# Do Crack Smoking Practices Change With the Introduction of Safer Crack Kits?

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# ABSTRACT

**Objectives:** Crack smoking has increased in Vancouver despite the harms associated with its use. Many people who smoke crack share their equipment, thereby increasing their risk for infectious disease. This project explored the effects of outreach distribution of "safer crack kits" on smoking practices.

**Methods:** Two cross-sectional surveys were conducted, the first prior to kit distribution and the second a year later. Participants were individuals who smoked crack and lived in Vancouver's inner city. Crack smoking practices and use of items in the crack kit were documented.

**Results:** The results of the second survey (i.e., following 12 months of kit distribution) showed an increase in availability and use of safer use items; mouthpieces and condoms provided in the kit were used by 79% and 59% of recipients, respectively. Unsafe practices were reported post distribution: although 42% used brass screens, the majority reported that they usually used Brillo®; over 40% of respondents reported using syringe plungers to scrape crack resin; and participants reported sharing crack-use paraphernalia.

**Conclusion:** While kit distribution made safer use items more accessible, its impact on safer use practice was limited. Our findings highlight the need for targeted distribution of safer use items. Future research should explore the dynamics of unsafe crack smoking practices and ways to leverage safer use messaging.

Key words: Crack cocaine; smoking; safer use; harm reduction

La traduction du résumé se trouve à la fin de l'article.

n Canada, crack smoking is a significant public health problem<sup>1</sup> with well-known associated health-related harms.<sup>2,3</sup> Because many people who smoke crack share their equipment, crack smoking has been associated with infectious disease transmission including tuberculosis, pneumonia, hepatitis C and HIV.3-11 Crack use in Vancouver has been on the rise over the past decade.<sup>4</sup> Pilot research with crack smokers in Vancouver found that these individuals were engaging in unsafe crack use practices such as sharing crack pipes.<sup>12</sup> Contributing to unsafe practices in crack smokers are: a lack of available equipment for crack use; specific stigma associated with crack smoking;<sup>13,14</sup> and the fact that while harm reduction equipment is distributed through public health agencies for IV drug users to reduce the harm of needle sharing practices, similar harm reduction initiatives for people who smoke crack are not as available. The objective of this research was to determine the impact of distribution of safer crack use kits on crack smoking practices; specifically, utilization of safer use items and equipment sharing practices.

# **METHODS**

# Kit distribution and outreach

Two outreach approaches were used for distribution of the kits; peer outreach and integrated outreach. Peer outreach involved teams of two peers patrolling the neighbourhood on foot and providing outreach in the alleys and main public areas. Integrated outreach combined distribution with existing harm reduction services; some of this outreach took place on foot and one team conducted mobile outreach from a van. All teams distributed a limited number of kits per session (25-100). The outreach process included a demonstration of how to assemble kit contents (e.g., put brass screens into the pipe, attach the mouthpiece), education regarding the rationale for using tobacco pipe screens instead of Brillo®, a discussion of the risks of sharing equipment, and referrals to health and social service agencies when required. The teams used a standard data collection form to record the number of kits distributed as well as the recipient's gender. Textbox 1 describes the rationale for items included in the kits.

# **Kit distribution evaluation**

In order to examine utilization and effects of the distribution of safer crack kits on crack use practices, cross-sectional surveys were conducted prior to and post kit distribution.

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#### Textbox 1. Safer crack use items included in kits

- **Pyrex stems** are stronger, less likely to explode, break or chip and last longer than glass stems.
- Mouthpieces: 4 inch mouthpieces were cut from plastic food-grade tubing; using a mouthpiece can prevent direct contact of the mouth with broken or hot pipes. Providing individuals with their own mouthpiece can prevent saliva exchange when a pipe is shared.
- Wooden push sticks are less likely to chip stems than metal ones (e.g., coat hangers, car antenna).
- Condoms were included to promote safer sex. Crack use is associated with high-risk sexual behaviours; many women who use crack support themselves through sex work.
- **Bandages** were included to protect broken skin and sores/burns on fingers.
- Alcohol swabs were included to promote cleaning of equipment (e.g., pipes, mouthpieces) and to cleanse open wounds (e.g., sores on the fingers).
- Brass screens designed for tobacco pipes are less likely to break apart than steel wool or "Brillo®" and are not coated with potentially toxic substances.
- Lighter: Each kit included one lighter. Smoking crack requires consistent heat applied to the pipe. Using matches is more likely to result in burns on fingers. Not having one's own "light" is associated with unsafe circumstances (i.e., forced to share crack or experience harassment from others).
- **Information cards:** Two cards were included in the kits: The tip card covered harm reduction information for crack users, and the resource card included local information with health and drug user services

#### Total cost: \$1.66

#### Instrument

The surveys were developed by team members and focused on items related to crack use practices and crack kit utilization. The survey items were drawn from previous empirical findings related to crack use practices, 12,15 as well as the Short Form-36 Health Survey.16 Kit utilization was determined by questions such as "In the last year, did you use each of the following items regularly (e.g., on a consistent basis)?" with responses of "yes" or "no" as answer choices. Smoking practice was determined by questions such as "When you smoke crack, how often do you use a pipe that has already been used by someone else?" with answer choices including "never, almost never, sometimes, usually or always". An additional sharing practices section included the question "Have you ever shared a pipe with people you know?" and "people you don't know?" with possible survey responses as "yes" or "no". People who use crack provided critical feedback regarding wording and relevance of survey items and the survey was pilot tested prior to administration. One significant change was made to the postdistribution survey regarding materials used as push sticks. Push sticks are used to pack and position the filter or screen inside the crack pipe. The push stick is used to move the screen back and forth to recover the crack that has hardened on the inside of the pipe after it cools. During the study, local agencies reported concerns that people who smoked crack were using syringe plungers as push sticks; therefore a question was added.

#### **Data collection**

The surveys were administered by a team of researchers in local service agencies over 3-5 months. The survey participants were men and women living or "hanging out" in the target neighbourhood who self-reported smoking crack in the previous 30 days and who could speak and understand English. Women were oversampled due to the specific interests of research team members; results on women's experience are published elsewhere.<sup>17</sup> Participants for both surveys were recruited from locations known to be frequented by people who use crack (i.e., drop-in centres, transition housing, shel-

**Textbox 2.** Reported use of items in the safer crack use kits (n=106)

74% indicated the safer crack kit harm reduction tip card was useful; 66% indicated that the services/resource list cards were useful.

ters and "on the street"). Recruitment also occurred by word-ofmouth and via flyers noting survey date, time and locations. Surveying took place in a closed room separated from the general services area of the agency, with research team members screening participants for duplicate participation. While this study was not longitudinal, several respondents participated in both pre- and post-test surveys. Surveys took approximately 20 minutes to complete and participants received a \$10 stipend. Ethical approval for this research was obtained from the University of British Columbia Behavioural Research Ethics Board.

### **Data analysis**

All outreach record forms and participant surveys were entered into SPSS® version 17. A sample of 177 per group enabled us to detect a 20% difference in changes in kit item use (+/-10%) with 95% level of confidence. The database was checked for accuracy by team members. Descriptive statistics were obtained for demographic data including gender, age, amount and source of income, ethnicity, crack use and other drug use. Chi-square analysis was used to examine differences in crack smoking and equipment sharing practices at each time point for the pre- and post-distribution questionnaires.

## RESULTS

The pre-distribution survey was completed by 206 persons, 58% were female and the median age was 40 years. During the study period, 12,499 kits were distributed; 6,386 kits were received by men, 6,007 by women and 106 by transgendered individuals; 6,092 kit recipients reported receiving more than one kit. The post-distribution survey was completed by 150 persons, of whom 106 (71%) had received a study kit. Injection drug use was reported by approximately 40% of participants. Demographic characteristics of the two samples are shown in Table 1. We analyzed the data for differences in characteristics in the two different survey samples. There were significantly more persons of Aboriginal heritage and more persons receiving public assistance in the post-distribution group.

Textbox 2 shows the post-distribution survey results of the frequency with which kit recipients used each of the safer crack kit items. Pyrex stems and lighters were used by more than 98% of respondents, mouthpieces were used by 79% and condoms by 59%. There was no significant difference in condom use between male and female recipients. Three quarters of the recipients found the harm reduction tip card useful.

Table 2 outlines smoking practices pre and post kit distribution. Respondents reported an increase in usually or always finding and using Pyrex pipes and mouthpieces. There was also an increase in use of items that had been previously used by someone else. Most

# DO CRACK KITS CHANGE SMOKING PRACTICES

# **Table 1.**Characteristics of the Samples

	Pre-distribution Survey (N=206)	Post-distribution Survey (N=150)	p-value
	n (%)	n (%)	
Gender			0.125
Men	80 (39.0)	74 (49.7)	
Women	120 (58.5)	71 (47.7)	
Transgendered/Other identity	5 (2.4)	4 (2.7)	
Age (yrs) [Mean (SD)]	39.8 (8.9)	40.6 (8.3)	0.397
Aboriginal heritage	73 (35.4)	75 (50)	0.006
Low income (less than \$1450/month)	174 (86.6)	129 (90.2)	0.304
Currently receiving public assistance (welfare, disability pension)	139 (68.8)	116 (78.9)	0.036
as main source of income		,	
Crack smoking			
Male			0.314
Less than once/week	4 (5.0)	2 (2.7)	
Weekly	23 (28.8)	29 (39.7)	
Daily	53 (66 3)	42 (57 5)	
Female	33 (00.3)	12 (37.3)	0 182
Less than once/week	12 (10 0)	2 (2 8)	0.102
Wookh	34 (28 3)	21 (20.6)	
Deile	34(20.3)	21 (29.0)	
Dally Other mother de efficient	74 (01.7)	40 (07.0)	
Other methods of use	02 (40 5)		0 700
iv use (neroin, cocaine, crack or other drugs)	83 (40.5)	28 (38.7)	0.729
Snorting	56 (27.3)	47 (31.3)	0.410

 Table 2.
 Changes in Frequency of Crack Smoking Practices from Pre- and Post-distribution Time Points

Use Brillo® Pro	<b>Never/ Almost Never</b> <b>n (%)</b>	Sometimes	Usually/Always	
Use Brillo® Pro	n (%)	n (%)		
Use Brillo® Pro Po	4 (1 9)	•• ( /•)	n (%)	
Po	· · · · · · · · · · · · · · · · · · ·	15 (7.3)	187 (90.8)	0.645
	st 5 (3.3)	9 (6.0)	136 (90.7)	
Use Pyrex pipes Pre	e 17 (8.3)	67 (32.5)	122 (59.2)	<0.001
Po	st 8 (5.4)	19 (12.8)	122 (81.9)	
Use pipes with splits/cracks Pre	e 108 (52.4)	62 (30.1)	36 (17.5)	0.301
Ро	st 66 (44.6)	55 (37.2)	27 (18.2)	
Use a mouthpiece Pre	51 (24.8)	46 (22.3)	109 (52.9)	0.007
Po	st 23 (15.3)	23 (15.3)	104 (69.3)	
Use a used mouthpiece Pre	e 130 (63.4)	58 (28.3)	17 (8.3)	0.005
Po	st 82 (55.4)	36 (24.3)	30 (20.3)	
Use a used pipe Pre	93 (45.1)	86 (41.7)	27 (13.1)	<0.001
Ро	st 62 (41.6)	43 (28.9)	44 (29.5)	
Pipe explodes or breaks apart Pre	121 (59.0)	59 (28.8)	25 (12.2)	0.067
Po	st 78 (52.0)	40 (26.7)	32 (21.3)	
Obtain own crack Pre	8 (3.9)	14 (6.8)	183 (89.3)	0.299
Po	st 8 (5.3)	5 (3.3)	137 (91.3)	
Find pipe when needed Pre	17 (8.3)	32 (15.6)	156 (76.1)	0.010
Po	st 5 (3.3)	12 (8.0)	133 (88.7)	
Find mouthpiece when needed Pre	51 (25.4)	49 (24.4)	101 (50.2)	<0.001
Po	st $15(10.3)$	12 (8.2)	119 (81.5)	
Smoke with others Pre	36 (17.6)	70 (34.1)	99 (48.3)	0.001
Po	st 16 (10 7)	32 (21 3)	102 (68.0)	

post-distribution survey respondents (87%) reported using metal

push sticks, 42% used wooden push sticks, 32% used plastic push sticks and 41% used syringe plungers.

#### DISCUSSION

The distribution of safer use kits promoted access and utilization of these tools; we found the use of "safer" items such as Pyrex pipes had increased at the one-year time point, highlighting the need for and acceptability of less harmful non-injection drug using equipment for crack users in Vancouver.

Sharing crack-use paraphernalia is very prevalent; Fischer et al. reported that 79% of study participants had shared equipment in the previous 30 days, with almost half doing so on more than 20 occasions.<sup>18</sup> Individuals in our study reported the use of less safe strategies (i.e., sharing pipes) despite kit distribution, putting them at risk for infectious disease. Some parallels may be drawn to early days of harm reduction initiatives. Early Canadian reports found high rates of equipment sharing between intravenous drug users despite participation in needle exchange programs.<sup>19,20</sup> Explana-

tion of this phenomenon cited social network variables (i.e., creation of user sharing networks) which may have informed our findings. Difficulty with consistent access to safe equipment<sup>21,22</sup> has also been a variable affecting harm reduction initiatives. Regulations regarding syringe availability affect unsafe needle practices;<sup>23</sup> in BC, changes from one-to-one needle exchange to distribution of needles to enable persons to have a new needle for every injection as well as deregulation of syringe sales in pharmacies impacted the way in which needle practices occurred. In our project, recipients received one kit per person and outreach supplies quickly ran out. As pipes for the sole use of smoking crack are currently illegal in BC, a scarcity mentality among user networks may have created urgent "supply and demand" dynamics in our study; an increased but inadequate supply of items may contribute to an increase in sharing behaviours. When distribution of harm reduction equipment is part of a comprehensive program within a spectrum of other health services, risk behaviours decline significantly<sup>20</sup> and positioning kit distribution in a continuum of services is necessary.

People who use Brillo® when smoking crack report small fragments of steel wool breaking off and being inhaled.<sup>24</sup> Although brass screens were included in the kits, only 42% of kit recipients reported using them and 91% reported usually or always using Brillo®. Brass screens are harder to manipulate to pack into the pipe. Despite providing demonstrations of equipment use during kit distribution, our findings emphasize the need to further explore effective harm reduction messaging accompanying street distribution.

Although condoms are available from harm reduction distribution sites and outreach, the majority of kit recipients used those provided in the kit. In a study of crack users in BC, more than one third of respondents had engaged in unprotected sex in the 30 days prior to assessment;<sup>18</sup> therefore we believe that provision of condoms within a targeted distribution program is useful.

While this project documented trends in crack use practices, it is important to note that it is not possible to attribute changed practices in crack smoking behaviour as this evaluation involved two independent sample cross-sectional surveys; although the recruitment methods and interview sites were similar, there were differences in the samples. Our gender sampling indicated that women were over-represented in our study compared to other studies which report more male participants who use crack.<sup>7,18</sup> Age demographics in our sample as well as the over-representation of Aboriginal individuals in our study are reflective of Vancouver's inner city.<sup>25</sup>

Over 40% of respondents reported using syringe plungers to scrape crack resin from the inside of the pipe. Using syringe plungers may result in melting plastic onto the pipe and also discarding the rest of the unused syringe and needle. As a result of this study, interviews conducted with harm reduction supply distribution sites in BC,<sup>26</sup> combined with the evidence that crack smoking is associated with infectious disease transmission, led to the decision to make crack pipe mouthpieces and wooden push sticks available through the BC provincial harm reduction supplies. Pyrex crack pipes are not currently distributed provincially.

This work took place in Vancouver's inner city, however similar issues are present across many major Canadian cities.<sup>27</sup> Despite research evidence to support the benefits of the distribution of safer use equipment,<sup>7</sup> there is a lack of harm reduction programming available for those who smoke crack. The finding that over half of the study sample did not inject drugs suggests that access to more traditional harm reduction initiatives geared towards injection drug users, such as needle distribution, may miss this population. This highlights the need for targeted services to engage individuals who smoke crack and calls for a more comprehensive understanding of their risk environment.<sup>28</sup>

## CONCLUSION

Our findings highlight the need for targeted distribution of safer use items. While kit distribution made safer items more accessible, its impact on safer use practice was limited. Further research should explore dynamics regarding the sharing of equipment as well as strategies to leverage messaging about specific harmful practices. Efforts should promote a generous supply of harm reduction tools, and kit distribution must be positioned in a continuum of health services.

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#### **DO CRACK KITS CHANGE SMOKING PRACTICES**

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# RÉSUMÉ

**Objectifs :** La consommation de crack augmente à Vancouver malgré les dangers de cette pratique. Beaucoup de fumeurs de crack partagent leurs accessoires, ce qui accroît leur risque de contracter des maladies infectieuses. Nous avons voulu étudier les effets sur la consommation de crack de la distribution de « kits-crack » (trousses pour un usage plus sécuritaire du crack).

**Méthode :** Nous avons mené deux enquêtes transversales, la première avant la distribution des trousses et la seconde un an plus tard. Les participants étaient des fumeurs de crack vivant dans les quartiers déshérités du centre-ville de Vancouver. Nous avons collecté des informations sur la consommation de crack et l'utilisation des accessoires de la trousse.

**Résultats :** Les résultats de la seconde enquête (12 mois après la distribution des trousses) font état d'une hausse de la disponibilité et de

l'utilisation d'accessoires de consommation à moindre risque; les embouts et les condoms contenus dans la trousse étaient utilisés par 79 % et 59 % des destinataires, respectivement. Des pratiques non sécuritaires ont été déclarées même après la distribution des trousses : bien que 42 % des usagers emploient une grille en cuivre, la majorité ont dit qu'ils se servaient habituellement d'un Brillo®; plus de 40 % des répondants ont dit utiliser des pistons de seringues pour gratter la résine de crack; et les participants ont dit partager leurs accessoires.

**Conclusion :** La distribution des trousses a facilité l'accès aux accessoires de consommation à moindre risque, mais elle n'a eu qu'un impact limité sur les pratiques de consommation à moindre risque. Nos constatations soulignent le besoin d'une distribution ciblée d'accessoires de consommation à moindre risque. Les études futures devraient explorer la dynamique des pratiques non sécuritaires de consommation de crack et les moyens de donner plus de poids aux messages sur la consommation à moindre risque.

**Mots clés :** crack; tabagisme; comportement de réduction des risques; réduction des dangers



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