

Impact of SHIELD Police Training on Knowledge of Syringe Possession Laws and Related Arrests in Tijuana, Mexico

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See also Kapadia, p. 826.

Between 2015 and 2018, we provided training for 1806 municipal police officers in Tijuana, Mexico, in an effort to improve their knowledge and behaviors related to HIV and injection drug use. Correct knowledge of syringe possession laws improved from 56% before training to 94% after training and was sustained at 24 months (75%). Knowledge improvement was associated with decreases in arrests for syringe possession over time (adjusted odds ratio [AOR] = 0.87; 95% confidence interval [CI] = 0.85, 0.90). Officers with correct knowledge had significantly lower odds of reporting arrests (AOR = 0.63; 95% CI = 0.44, 0.89). Training was associated with sustained improvements in knowledge and practices that advance public health. (*Am J Public Health*. 2022;112(6):860–864. <https://doi.org/10.2105/AJPH.2021.306702>)

Policies criminalizing drugs or syringes and aggressive enforcement practices frustrate efforts to reduce HIV and drug-related harms among people who inject drugs (PWID).¹ Police tactics such as syringe confiscation and arrests for syringe possession are associated with riskier syringe sharing practices and reduced help seeking from harm reduction services.² Where syringe possession has been decriminalized (e.g., Mexico), arrests for possession may persist despite formal legal changes.³ Discordance between policies and local enforcement practices may be due in part to inadequate police knowledge of drug and syringe possession laws.⁴

INTERVENTION

We implemented the Tijuana, Mexico, SHIELD (Safety and Health Integration

in the Enforcement of Laws on Drugs) training program to address the occupational hazards of drug law enforcement and the impact of harmful policing on the health of PWID. This occupational safety training program for police personnel focused on needlestick injuries while simultaneously addressing police knowledge, attitudes, and behaviors that may affect health and HIV risk among PWID.⁵

The SHIELD program was a binational, interdisciplinary collaboration between the University of California, San Diego; Universidad Xochicalco; and the Tijuana Municipal Police Department. Curricula and instrumentation were adapted from previous training,⁶ piloted within the academy, and modified for cultural appropriateness by key stakeholders. Training covered (1) basic epidemiology and prevention of needle

stick injuries and infectious disease sequelae, (2) legal provisions under Mexican law related to drug and syringe possession,³ and (3) addiction science and evidence-based harm reduction strategies.

PLACE AND TIME

As a major border and drug trafficking node, Tijuana is characterized by multiple interacting epidemics of injection drug use, HIV, and harmful policing practices that contravene public health.⁷ During routine or coordinated police operations, aggressive tactics such as arrests for syringe possession are a tool frequently deployed against PWID.⁸ Between February 2015 and May 2016, 80% of the city's police force (n = 1806) completed the training program in collaboration with the

municipal police academy (Instituto de Capacitación y Adiestramiento Profesional de Tijuana). Trained police instructors administered SHIELD on site as a single daylong session, with 20 to 100 trainees per session ($n = 38$ sessions). Baseline participants were eligible to take part in the longitudinal cohort if they reported having been exposed to syringes in the past six months and were willing to participate in 24 months of follow-up.

PERSONS

Among the baseline sample of 1806 officers, 1594 eligible participants were randomized ($n = 212$ did not meet the eligibility criteria) and 771 were selected for follow-up (Figure A, available as a supplement to the online version of this article at <http://www.ajph.org>). Participants were primarily male (84%), the median age was 38 years (interquartile range [IQR] = 33–43), and the median number of years of law enforcement experience was 11 (IQR = 7–18; Table A, available as a supplement to the online version of this article at <http://www.ajph.org>). Overall, 19% of the participants had less than a high school education, most (88%) had patrol assignments, and 23% were assigned to a high drug use precinct. The majority of participants (64%) reported that they had made syringe possession arrests in the previous 6 months; only 56% knew that syringe possession was legal.

PURPOSE

Training may align policing with public health by closing gaps in legal knowledge.^{5,9} However, no study to our knowledge has longitudinally examined the sustained impact of educational

interventions on drug law enforcement practices that contravene public health. We evaluated whether training that frames harm reduction as beneficial to occupational safety improves knowledge of syringe laws and reduces arrests for syringe possession. We hypothesized that improved knowledge of syringe possession laws would be associated with sustained reductions in arrests for syringe possession. We assessed the training's impact on arrests for syringe possession after accounting for police characteristics, knowledge of syringe laws, and attitudes toward PWID over time following the SHIELD training intervention.

IMPLEMENTATION

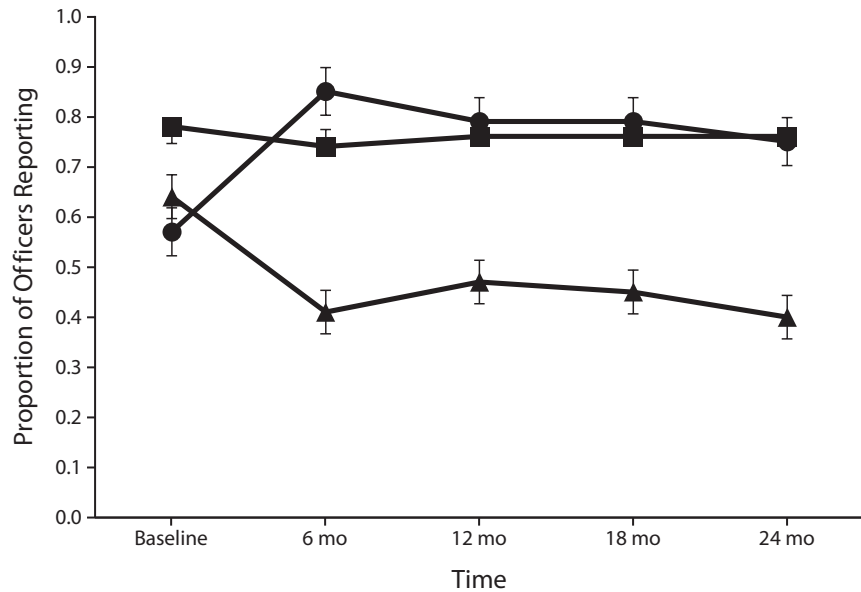
Participants completed self-administered pretraining and posttraining surveys (in Spanish) measuring sociodemographic characteristics, knowledge, attitudes, and policing behaviors related to drug policy and substance use. The outcome (knowledge of syringe laws) was measured via a single question (“Under current Mexican law, how many syringes may a citizen legally possess?”) and coded, in the form of a dichotomous measure, as the correct response (as many as they want) versus all other responses (e.g., none, 1, 7, 10). In addition, we created a dichotomous measure focusing on attitudes toward PWID that was based on three possible responses to the following statement: “Drug users do not deserve to be treated as people” (“strongly agree”/“agree” vs “disagree”; the first 2 responses were combined). The dependent variable (arrests for syringe possession) was measured via a single question (“How often did you arrest someone for syringe possession in the previous 6 months?”) and codified as

always/sometimes/rarely versus never. All participants were remunerated \$20. Data were deidentified prior to the analysis.

EVALUATION

After exclusion of participants with missing data ($n = 14$) and those who were lost to follow-up ($n = 64$), our sample consisted of 693 officers (3523 total observations). Correct knowledge of syringe laws among officers increased from 56% before training to 94% after training (Figure B, available as a supplement to the online version of this article at <http://www.ajph.org>), with significant sustained improvements at six months (85%) and 24 months (75%; Figure 1). The percentage of officers reporting syringe possession arrests decreased from 64% at baseline to 41% at 6 months ($P < .001$), with no significant decrease during the subsequent follow-up visits. Officers reporting possession arrests were consistently more likely to have incorrect knowledge of syringe laws, to have negative attitudes toward PWID, to be male, and to work in areas with high drug use.

For each 6-month interval subsequent to the baseline visit, there was a 13% reduction in the odds of reporting arrests for syringe possession (adjusted odds ratio [AOR] = 0.87; 95% confidence interval [CI] = 0.85, 0.90; Table 1). Officers with correct knowledge of syringe laws had 37% lower odds of reporting arrests for syringe possession (AOR = 0.63; 95% CI = 0.44, 0.89) after control for follow-up visit, sex, patrol assignment, and precinct location. Female officers had 35% lower odds of reporting arrests for syringe possession (AOR = 0.65; 95% CI = 0.35, 0.87), whereas officers in high drug use



	Baseline	6 Months	12 Months	18 Months	24 Months
▲ Arrest for syringe possession (previous 6 months)	0.64	0.41	0.47	0.45	0.40
● Correct knowledge of syringe law	0.57	0.85	0.79	0.79	0.75
■ Positive attitude towards PWID	0.78	0.74	0.76	0.76	0.76

FIGURE 1— Trends in Arrests for Syringe Possession, Knowledge of Syringe Laws, and Attitudes Toward People Who Inject Drugs (PWID) Among Municipal Police Officers (n = 693) in Tijuana, Mexico, 2015–2018

TABLE 1— Logistic Regression Model of Self-Reported Arrests for Syringe Possession Among Municipal Police After SHIELD Training: Tijuana, Mexico, 2015–2018

Variable	OR (95% CI)	
	Unadjusted Model	Adjusted Model
Time (visit)	0.86 (0.83, 0.88)	0.87 (0.85, 0.90)
Female sex (vs male)	0.49 (0.32, 0.75)	0.56 (0.35, 0.87)
Age, y	1.02 (0.99, 1.03)	
Less than high school education (vs more)	1.11 (0.97, 1.26)	
Work experience (years)	0.89 (0.82, 0.97)	
Correct knowledge of syringe laws (vs incorrect)	0.51 (0.44, 0.59)	0.63 (0.44, 0.89)
Positive attitudes toward PWID (vs negative)	1.33 (1.14, 1.55)	
Patrol assignment (vs administrative duty)	3.01 (2.02, 4.48)	6.71 (3.83, 11.76)
High drug use precinct (vs low)	1.90 (1.57, 2.31)	2.42 (1.56, 3.77)

Note. CI = confidence interval; OR = odds ratio; PWID = people who inject drugs; SHIELD = Safety and Health Integration in the Enforcement of Laws on Drugs program. Generalized estimating equations with an exchangeable correlation structure were used to conduct logistic regression modeling. Arrests for syringe possession refer to the previous 6 months. The sample size was 693 (3523 observations).

precincts had greater than double the odds of reporting arrests (AOR = 2.42; 95% CI = 1.56, 3.77) than officers assigned elsewhere.

ADVERSE EFFECTS

We are not aware of any adverse effects from this intervention other than the discomfort of responding to sensitive topics on the self-administered surveys.

SUSTAINABILITY

Through leveraging of existing infrastructure within the Tijuana police academy and a train the trainers strategy for implementing the curriculum, 80% of the police force received training within 15 months in concert with routine training activities. Furthermore, most officers were willing to participate longitudinally, and the retention rate was 91.6% through 24 months. We credit this success to locally trained and experienced field staff in Tijuana who used a rigorous yet flexible data collection strategy with regular contact and follow-up visits at convenient locations for officers, including in the field and in private settings.

The SHIELD model provides a sustainable research and practice infrastructure given the ability to collect various types of data with flexibility. For example, numerous in-depth interviews were conducted, and a supplemental quantitative survey on referral preferences was appended to the 24-month follow-up questionnaire. With evolving safety concerns among police personnel, the SHIELD training is sustainable in that the occupational safety component can be easily adapted to address emerging concerns. For example, the needlestick injury module can be

supplemented with relevant instruction on fentanyl exposure.¹⁰ However, SHIELD's adoption and sustainability depend on political will and the policing priorities of local administrations.

PUBLIC HEALTH SIGNIFICANCE

Our results highlight the link between officers' knowledge of syringe possession laws and related behaviors. SHIELD training was associated with sustained improvements in knowledge of syringe laws and corresponding reductions in the proportion of officers reporting arrests of PWID for syringe possession. Precinct location, patrol assignment, and female sex likely also shape policing in this context and should be accounted for in public health research and practice. Police training that bundles harm reduction and occupational safety content should be considered among core public health interventions to improve the health of PWID in prohibitionist contexts. *AJPH*

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CONTRIBUTORS

P. Baker led all aspects of the data analysis, scientific writing, and article preparation. L. Beletsky and S. A. Strathdee conceptualized the parent study and provided support in analytical interpretation and conceptual framing. R. Garfein, E. Pitpitan, E. Oren, and J. A. Cepeda contributed to analytical interpretation and the editing of the article. All of the authors contributed to the development of the article.

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CONFLICTS OF INTEREST

The authors declare no competing interests.

HUMAN PARTICIPANT PROTECTION

All participants provided informed consent with approved documentation. The study protocol was approved by the institutional review boards of the University of California, San Diego, and Universidad Xochicalco (Tijuana).

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