Displacement of Canada's largest public illicit drug market in response to a police crackdown

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Abstract

Background: Law enforcement is often used in an effort to reduce the social, community and health-related harms of illicit drug use by injection drug users (IDUs). There are, however, few data on the benefits of such enforcement or on the potential harms. A large-scale police "crackdown" to control illicit drug use in Vancouver's Downtown Eastside provided us with an opportunity to evaluate the effect.

Methods: As part of our ongoing prospective cohort study of IDUs in Vancouver, we examined data collected from 244 IDUs in the 3 months before the police crackdown and from 142 IDUs in the 3 months after the start of the crackdown, on Apr. 7, 2003. All study subjects were active drug users. We also examined external data on needle exchanges and syringe disposal.

Results: The 2 groups of IDUs were statistically similar: they were mainly young (mean age 39 years) and male (63%), and they had injected illicit drugs for 13 years on average. Ethnic background and the proportion homeless were also similar. There were no statistically significant reported differences (all $p > 0.1$) in the street price of heroin, cocaine or "crack" in the 2 periods. In the 3-month periods before and after the crackdown, respectively, the rates of daily heroin injection were 27.9% and 26.8%, daily cocaine injection 28.7% and 27.5%, and daily crack use 59.4% and 60.6% (all $p > 0.1$). The proportions of study subjects receiving methadone treatment, 41.0% and 44.4% ($p = 0.516$), did not differ. However, the proportions reporting a change in where drugs were used, 22.5% and 33.8% ($p < 0.05$), and the proportions reporting a change in the neighbourhood of use because of police presence, 18.1% and 26.8% ($p < 0.05$), increased significantly. Needle-exchange data confirmed that the community levels of drug use were unchanged. Disposal statistics demonstrated that the monthly average number of used syringes found on the streets outside the traditional area of drug use increased from 784 in the 3 months before Apr. 1 to 1253 in the subsequent 3 months ($p = 0.002$) and the monthly average number of used syringes found in public boxes for the safe disposal of syringes decreased from 865 to 502 ($p = 0.018$).

Interpretation: The effort to control illicit drug use did not alter the price of drugs or the frequency of use, nor did it encourage enrolment in methadone treatment programs. Several measures indicated displacement of injection drug use from the area of the crackdown into adjacent areas of the city, which has implications for both recruitment of new initiates into injection drug use and HIV prevention efforts.

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In Canada and elsewhere, policy-makers have primarily relied on law enforcement to curb the social,[1] community[2] and health-related harms of illicit drug use.[3,4] However, this approach has been criticized because of the lack of evaluation of interventions and the growing evidence that it may be harmful when applied in isolation.[5–7] The 2001 Auditor General's report on Canada's drug strategy concluded: "Of particular concern is the almost complete absence of basic management information on spending of resources, on expectations, and on results."[8] In our recent evaluation of the largest heroin seizure in Canadian history, we were unable to detect any measurable public health benefits with respect to changes in heroin use after the seizure.[9]

In April 2003 the Vancouver Police Department embarked on a large-scale enforcement operation aimed at illicit drug users (IDUs) in the city's Downtown Eastside (DTES). The stated goals of the "crackdown" involved "disrupting the open drug market and interrupting the cycle of crime and drug use that marks the streets of the Downtown Eastside."[10] The estimated cost of the crackdown to taxpayers was an additional $2.3 million.[10] In the first several weeks of the operation an additional 236 trafficking charges against 162 individuals were reported.[11]

Although there has been wide speculation on other impacts of the increased police activity, including anecdotal reports of increased enrolment in methadone programs on the one hand[12,13] and charges of widespread violation of human rights on the other,[14,15] the crackdown's effects had not been rigorously evaluated. Our ongoing cohort study of IDUs in this neighbourhood afforded us the opportunity to investigate the outcomes of the crackdown in terms of physical displacement of the drug market to other locations, initiation of addiction treatment and frequency of drug use among current users.

Methods

Beginning in May 1996, we recruited IDUs into the Vancouver Injection Drug User Study (VIDUS), a prospective cohort study that has previously been described in detail.[16,17] In brief, more than 1500 study subjects have been recruited through self-referral and street outreach, and the cohort appears to represent IDUs in the Vancouver area.[9] At baseline and semiannually, subjects provided blood samples and completed an interviewer-administered questionnaire that elicited demographic data (in-

cluding age, sex and place of residence), as well as information on drug use, risk-taking behaviour, access to health care services and participation in drug treatment programs. Several questions evaluated the effect of law-enforcement efforts on the supply of drugs and patterns of drug use.

The police crackdown began Apr. 7, 2003, and reportedly involved the redeployment of 50 additional officers to the DTES.[18] For the primary analyses, we compared the behaviour of active IDUs residing in the DTES who were interviewed in the 3 months before the crackdown (group 1) and those interviewed in the 3 months after Apr. 7, 2003 (group 2). Data on age, sex and ethnic origin were statistically analyzed to ensure no differences between groups 1 and 2. Active drug users in VIDUS who resided outside the DTES were used as a control group.

In an effort to identify effects of the crackdown, we investigated whether there were changes in the reported drug prices, patterns of drug use and general perceptions of the effect of police activities on the drug market. We also examined drug use in the community by evaluating statistics from the needle-exchange program, which is based in the DTES.[19] Using statistics compiled by the City of Vancouver, we examined changes in the use of outdoor public boxes for the safe disposal of syringes and in unsafe syringe disposal. Since public injection drug use and dealing have historically been concentrated on the corner of the DTES's Main and Hastings streets,[16] we defined the area within a 1-block radius of the corner of Main and Hastings as "the core" and peripheral areas in the DTES as "outside the core." Exchange and disposal data are available on only a monthly basis; therefore, we compared the 3 months before Apr. 1, 2003, with the 3 months after this date.

We analyzed categorical explanatory variables with Pearson's χ^2 test and Fisher's exact test and continuous variables with the Wilcoxon rank-sum test. All tests were 2-tailed, and the significance level was set at $p < 0.05$.

Results

Between Jan. 6 and July 7, 2003, 774 VIDUS participants returned to the study site for follow-up. We excluded 178 (23.0%) from the crackdown study because they had not used heroin, cocaine or "crack" during the entire 6-month period before the interview, and we excluded 210 (27.1%) active users from the primary analyses because they did not reside in the DTES. The propor-

Table 1: Perceived effects of police presence on drug-using behaviour among injection drug users (IDUs) evaluated in the 3 months before the start of a large-scale police crackdown (group 1) and the 3 subsequent months (group 2)

Personal effects of police presence and frequency of drug use	No. (and %) of IDUs		Odds ratio (and 95% CI)	*p* value
	Group 1	Group 2		
Types of drugs available affected				
No	186 (76.2)	95 (66.9)		
Yes	58 (23.8)	47 (33.1)	1.6 (1.0–2.5)	0.047
Reduced access to drugs				
No	171 (70.1)	82 (57.7)		
Yes	73 (29.9)	60 (42.3)	1.5 (1.0–2.4)	0.050
Reduced drug quality				
No	171 (70.1)	62 (57.4)		
Yes	73 (29.9)	46 (42.6)	1.7 (1.1–2.6)	0.014
Reduced quantity of drugs used				
No	207 (84.8)	123 (86.6)		
Yes	37 (15.2)	19 (13.4)	0.9 (0.5–1.6)	0.631
Prevented from buying drugs				
No	207 (85.2)	116 (81.7)		
Yes	36 (14.8)	26 (18.3)	1.3 (0.7–2.2)	0.368
Effect on which drugs used				
No	222 (91.0)	126 (88.7)		
Yes	22 (9.0)	16 (11.3)	1.3 (0.6–2.5)	0.474
Heroin use				
< daily	176 (72.1)	104 (73.2)		
≥ daily	68 (27.9)	38 (26.8)	0.9 (0.6–1.5)	0.814
Cocaine use				
< daily	174 (71.3)	103 (72.5)		
≥ daily	70 (28.7)	39 (27.5)	0.9 (0.6–1.2)	0.797
Crack use				
< daily	99 (40.6)	56 (39.4)		
≥ daily	145 (59.4)	86 (60.6)	1.1 (0.7–1.6)	0.826

Note: CI = confidence interval.

tions excluded because of lack of active drug use were similar (p = 0.19) in the group interviewed in the 3 months before the crackdown (21.3% [95]) and the group interviewed in the 3 months after the start of the crackdown (25.3% [83]). Therefore, we restricted the primary analyses to the 244 active IDUs seen in the 3 months before Apr. 7 (group 1) and the 142 active IDUs seen in the 3 months after Apr. 7 (group 2). Groups 1 and 2 were similar in age (p = 0.25), sex (p = 0.87), ethnic background (p = 0.46), instability of housing (p = 0.57) and years of injection drug use (p = 0.28). The subjects were mainly young (mean age 39 years) and male (63%) and had injected illicit drugs for 13 years on average.

Table 1 compares the intensity of drug use in groups 1 and 2 and perceptions about the effects of police presence. Although after the crackdown there was a significant increase in reporting that the police had affected the types of drugs available, a marginal decrease in reported ability to acquire drugs and a significant change in the reported quality of drugs, we found no difference in the reported extent to which police affected the quantity of drugs used, the buying of drugs or which drugs were used. This finding was supported by the lack of change in the reported daily use of heroin, cocaine and crack.

As Table 2 shows, we found significant increases in reporting that police presence had affected where drugs were used and had led to outdoor (but not indoor) drug use. The latter finding was supported by a significant increase in reporting of a change in the neighbourhood or alley of use because of police presence and a marginal increase in reporting of recent use in a public space such as a park, public washroom or street. We also found a significant reduction in willingness to use a safer injecting site and a nonsignificant decrease in contact with street nurses. We observed no increases in the use of methadone maintenance treatment or in the frequency of unsuccessful attempts to obtain treatment. There were no changes between the 2 interview periods (all $p > 0.1$) in reported single-shot drug prices (median [and interquartile range]) for heroin ($20 [$20–$20] before and $20 [$16–$20] after the crackdown), cocaine ($10 [$10–$10] in both periods) or crack ($10 [$8–$10] in both periods). When we repeated the secondary analyses

Table 2: Effects of police presence on the illicit drug market in the same 2 periods

Personal effect of police presence	No. (and %) of IDUs		Odds ratio (and 95% CI)	p value
	Group 1	Group 2		
Affected where drugs were used				
No	189 (77.5)	94 (66.2)		
Yes	55 (22.5)	48 (33.8)	1.8 (1.1–2.8)	0.016
Use inside				
No	226 (93.0)	128 (90.1)		
Yes	17 (7.0)	14 (9.9)	1.5 (0.7–3.0)	0.319
Use outside				
No	240 (98.8)	132 (93.0)		
Yes	3 (1.2)	10 (7.0)	6.1 (1.6–22.4)	0.002
Changed neighbourhood or alley of use				
No	199 (81.9)	104 (73.2)		
Yes	44 (18.1)	38 (26.8)	1.7 (1.0–2.7)	0.045
Inject in public spaces*				
No	166 (68.0)	83 (58.5)		
Yes	78 (32.0)	59 (41.6)	1.5 (1.0–2.3)	0.058
Willing to use a safer injecting site				
No	176 (72.1)	126 (88.7)		
Yes	68 (27.9)	16 (11.3)	0.3 (0.2–0.6)	< 0.001
Contact with a street nurse				
No	238 (97.5)	142 (100.0)		
Yes	6 (2.5)	0	0.2 (0.01–2.3)	0.060
Receiving methadone maintenance treatment				
No	144 (59.0)	79 (55.6)		
Yes	100 (41.0)	63 (44.4)	1.1 (0.8–1.7)	0.516
Denied drug treatment				
No	227 (93.0)	136 (95.8)		
Yes	17 (7.0)	6 (4.2)	0.6 (0.2–1.5)	0.273

*Defined as street, alley, doorway, public bathroom, park or parking lot.

on the data for the 210 active drug users who resided outside the DTES (107 seen in the 3 months before Apr. 7 and 103 seen in the 3 months after Apr. 7), we found no significant increase ($p = 0.66$) in reported public injection drug use and no significant differences (all $p > 0.1$) in the various measures of displacement of use or in any of the other measured covariates (data not shown).

From the needle-exchange data, we found that 363 998 syringes were distributed in the 3 months before Apr. 1, 2003, and 400 382 were distributed in the 3 months after this date (t test of monthly averages: $p = 0.516$). As Fig. 1 shows, the total number of used syringes found on the streets in the core (panel a) decreased significantly after the crackdown, from a monthly average of 1082 in the 3 months before Apr. 1 to 585 in the 3 months after Apr. 1 (t test: $p = 0.003$). However, a significant increase in unsafe disposal of used syringes was observed outside the core (panel b), the monthly average total number rising from 784 to 1253 in the same periods (t test: $p = 0.002$). We also found that use of the 6 public boxes for the safe disposal of used syringes (panel c) — 4 in the core and 2 outside the core — decreased significantly, from a monthly average total number of 865 in the 3 months before Apr. 1 to 502 in the 3 months after Apr. 1 (t test: $p = 0.018$). Since disposal statistics are compiled only for the DTES, we could not assess changes outside this area. Nevertheless, we did note that the proportion of syringes distributed that were not returned to the exchange (including from DTES needle "sweeps") rose from 4.0% in the 3 months before the crackdown to 8.1% in the 3 months afterward ($p < 0.001$).

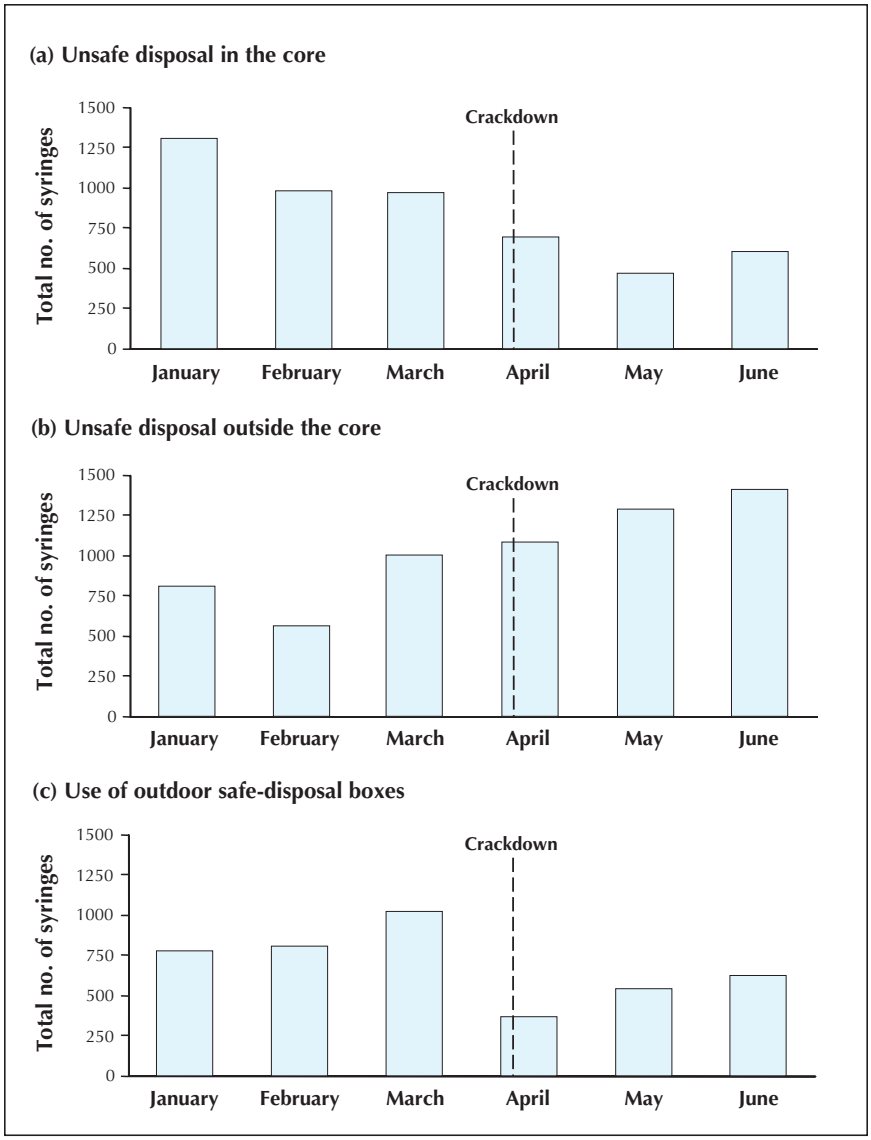

Fig. 1: Total number of used syringes discarded in public before and after a large-scale police "crackdown" to control illicit drug use in Vancouver's Downtown Eastside (DTES). The "core" was defined as the area within a 1-block radius of the corner of Main and Hastings streets; the remainder of the DTES was considered "outside the core."

Interpretation

We detected no reduction in drug-use frequency or drug price in response to a large-scale police crackdown on drug users in Vancouver's DTES. The evidence that drugs became more difficult to obtain was consistent with reports of displacement of drug dealers[20,21] and was supported by the significantly higher rates of reporting that police presence had affected where drugs were used, including changes in neighbourhood and increases in use in public places. These observations were validated by examination of needle-exchange statistics.

Our findings are consistent with those showing that demand for illicit drugs enables the illicit drug market to adapt to and overcome enforcement-related constraints.[9,22–24] Although evidence suggested that police presence made it more difficult to obtain drugs, this appeared to be explained by displacement of drug dealers.[20,21] Other studies have similarly shown that concentrated police presence tends to displace drug-use activities and associated crime to neighbouring areas.[22,23,25,26] Our results probably explain reports of increased injection drug use, drug-related crime and other public-order concerns in neighbourhoods where activities related to illicit drug use and the sex trade emerged or intensified in the wake of the crackdown.[27,28] Such displacement

has profound public-health implications if it "normalizes" injection drug use among previously unexposed at-risk youth.[20,21,29,30] Furthermore, since difficulty in obtaining syringes has been shown to be a significant factor in promoting syringe sharing among IDUs in Vancouver,[31] displacement away from sources of sterile syringes may increase the rates of bloodborne diseases.[7,25,32] Escalated police presence may also explain the observed reduction in willingness to use a safer injection facility.[33] It is unlikely that the lack of benefit of the crackdown was due to insufficient police resources. Larger crackdowns in the United States, which often involved helicopters to supplement foot and car patrols, have not had measurable benefits and have instead been associated with substantial health and social harms.[5,22,24,32,34]

There are several limitations to our study. As previously discussed,[16] the subjects in VIDUS are not a random sample, although they are believed to represent IDUs in Vancouver.[9] In addition, although we followed a statistical protocol defined a priori, the number of statistical comparisons was large. Sampling from the periods before and after the crackdown may have been affected by the drop in number of visits between the 2 periods, although we noted a similar pattern in the same 6-month period in 2002, which suggests that the reduction in visits was more likely due to the cyclic nature of the study. Although we tested for potential confounding due to differences in the 2 study groups, it is possible that unmeasured confounding existed. An additional limitation is that, because exchange and disposal statistics were available only on a monthly basis, the period Apr. 1 to Apr. 6 was included in the postcrackdown period, which would reduce any enforcement-related differences. Finally, the restricted sample size meant that there was insufficient statistical power to evaluate outcomes in HIV risk behaviour, such as syringe borrowing; however, previous studies have consistently shown police crackdowns to be associated with elevated HIV risk behaviour.[5,23,24,26]

In summary, we detected no reduction in drug-use frequency or drug price in response to a large-scale police crackdown in Vancouver's DTES. Our results support anecdotal reports of increased public drug use and displacement of drug users,[27] and they probably explain increases in drug-related sex-trade activity[28] and crime in areas outside the DTES.[11,20] The crackdown also increased the rates of unsafe syringe disposal and significantly reduced the proportion of syringes being returned to the city's largest needle exchange. The displacement of the drug market to new areas has substantial public-health implications,[7,25,31,35] including the potential for an increased risk of new initiates into injection drug use.[29,30] Future enforcement strategies should be coordinated with expanded public-health and addiction-treatment strategies.[31,33,35,36] Once addiction-treatment services are in place,[37] we recommend that outreach services and supervised injection centres be evaluated in an effort to avoid the negative public-health consequences of drug-use displacement.[38]

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