

TITLE: EVALUATING THE IMPACT AND COST-EFFECTIVENESS OF A NOVEL POLICE EDUCATION PROGRAM ON HIV AND OVERDOSE AMONG PEOPLE WHO INJECT DRUGS IN TIJUANA, MEXICO

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ABSTRACT (296 words, max 300)

Background: Given consistently strong associations between policing encounters/incarceration and injection-related risk behaviors, a 3-hour police education program (“Proyecto Escudo” [Project Shield]) was conducted from February 2015 – May 2016 by the Tijuana Police Academy and Public Safety Ministry to align policing with evidence-based public health principles. We evaluated the impact and cost-effectiveness of “Escudo” on HIV and overdose among people who inject drugs (PWID).

Methods: Using log-binomial regression in a cohort of PWID in Tijuana, we assessed temporal trends in any incarceration (past 6 months) in the periods before (March 2011 – March 2015), during (March 2015-March 2016), and after Escudo implementation (March 2016-November 2018). We developed a dynamic model, which simulated HIV transmission and fatal overdose, calibrated to local HIV prevalence, incidence, and incarceration. We assessed the cost-effectiveness of Escudo compared to a counterfactual of no Escudo, assuming a 2-year intervention effect and 50-year time horizon. Costs (2022 USD) were included for the intervention, antiretroviral therapy, and incarceration. Health outcomes were tracked in disability-adjusted life years (DALYs). The mean incremental cost-effectiveness ratio (ICER) was evaluated against a willingness-to-pay threshold of per capita GDP (\$8,346).

Results: Recent incarceration declined by 68% in the post-Escudo period (RR 0.32, 95%CI: 0.26-0.40) compared to pre-Escudo, consistent with police self-reports of reduced drug-related arrests over the same period. Over the two-year period during Escudo follow-up 1.7% [95% uncertainty interval (I): 0.4-2.4%] of new HIV cases and 9.8% [95%I: 3.3-21.4%] of fatal overdoses among PWID were averted. The intervention costed USD\$149/officer trained and was cost-effective (mean ICER \$6,154/DALY averted), assuming the decline in incarceration was attributed to it.

Conclusion: By reducing incarceration, Escudo was a cost-effective strategy that aligned human-rights based policing and public health. It could serve as a model for settings where policing constitutes structural HIV and overdose risk among PWID.

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