our data allow us only to speculate on causal mechanisms, there is reason to believe that accessing ART and OST may in effect be a risk factor for targeted detention, which in turn raises a substantial barrier for those most in need of these services. Further research into this association is warranted.

Another strong correlation identified by our model was that of high-risk injection practices and unofficial detentions. Without drawing any definitive conclusions, at least two possible mechanisms linking detention and high-risk injection are plausible. The first is that profound withdrawal from opioids during detention leads to desperation and disregard for safe injecting practices. This mechanism is suggested by prior research demonstrating increased high-risk injection behavior following prison terms (Wood et al., 2005). The second is that fear of future detention (and confiscation of syringes) among having experienced detentions may encourage use of high-risk venues like shooting galleries where contaminated injection equipment and drugs are readily available and easily dispensable without risk of re-arrest. Both mechanisms have been observed in prior research (Bastos and Strathdee, 2000; Rhodes et al., 2003; 2005; Schleifer, 2009; Spicer et al., 2011; Strathdee et al., 2010; Werb et al., 2008). Irrespective of the forces at play, this is clearly a high-risk group that merits access to risk reduction services such as OST and/or adequate amounts of sterile injection equipment.

Though we found that male gender was highly correlated with being detained, this finding should be interpreted with caution due to the small number of women surveyed. Despite this, detained and imprisoned populations are disproportionately male (Hudson et al., 2011), including those with HIV (Stein et al., 2012), and it is possible that men are more frequently targeted by Ukrainian police. The finding that fewer cumulative lifetime months in prison were associated with detention could be that explained by the fact that PWID with more prison experience are more “street-wise,” having larger social networks and easier access to drugs thus less visibility to police. This explanation is admittedly speculative, however, and further research will be required to understand this better.

4.2 Limitations

This study has several important limitations. First, data were obtained by self-report leading to possible underreporting of sensitive measures including detention; however, observed rates of detention were high, suggesting this to be unlikely. Furthermore, limited police cooperation makes it difficult to imagine a better immediately available approach. Second, respondents had been out of prison for varying lengths of time, raising the possibility that the outcome was confounded by risk timeframe. We controlled for this bias by establishing no bivariate relationship between time since prison-release and detention and retaining this in our final model. Third, all data were derived from structured interviews, limiting the detail with which we were able to characterize individual detentions; thus we cannot describe the durations of and reasons for detentions and for medication interruptions we can only determine that they exceeded 24 hours. This study, nonetheless, is one of the first to quantitatively characterize detention and key related adverse events in a population that can profoundly and negatively be impacted by detentions. Finally, due to resource limitations

and a hidden target population, we recruited a convenience sample from two major Ukrainian cities in lieu of a random representative sample. While this limits generalizability, our findings provide a substantial first look at this complex problem, and our sample size of 97 HIV-infected, recently released prisoners represents a substantial portion of this population and will be useful in guiding further research.

4.3 Directions for future research

Given the limitations described above, future research efforts might focus on a more detailed understanding of the mechanisms by which medication interruptions and other adverse events occur, better characterization of the most frequently targeted populations, and gathering of additional data such as detention length, much of which could be accomplished through a longitudinal design. Perhaps more important, however, is the building of better partnerships between police and public health authorities. Recent programs of this sort in Southeast Asia show promise for better these groups in combating HIV (Beyrer, 2012; Chheng et al., 2012; Jardine et al., 2012; Sharma and Chatterjee, 2012). While the potential success of similar efforts in Ukraine remains unknown, these approaches are promising and should be piloted for study and eventual large-scale implementation in the region.

4.4 Conclusions

The first decade of this century saw a substantial increase in HIV incidence in Eastern Europe and Central Asia even while the rest of the world saw declines (UNAIDS, 2010). As opposed to many regions where reductions in HIV occurred, the epidemic in this region has been largely driven by PWID. Among this group, HIV prevention has been undermined by a harsh, punitive political and social climate that features frequent and long-term imprisonment, limited harm-reduction services, extreme stigmatization, and widespread police abuse toward PWID (Atun and Olynik, 2008; Barcal et al., 2005; Cohen, 2010; UNAIDS, 2010; Wolfe et al., 2010; Wolfe and Cohen, 2010). While our data are derived from a subset of recently imprisoned HIV-infected individuals in Ukraine, there is little reason to think the situation is much different for other HIV-infected individuals, particularly PWID. These data advance earlier investigations by providing quantitative documentation of frequent, systematic police detention of HIV-infected PWID in which ART and OST are routinely interrupted, injecting equipment is frequently confiscated, and withdrawal is commonplace. All of these events contribute significantly to the 'HIV risk-environment', inhibiting access and adherence to free ART and OST and thus undermining these services' promised benefits while potentially contributing to drug resistance, encouraging risky behavior, and further marginalizing an extremely vulnerable population. If Ukraine and its regional neighbors are to successfully control a rapidly growing HIV epidemic, the agendas of law enforcement and public health must be better coordinated, widespread police detention and intimidation of high-risk individuals should not be tolerated, and both ART and OST, where indicated, must be guaranteed to those detained for any reason and for any duration.

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Table 1

Comparison of Detained and Not Detained Participant Characteristics (N=94)

Characteristic	Valid N	Total n (%)	Not Detained n (%)	Detained n (%)	p-value
Recruited in Kyiv	94	45 (47.9)	11 (28.2)	34 (61.8)	0.001
Mean days since release (SD)	92	171.4 (69.2)	166.3 (70.8)	175.1 (63.4)	0.550
Mean duration of last prison term – months (SD)	92	49.6 (27.1)	48.26 (27.9)	50.7 (26.7)	0.540
Mean age (SD)	94	35.7 (8.1)	37.6 (8.07)	34.3 (7.86)	0.053
Male gender	94	83 (88.3)	30 (76.9)	53 (96.4)	0.004
In a stable relationship	90	58 (64.4)	25 (67.6)	33 (62.3)	0.605
Secondary education or higher complete	94	60 (63.8)	27 (69.2)	33 (60.0)	0.359
Stable Housing	93	78 (83.9)	36 (92.3)	42 (77.8)	0.060
Income above poverty	93	30 (31.9)	8 (20.5)	22 (40.0)	0.046
Mean lifetime detentions not resulting in sentencing to prison (SD)	89	11.0 (11.7)	9.6 (13.08)	12.1 (10.6)	0.024
Mean lifetime prison sentences (SD)	94	2.9 (2.0)	3.05 (2.1)	2.87 (1.9)	0.984
Mean lifetime months in prison (SD)	90	91.3 (78.6)	116.8 (93.2)	73.8 (61.5)	0.035
Mean age of first incarceration (SD)	94	21.1 (6.3)	22.36 (6.9)	20.3 (5.7)	0.134
Screened positive for prior hazardous drinking	86	53 (61.6)	27 (73.0)	26 (53.0)	0.060
Screened positive for prior alcohol dependence	86	16 (18.6)	8 (21.6)	8 (16.3)	0.532
High drug abuse severity	94	77 (81.9)	29 (74.4)	48 (87.3)	0.109
Screened positive for opioid dependence	94	79 (84.0)	30 (75.9)	49 (89.1)	0.112
Current illegal opioid use	92	48 (49.5)	17 (45.9)	31 (58.3)	0.240
Current stimulant use	80	16 (20.0)	5 (14.3)	11 (24.4)	0.260
Current alcohol use	86	61 (70.9)	27 (71.1)	34 (70.8)	0.982
Current poly-substance use	81	49 (49.4)	15 (40.5)	25 (56.8)	0.144
Ever injected drugs	94	91 (96.8)	36 (92.3)	55 (100.0)	0.068
Current drug injection	92	53 (57.6)	16 (42.1)	37 (68.4)	0.012
Mean total injections last 30 days	53	13.5 (8.9)	11.3 (9.8)	14.4 (8.4)	--

Characteristic	Valid N	Total n (%)	Not Detained n (%)	Detained n (%)	p- value
Mean injections per injection day	51	1.8 (2.1)	1.6 (0.9)	2.4 (0.4)	--
Any current high-risk injection	92	34 (37.0)	6 (15.8)	28 (51.9)	<0.001
Current injection with used syringe	91	13 (14.3)	1 (2.6)	12 (22.6)	0.007
Current common liquid drug injection	92	32 (24.8)	6 (15.8)	26 (48.1)	0.002
Current unprotected sexual intercourse	92	22 (23.9)	9 (23.1)	13 (24.5)	0.872
Mean episodes in past 30 days	22	1.8 (1.6)	1.3 (.7)	2.2 (1.9)	--
Moderate to severe symptoms of depression	94	53 (56.4)	22 (56.4)	31 (56.4)	0.996
Mean Berger Scale global stigma score (SD)	91	110.3 (13.2)	110.0 (17.1)	110.5 (9.8)	0.721
Received HIV care post-release	85	61 (71.8)	25 (67.6)	36 (75.0)	0.450
Received ART post-release	89	26 (29.2)	6 (15.8)	20 (39.2)	0.016
Received OST post-release	88	28 (31.8)	6 (15.8)	22 (44.0)	0.005

Legend: SD=standard deviation; ART=antiretroviral therapy; OST=opioid substitution therapy

Table 2

Experiences Associated with Police Detention (N=94)

Detentions and Related Events	Valid N	n (%)
Detained (without charges) by Police After Release from Prison	94	55 (58.5)
Mean Number of Post-Release Detentions (among those detained)	55	4.3
Mean Annual Detention Rate Ratio (among those detained)	55	9.4
Needles or syringes confiscated during a detention (among those carrying needles or syringes at time of detention)	23	18 (78.3)
Experienced withdrawal during a detention (among those using drugs at time of detention)	49	34 (69.4)
ART interrupted during detention (among those detained while on therapy)	27	19 (70.4)
OST interrupted during detention (among those detained while on therapy)	28	19 (67.9)
Had restricted access to ART or OST used as a means to extract a confession during a detention (among those on ART or OST)	54	31 (57.4)
Detained en route to or from an OST site since release from prison (among those on OST since release)	27	23 (85.2)

Legend: ART=antiretroviral therapy; OST=opioid substitution therapy

Table 3

Bivariate and multivariate correlates associated with police detention (N=94)

Parameter	Bivariate Regression			Multivariate Regression		
	UOR	95% CI	p-value	AOR	95% CI	p-value
Number of days since prison release	1.00	1.00 – 1.01	0.548	1.01	1.00 – 1.01	0.202
Male gender	7.95	1.61 – 39.23	0.011	10.88	1.78 – 66.57	0.010
Cumulative lifetime months in prison	0.99	0.99 – 0.99	0.015	0.99	0.99 – 0.99	0.031
Current high-risk injection (needle sharing or common container use past 30 days)	5.74	2.07 – 15.97	0.001	5.03	1.46 – 17.38	0.011
Prescribed antiretroviral therapy post-release	3.44	1.22 – 9.71	0.020	4.98	1.28 – 19.40	0.021
Corrected AIC = 94.37						

Legend: UOR=unadjusted odds ratio; AOR=adjusted odds ratio; CI=confidence interval; AIC=Akaike Information Criterion