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Police Education as a Component of National HIV Response: Lessons from Kyrgyzstan

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Abstract

Background—Recognition of the police department's role in shaping HIV spread and prevention has generated interest in educational interventions targeting law enforcement. With input from civil society, trainings covering HIV prevention science, policy, and occupational safety were developed and delivered to cadets and active-duty police across Kyrgyzstan.

Methods—We administered a multi-site cross-sectional survey of Kyrgyz police to assess whether undergoing HIV trainings was associated with improved legal and public health knowledge, positive attitudes towards public health programs and policies, occupational safety awareness, and intended practices targeting vulnerable groups.

Results—In 313-officer sample, 38% reported undergoing the training. In multivariate analysis, training was associated with being significantly more likely to support referring individuals to harm reduction organizations (aOR 2.21; 95%CI 1.33–3.68), expressing no intent to extrajudicially confiscate syringes (aOR 1.92; 95%CI 1.09–3.39), and better understanding sex worker detention procedure (aOR 2.23; 95%CI 1.19–4.46), although trainee knowledge of policy on routine identification checks for sex workers was significantly lower (aOR 3.0; 95%CI 1.78–5.05). Training was also associated with improved occupational safety knowledge (aOR 3.85; 95%CI 1.66–8.95).

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Contributors

Shumskaya conceived of the research and Beletsky, Thomas, Smelyanskaya and Shumskaya designed the study. Shumskaya supervised data collection. Artamonova conducted statistical analyses, with input from all other authors. Beletsky wrote the first draft of the manuscript. All authors contributed to and have approved the final manuscript.

Conflict of Interest

The authors report no conflict of interest connected to any goods or services described.

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Conclusion—Kyrgyzstan’s experience suggest that police trainings have the potential to improve the integration of policing and public health efforts targeting at-risk groups. Regardless of the legal environment, such structural approaches should be considered elsewhere in Central Asia and beyond. As these initiatives gain acceptance, further research is needed to inform their design and tailoring.

Keywords

Central Asia; Injection drug use; structural interventions; policing; police training; HIV; HIV prevention

1. INTRODUCTION

Situated along the ancient Silk Road linking Europe to Asia, Kyrgyzstan has become an increasingly important transportation corridor for Afghani opium and itinerant labor. This has fuelled epidemics of bloodborne and sexually-transmitted infections (STIs) among people who inject drugs (PWID), sex workers, and migrants. Prevalence of HIV reaches 50 times and 5 times the background rate among PWID and sex workers, respectively; three-quarters of Kyrgyz HIV cases can be directly or indirectly attributed to injection drug use (World Health Organization, 2009).

A legal environment that emphasizes public health over punishment and stigmatization is critical to an effective HIV response (Cohen and Csete, 2006; UNDP, 2012). Relative to its Central Asian neighbors, Kyrgyzstan has fostered such an environment, including decriminalization of small-scale drug possession and rejection of criminal penalties for sex work. Police practices frequently deviate from formal laws because of poor legal and public health knowledge, negative attitudes towards harm reduction, occupational safety concerns, and perverse incentives (Beletsky et al., 2005, 2012b; Burris et al., 2004; Rhodes et al., 2006; Beletsky et al. In press; Beyrer et al., 2002).

The Kyrgyz HIV response includes innovative structural efforts to harmonize police practice with public health. Starting in 2005, AIDS Foundation East West (AFEW) and its partners conducted police trainings. This has included persuading the Republican Police Academy to integrate a 46-hour “Special Course” on harm reduction delivered by civil society and police professionals to future top brass (AIDS Foundation East-West, 2013). At the police high school, ad-hoc shorter modules were delivered to junior officers-in-training. Among active-duty personnel, over 500 police throughout Kyrgyzstan completed 17 educational programs. These efforts built on Instruction (“Prikaz”) 417 — an internal policy directing police to facilitate HIV prevention initiatives (Beletsky et al., 2012b).

Though varied in setting and audience, the trainings shared content components: 1. core public health information on HIV and STIs, 2. law and institutional policy related to sex work and drug use, 3. occupational safety precautions, and 4. contact information for local harm reduction programs. However, none were formally evaluated, which parallels the lack of evaluation of police education by US organizations (Beletsky et al., 2011b). At a time when the need to engage law enforcement in effective HIV response has become increasingly recognized (Law Enforcement and HIV Network, 2013), we are not aware of any study evaluating police trainings outside of US context (Beletsky et al., 2011a; Davis and Beletsky, 2009; Silverman et al., 2012).

In 2010, AFEW mounted a national survey to understand police knowledge, attitudes, and practices related to harm reduction programs across Kyrgyzstan (Beletsky et al., 2012b). This analysis assesses whether having undergone an HIV-prevention training was associated with a set of outcomes conducive to HIV prevention.

2. METHODS

2.1 Study Design

Study methods were detailed elsewhere (Beletsky et al., 2012b). Briefly, a self-administered paper survey of police serving at least one year was distributed in eight diverse, purposefully-selected precincts across Kyrgyzstan. Data were centrally processed by AFEW. The Institutional Review Board at the University of California, San Diego approved the study.

2.2. Study Instrument

Based on Diffusion of Information Theory (Rogers, 1995), items from studies of police attitudes and training (Beletsky et al., 2011a, 2005) the instrument assessed sociodemographics, core knowledge of HIV transmission and prevention (UNAIDS, 2009), attitudes toward public health prevention efforts targeting PWID and sex workers, knowledge and experience of occupational risks and precautions related to bloodborne infections, past and intended practices, and criminal procedure. Knowledge and action items used true/false or multiple-choice options, while attitudinal questions used 4-item Likert scales assessing respondent agreement (strongly agree-strongly disagree).

2.3 Analytical Methods

This analysis focuses on associations between the report of having undergone an HIV prevention training with attitudinal, knowledge, and action variables related to public health policy and practice. Based on training content and previous research (Beletsky et al., 2011a; Davis and Beletsky, 2009; Silverman et al., 2012), we hypothesized that undergoing such training would increase knowledge about HIV risk and prevention programming; legal knowledge, including detention policies; attitudes towards harm reduction programs; and prevalence of actual and intended police practices reflecting public health goals. We assessed sociodemographics (gender, ethnicity, age, years of police service, rank), geographical setting (serving in a municipality vs. town or village), having knowledge of Prikaz 417, or having had recent contact with harm reduction NGOs as potential confounders.

We used SAS software, version 9 (SAS, Cary, North Carolina) to analyze the data. Likert items were dichotomized. The Fisher exact test was used for binary variables, while chi-square test for categorical variables was utilized to stratify samples based on our exposure variable. For continuous variables, Wilcoxon rank-sum tests were used. Bivariate analysis was conducted using simple logistic regression (see Table 1); independent variables significant at the $p < 0.05$ level were included in a multiple logistic regression model (see Table 2).

3. RESULTS

As previously reported (Beletsky et al., 2012b), our study achieved an overall response rate of 64% with 319 completed surveys. This analysis focuses on 313 individuals who responded to the training item. Table 1 illustrates that this sample comprised a diverse group of Kyrgyz police, dominated by relatively mature, experienced, and urban male officers.

Based on standard indicators, respondents exhibited high levels of knowledge about HIV transmission and prevention (median of 7 on a 9-item scale; UNAIDS, 2009). Respondents held positive attitudes toward syringe (63.7%) and condom (72.3%) access. However, support for propositions that police should provide public health prevention information to high-risk groups was substantially lower (41.2%). Respondents were somewhat equivocal

about whether sex worker raids promote public health (60.5%), and exhibited only moderate familiarity with local harm reduction organizations (44%) and contact (19.2%, last 6 months). Just over 38% reported undergoing an HIV training.

Although a small minority (7.4%) reported lifetime needle stick injuries (NSI), concern about contracting disease through NSI was widespread (81.4%). Thirty-five percent of respondents acknowledged alarm that syringe access may increase police occupational risk. Less than 10% reported accurate knowledge of procedures in the case of exposure to blood in the line of duty.

Findings indicate inconsistent levels of legal and policy knowledge: Most respondents (82.6%) agreed that government policies should emphasize public health and social support for marginalized populations, but many incorrectly characterized Kyrgyz law on syringe possession (46%) and sex work (22%). Just over 42% reported knowledge of Prikaz 417. Importantly, more than one-in-four indicated intent to confiscate injection equipment even absent a legal reason to do so.

In bivariate analyses (Table 1), training was significantly associated with serving in an urban setting, better HIV transmission knowledge, and support for the role of police in educating high-risk groups. Trainees were less likely to report occupational NSI and to back the assertion that syringe access increases occupational risk. They also exhibited better legal and policy knowledge; trainings were associated with lower levels of correct knowledge only on the issue of routine sex worker identification. Those who had undergone training were also more likely to report familiarity and interactions with public health organizations.

Table 2 lists the variables that remained significant in the final multivariate model. Our analyses suggest that trainees were more likely (adjusted odds ratio [aOR] 2.21; 95% confidence interval [CI] 1.33–3.68) to agree that members of high risk groups should be referred to harm reduction organizations and were more likely to indicate no intent to confiscate injection equipment without legal cause (aOR 1.92; 95% CI 1.09–3.39). They also demonstrated significantly higher odds of understanding sex work detention procedure (aOR 2.23; 95% CI (1.19–4.46)), but trainee knowledge of policy on requesting sex worker identification was more likely to be incorrect (aOR 3.0; 95% CI (1.78–5.05)). Training was also independently associated with understanding procedures after occupational blood exposure (aOR 3.85; 95% CI (1.66–8.95)).

4. DISCUSSION

Our analyses support the hypotheses that police training facilitates better integration of policing and public health efforts targeting high-risk groups. Evidence that trainees were significantly less likely to intend to confiscate injection equipment charts a distinct potential of police trainings to mitigate the damage caused by extrajudicial and intensive policing (Aitken et al., 2002; Beletsky et al., 2012a; Cooper et al., 2005; Davis et al., 2005; Human Rights Watch, 2003). In particular, Extrajudicial syringe confiscation has been reported by both police and drug users in a range of studies across the world (Beletsky et al., 2005; Booth et al., 2009; Fairbairn et al., 2009; Hammett et al., 2005; Pollini et al., 2008; Rhodes et al., 2006; Strathdee et al., 2010; Werb et al., 2008; Beletsky et al, In press). This practice is now widely understood to cause public health harm because of its established empirical links to HIV risk behaviors like receptive syringe sharing, as well as to actual HIV status (Beletsky et al., 2013; Strathdee et al., 2011).

Trainees were significantly more likely to agree that police should refer at-risk individuals to service programs. Given routine police contact with PWID and sex workers, referrals represent one of the most promising areas of actionable police-public health collaboration

(Beletsky et al., 2011c). Our data suggest, however, that such referrals remain rare even among police who are informed about local harm reduction organizations. To incentivize referrals and other cooperation, AFEW recently developed new police guidelines and established an award for Kyrgyz law enforcement officers who excel in their contribution to HIV prevention, including service referrals (AIDS Foundation East-West, 2013). After evaluation, promising incentive mechanisms must be integrated into any legal, policy and managerial interventions to reform police practices.

Our finding a significant relationship between the training and improved occupational safety knowledge is encouraging. In addition to addressing genuine workplace safety gaps and job-related stress among police, the bundling of occupational safety and community health content in the realm of HIV prevention can help make the training curricula more engaging and acceptable to police audiences (Davis and Beletsky, 2009). Including occupational safety tips and other safety topics in training curricula can incentivize both training participation and uptake.

These trainings produced mixed results in the realm of street-based sex work regulation: respondents were more likely to understand that sex workers should not be detained, but were also less likely to correctly characterize the policy on routine identification checks. Routine identification checks may be a framework for gathering bribes from sex markets, which would explain general police support for the practice; this does not explain, however, why trainees appeared to support it at higher levels.

4.1 Limitations

The study's methodological limitations are addressed elsewhere (Beletsky et al., 2012b). Findings may not be generalizable to all Kyrgyz police, given the non-random sampling. Also, AFEW and its partners conducted a number of training initiatives that contained common curricular elements but varied widely in duration, instructors, and setting. Some contamination may have occurred as training content was disseminated through networks, shifting background levels of police knowledge and introducing the possibility of systematic social desirability bias in attitudinal and intended practice questions.

In Kyrgyzstan as well as elsewhere in Central Asia and beyond, a number of factors perpetuate misalignment between police and public health efforts, making it unlikely that training interventions can sufficiently change police practice. Dysfunctional governance, poor management, low pay, and personnel turnover are compounded by cultural and religious attitudes towards marginalized groups, draconian laws, weak judiciaries, and pervasive corruption. Partnerships with broader human rights and criminal justice reform efforts are critical to the success of structural interventions aiming to shift police practices towards public health goals.

4.2 Conclusion

Increasing recognition of the importance of integration of policing and public health has generated active interest in ways to operationalize collaboration. Educational interventions targeting police have been advanced as a key operational strategy to accomplish this integration (Law Enforcement and HIV Network, 2013). As the number of and support for such educational initiatives across the world is growing, more research is needed to inform benchmarks, design, and evaluation. In particular, additional research is needed to parse out comparative effectiveness of law enforcement training interventions and to evaluate the role of policy, oversight mechanisms, incentives, and other wraparound interventions to encourage sustained behavior change advanced by the trainings.

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References

- AIDS Foundation East-West. [Accessed on 5/9/2013] Friendly Policemen for HIV Prevention Programmes. 2013. http://www.afew.org/cetest-firstpage/all-afew-projects/project/?tx_afewregions_pi1%5Bproject%5D=239&cHash=8bdfaa0c29d6faa15e58296eec66a23e
- Aitken C, Moore D, Higgs P, Kelsall J, Kerger M. The impact of a police crackdown on a street drug scene: evidence from the street. *Intl J Drug Policy*. 2002; 13:189–198.
- Beletsky L, Agrawal A, Moreau B, Kumar P, Weiss-Laxer N, Heimer R. Police training to align law enforcement and HIV prevention: preliminary evidence from the field. *Am J Public Health*. 2011a; 101:2012–2015. [PubMed: 21940924]
- Beletsky L, Grau LE, White E, Bowman S, Heimer R. Content, correlates and predictors of police training initiatives by syringe exchange programs. *Drug Alcohol Depend*. 2011b; 19:145–149. [PubMed: 21705159]
- Beletsky L, Grau LE, White E, Bowman S, Heimer R. The roles of law, client race, and program visibility in shaping police interference with the operation of US syringe exchange programs. *Addiction*. 2011c; 106:357–365. [PubMed: 21054615]
- Beletsky L, Lozada R, Gaines T, Abramovitz DA, Staines-Orozco H, Vera A, Rangel G, Arredondo J, Strathdee SA. Syringe confiscation as an HIV risk factor: the public health implications of arbitrary policing in Tijuana and Ciudad Juarez, Mexico. *J Urban Health*. 2013; 90:284–298. [PubMed: 22806453]
- Beletsky L, Macalino G, Burris S. Attitudes of police officers towards syringe access, occupational needle-sticks, and drug use: a qualitative study of one city police department in the United States. *Intl J Drug Policy*. 2005; 16:267–274.
- Beletsky L, Martinez G, Gaines T, Nguyen L, Lozada R, Rangel G, Vera A, Mccauley HL, Sorensen A, Strathdee SA. Mexico's northern border conflict: collateral damage to health and human rights of vulnerable groups. *Pan Am J Public Health*. 2012a; 31:403–410.
- Beletsky L, Thomas R, Smelyanskaya M, Artamonova I, Shumskaya N, Dooronbekova A, Mukambetov A, Doyle H, Tolson R. Policy reform to shift the health and human rights environment for vulnerable groups: the case of Kyrgyzstan's instruction 417. *Health Hum Rights J*. 2012b; 14:e1–15.
- Beletsky L, Heller D, Jenness S, Neaigus A, Gelpi-Acostae C, Hagan H. Syringe access, syringe sharing, and police encounters among people who inject drugs in New York City: a community-level perspective. *Intl J Drug Policy*. (In press).
- Beyer L, Crofts N, Reid G. Drug offending and criminal justice responses: practitioners' perspectives. *Intl J Drug Policy*. 2002; 13:199–207.
- Booth RE, Lehman WEK, Dvoryak S, Brewster JT, Sinityna L. Interventions with injection drug users in Ukraine. *Addiction*. 2009; 104:1864–1873. [PubMed: 19681800]
- Burris S, Blankenship KM, Donoghoe M, Sherman S, Vernick J, Case P, Lazzarini Z, Koester S. Addressing the "risk environment" for injection drug users: the mysterious case of the missing cop. *Milbank Q*. 2004; 82:125–126. [PubMed: 15016246]

- Cohen J, Csete J. As strong as the weakest pillar: harm reduction, law enforcement and human rights. *Intl J Drug Policy*. 2006; 17:101–103.
- Cooper H, Moore L, Gruskin S, Krieger N. The impact of a police drug crackdown on drug injectors' ability to practice harm reduction: a qualitative study. *Soc Sci Med*. 2005; 61:673–684. [PubMed: 15899325]
- Davis C, Beletsky L. Bundling occupational safety with harm reduction information as a feasible method for improving police receptiveness to syringe access programs: evidence from three U.S. cities. *Harm Reduct J*. 2009; 6:1–18. [PubMed: 19138414]
- Davis C, Burris S, Metzger D, Becher J, Lynch K. Effects of an intensive street-level police intervention on syringe exchange program utilization: Philadelphia, Pennsylvania. *Am J Public Health*. 2005; 95:233–236. [PubMed: 15671455]
- Fairbairn N, Kaplan K, Hayashi K, Suwannawong P, Lai C, Wood E, Kerr T. Reports of evidence planting by police among a community-based sample of injection drug users in Bangkok, Thailand. *BMC Intl Health Hum Rights*. 2009; 9:24.
- Hammett T, Bartlett N, Chen Y, Ngu D, Cuong DD, Phuong NM, Tho NH, Van LK, Liu W, Donghua M, Shaomi X, Chen H, Quyen HN, Broadhead R, Jarlais DD. Law enforcement influences on HIV prevention for injection drug users: observations from a cross-border project in China and Vietnam. *Intl J Drug Policy*. 2005; 16:235–245.
- Human Rights Watch. *Abusing the User: Police Misconduct, Harm Reduction and HIV/AIDS in Vancouver*. Human Rights Watch; New York: 2003.
- Law Enforcement and HIV Network. [accessed on 5/9/2013] Law Enforcement Statement of Support for Harm Reduction launched at UNCCPCJ. 2013. <http://www.leahn.org/update-ipag-at-united-nations-commission-on-crime-prevention-and-criminal-justice/>
- Pollini RA, Brouwer KC, Lozada RM, Ramos R, Carlos MFC, Magis-Rodriguez, Case P, Burris S, Simon MP, Frost DW, Palinkas LA, Miller C, Strathdee SA. Syringe possession arrests are associated with receptive syringe sharing in two Mexico-US border cities. *Addiction*. 2008; 103:101–108. [PubMed: 18028520]
- Rhodes T, Platt L, Sarang A, Vlasov A, Mikhailova L, Monaghan G. Street policing, injecting drug use and harm reduction in a Russian city: a qualitative study of police perspectives. *J Urban Health*. 2006; 83:911–925. [PubMed: 16855880]
- Rogers, E. *Diffusion of Innovations*. City Publisher; New York: 1995.
- Silverman B, Davis C, Graff J, Bhatti U, Beletsky L. Harmonizing disease prevention and police practice in the implementation of HIV prevention programs: up-stream strategies from Wilmington, Delaware. *Harm Reduct J*. 2012; 9:1–15. [PubMed: 22208773]
- Strathdee SA, Hallett TB, Bobrova N, Rhodes T, Booth R, Abdool RCH. HIV and the risk environment among people who inject drugs: past, present, and projections for the future. *Lancet*. 2010; 376:268–284. [PubMed: 20650523]
- Strathdee SA, Lozada R, Martinez G, Vera A, Rusch M, Nguyen L, Pollini RA, Uribe-Salas F, Beletsky L, Patterson TL. Social and structural factors associated with HIV infection among female sex workers who inject drugs in the Mexico-US border region. *PLoS One*. 2011;6.
- UNAIDS. *Monitoring the Declaration of Commitment on HIV/AIDS*. World Health Organization; Geneva, Switzerland: 2009. Guidelines on Construction of Core Indicators, 2010 Reporting.
- UNDP. *Global Commission on HIV/AIDS and the Law*. UNDP; New York: 2012. Risks, Rights and Health.
- Werb D, Wood E, Small W, Strathdee S, Li K, Montaner J, Kerr T. Effects of police confiscation of illicit drugs and syringes among injection drug users in Vancouver. *Intl J Drug Policy*. 2008; 19:332–338.
- World Health Organization. *Joint United Nations Programme on HIV/AIDS*. Geneva: 2009. AIDS Epidemic Update: 2009.

Table 1
Descriptive statistics and unadjusted odds ratios for factors associated with completing HIV training, Kyrgyz police (n=313)

Variable	Category of Interest	Completed Training n=119	Did not Complete Training n=194	Total N=313	Unadjusted Odds Ratio	95% Confidence Interval
Sociodemographics						
Age	> 30 y.o.	55 (46.6%)	90 (46.6%)	145 (46.6%)	1.00	(0.63–1.58)
Sex	Male	109 (91.6%)	180 (93.3%)	289 (92.6%)	0.79	(0.33–1.86)
Rank	Cadet/private	27 (22.7%)	37 (19.1%)	64 (20.4%)	Ref	
	Officer	92 (77.3%)	157 (80.9%)	249 (79.6%)	0.80	(0.46–1.40)
Geographical setting where serving	Urban	96 (81.4%)	101 (52.1%)	197 (63.1%)	Ref	
	Semi rural/rural	22 (18.6%)	93 (47.9%)	115 (36.9%)	0.25	(0.14–0.43)
Years in policing	> 10 yrs.	63 (54.3%)	108 (56.0%)	171 (55.3%)	0.94	(0.59–1.49)
Graduate of the National Police Academy	Yes	44 (37.3%)	54 (28.1%)	98 (31.6%)	1.52	(0.93–2.48)
HIV knowledge, attitudes and experience						
UNGASS HIV Transmission Knowledge Scale	Median (IQR)	8 (7–9)	7 (6–8)	7 (6–8)	1.39	(1.16–1.65)
Attitude on syringe distribution as a public health measure	Positive	78 (65.5%)	120 (62.5%)	198 (63.7%)	1.14	(0.71–1.84)
Attitude on condom distribution as a public health measure	Positive	85 (72.0%)	139 (72.4%)	224 (72.3%)	0.98	(0.59–1.64)
Attitude on raids against SWs as a public health measure	Negative	64 (53.8%)	124 (64.6%)	188 (60.5%)	0.64	(0.40–1.02)
Attitude on police educating at-risk groups about HIV risk reduction	Positive	67 (56.3%)	61 (31.8%)	128 (41.2%)	2.77	(1.72–4.44)
Familiar with organizations serving at-risk groups in locale Attitude on police referring at-risk groups to HIV prevention service organizations	Positive Yes	28 78 (23.5%) (68.4%)	34 57 (29.5%) (17.6%)	135 62 (19.9%) (44.0%)	1.44 5.17	(0.82–2.53) (3.13–8.54)
Met with staff from organizations serving at-risk groups (last 6 mo.)	Yes	45 (39.5%)	14 (7.2%)	59 (19.2%)	8.38	(4.33–16.23)
Occupational safety knowledge, attitudes and experience						
Has experienced occupational NSI (lifetime)	Yes	3 (2.5%)	20 (10.4%)	23 (7.4%)	0.22	(0.07–0.77)

Variable	Category of Interest	Completed Training n=119	Did not Complete Training n=194	Total N=313	Unadjusted Odds Ratio	95% Confidence Interval
Concern about contracting disease from occupational NSI	Yes	93 (80.9%)	157 (81.8%)	250 (81.4%)	1.06	(0.59–1.92)
Syringe access for PWID increases risk of occupational NSI	Disagree	86 (72.3%)	116 (60.4%)	202 (65.0%)	1.71	(1.04–2.80)
Knowledge workplace safety procedures, blood exposure	Correct	19 (16.0%)	12 (6.2%)	31 (9.9%)	2.88	(1.34–6.18)
Legal and policy knowledge						
Knowledge of law on possession of injecting equipment	Correct	61 (52.1%)	107 (55.4%)	168 (54.2%)	0.88	(0.55–1.39)
Knowledge of Instruction 417 on HIV Prevention	Correct	62 (52.1%)	70 (36.5%)	132 (42.4%)	1.90	(1.19–3.02)
Policy should emphasize support, prevention for at-risk groups	Agree	108 (90.8%)	149 (77.6%)	257 (82.6%)	2.83	(1.40–5.75)
Policy is to check SW identification when encounter on street	Disagree	60 (50.4%)	143 (74.1%)	203 (65.1%)	0.36	(0.22–0.58)
Policy is to detain SW when encounter on street	Disagree	103 (86.6%)	142 (73.6%)	245 (78.5%)	1.87	(1.11–3.17)
Would confiscate syringes from PWUDs w/o formal charges/arrest	Yes	41 (34.7%)	39 (20.4%)	80 (25.9%)	2.08	(1.24–3.48)

Table 2

Multivariate model

Variable	Adjusted Odds Ratios	95% Wald Confidence Interval
Police should refer PWID/SW to HIV prevention services	2.21	(1.33–3.68)
Would not confiscate syringes from PWID w/o formal charges/arrest	1.92	(1.09–3.39)
Police should <i>not</i> detain SW when encounter on street	2.23	(1.19–4.46)
Police should check SW identification when encounter on street	3.0	(1.78–5.05)
Knowledge workplace safety procedures, blood exposure	3.85	(1.66–8.95)