



UNSW  
AUSTRALIA

## Injecting risk practices and Hepatitis C

Authors: Kerrynt Butler and Lucinda Burns

National Drug and Alcohol Research Centre, University of New South Wales

Medicine

National Drug and Alcohol Research Centre

### KEY FINDINGS

- Sharing needles/syringes and injecting equipment poses a substantial risk to HCV transmission among PWID.
- While needle/syringe sharing is low among PWID, equipment sharing is far more common.
- Those who have tested positive to HCV antibodies are 7.5 times more likely to receptively share needles/syringes than those who tested negative to HCV antibodies, thereby putting themselves at increased risk.
- Harm minimisation interventions and public health messages need to target this behaviour to reduce the risk of HCV infection.

### BACKGROUND

Hepatitis C virus (HCV) infection is a major public health concern globally, with people who inject drugs (PWID) most at risk. In Australia, injecting drug use accounts for almost 90% of newly acquired HCV (Kirby Institute, 2014).

Reducing injecting risk behaviours among PWID is critical to reducing the ongoing transmission, morbidity and mortality of HCV. Reducing injecting risk behaviours can be achieved through various harm minimisation interventions including needle and syringe programs (NSPs), opiate substitution treatment (OST), and education and information delivered as health promotion messages through public health services and peer education programs.

While the sharing of needles and syringes is considered to have the greatest role in HCV transmission, the sharing of injection equipment (spoons, filters, tourniquets, water etc) has also been shown to be a source of HCV transmission (Crofts et al, 2000; Van Beek et al, 1998, Corsen et al, 2013). While the transmission of HCV through injecting equipment is lower than needles/syringes the incidence of this type of sharing is far higher making this route of transmission an important risk behaviour to target.

In addition to harm minimisation interventions, the importance of early diagnosis and reliable feedback of results is thought to impact injecting risk behaviour. Work undertaken in the USA by Kwiatkowski, Fortuin Corsi et al. (2002) suggest that knowledge of one's serostatus prompts individuals to modify their behaviour to avoid infecting others. While findings from an Australian study (Aspinall et al, 2013) recorded a small reduction in injecting frequency; no reduction in the sharing of injecting equipment following a diagnosis of HCV was observed.

## BULLETIN AIMS

The primary objectives of this study were to determine the extent of injecting risk behaviours among a typical sample of PWID, and to compare the drug use and risk behaviours of PWID who reported anti-HCV positive and negative results.

## METHOD

The Illicit Drug Reporting System (IDRS) is an annual sentinel surveillance monitoring aimed at detecting emerging trends in the illicit drug market. Methodology is described in full elsewhere (Stafford and Burns, 2015). Briefly, a cross-sectional non-probability sample of PWID reporting at least monthly illicit drug injection in the preceding six months were recruited via needle and syringe programs (NPS), peer-referral and street press advertising. Participants were residents in the capital city of each Australian State and Territory where they were recruited for at least 12 months preceding interview and underwent a structured interviewer-administered survey. The survey elicited information on demographics, drug use, drug markets, health and treatment utilisation, blood-borne virus and injecting risk. The interview took ~40 minutes to administer, and subjects received AUD\$40 for participation.

Self-report was used to assess HCV testing. Participants were asked about prior HCV antibody testing (anti-HCV), which detects exposure to the virus. Questions related to injecting risk behaviour included receptive sharing “How many times in the last month have you used a needle after someone had already used it”, and distributive sharing “How many times in the last month has someone used a needle after you have used it”. These variables were collapsed to provide dichotomous outcomes yes/no.

For the purposes of this bulletin we examined a series of questions that were included in a HCV testing and treatment module in 2013 questionnaire and the section on injecting risk behaviours from the same survey.

## Statistical Analysis

Descriptive analyses were undertaken and bivariate analyses were conducted using cross tabulations for dichotomous variables, and t-tests for continuous variables.

Logistic regression was run to control for potential confounding factors such as age, gender, frequency of injection (past month) and duration of injecting (in years). Alpha level was set as  $p < 0.05$ . Results are reported in terms of adjusted odds ratios (AOR) and 95% confidence intervals (95% CI) for categorical

outcomes, and t-tests for continuous outcomes. All analyses were conducted in SPSS (v22).

## RESULTS

### Demographics and sample characteristics

Between June and July 2013, 887 participants were recruited. The sample was a mean age of 40 years (SD: 8.86; range 18-66) and 64% were male. Most participants (84%) were unemployed, and more than half (56%) of the sample reported a history of incarceration. (Table 1)

**Table 1: Sample characteristics**

IDRS	(N=887)
Male	64%
Mean age	40 years
Unemployment	84%
Prison history	56%

### Needle/syringe and injecting equipment sharing

Needle and syringe sharing among the total sample was low with 11% reporting lending a needle to someone else after using it themselves (distributive sharing) and 7% reporting using a needle after someone else had used it (receptive sharing). Seven percent of PWID reported receptively sharing needles on a median of two occasions in the past month, with typically either regular sex partner(s) (48%) or close friend(s) (39%).

Injecting equipment sharing was reported by a much larger proportion, almost one quarter of the total sample (24%). Among PWID who shared injecting equipment; the sharing of spoons (to prepare mixtures) was reported by 75%, the sharing of tourniquets by 31%, the sharing of water by 26%, and filters by 21%. (Table 2).

The majority (90%) of participants had undergone Hepatitis C antibody (anti-HCV) testing and of those who had been tested, two-thirds (69%) had returned a positive result.

Participants who are anti-HCV positive were older, had longer injecting histories, and were more likely to be in current opioid substitution treatment therapy (OST) compared to the anti-HCV negative group. They were also more likely to nominate heroin as their drug of choice and the drug they injected most often in the last month.

**Table 2: Needle/Syringe and injecting equipment sharing among PWID**

IDRS	N=887 (n)	%
Distributive sharing <sup>^</sup>	93	11%
Receptive sharing <sup>^</sup>	61	7%
- Shared with regular sex partner(s)	26	48%
- Shared with close friend(s)	21	39%
Median # of times receptively shared <sup>^†</sup>		2.0
Shared injecting equipment	214	24%
- Spoons	161	75%
- Tourniquets	67	31%
- Water	55	26%
- Filter	44	21%

<sup>^</sup>in past month

<sup>†</sup> among those who reported receptively sharing

### HCV testing and injecting risk behaviours

There was no significant difference between those who are anti-HCV positive and those who are anti-HCV negative among people who distributively shared (Table 3). However, participants who are anti-HCV positive were 7.5 times more likely to receptively share than those who were anti-HCV negative; even after controlling for age, gender, length of injecting history (years) and frequency of injecting occasions (past month).

**Table 3: Needle/Syringe sharing among HCV status groups**

	Anti-HCV negative	Anti-HCV positive	P value
Distributive sharing	9%	11%	0.234
Receptive sharing	2%	9%	P<0.01

## DISCUSSION

While needle/syringe sharing is commonly understood among PWID to be a significant transmission risk; the sharing of injecting equipment is perceived to be less risky and is reported by many more individuals. This exposes a serious gap in knowledge among PWID and presents an opportunity to increase awareness that may lead to reducing transmission of HCV and other blood-borne virus infections (BBVI).

Even where the risk of needle/syringe sharing is acknowledged, receptive sharing is still reported among PWID with a positive result for HCV antibodies. These findings are of considerable concern as receptive sharing exposes the individual to additional BBVI risks including re-infection, infection with a different genotype, and/or infection with additional BBVI (i.e. HIV).

However, the majority of participants were actively engaged in their health care and most had undergone antibody screening for Hepatitis C. While previous studies, Kwiatkowski, Fortuin Corsi et al. (2002) suggest that knowledge of one's serostatus prompts individuals to modify their behaviour to avoid infecting others; results shown here suggest that rather than prompting protective behaviours (reducing distributive sharing), individuals with a positive result for anti-HCV are more likely to use a needle after someone else (receptively share) than those who are anti-HCV negative.

Other findings from this data (not presented here) have uncovered an ambivalent attitude towards treatment efficacy (despite recent advances) among this group which may explain, in part, a lack of concern regarding additional exposure post-diagnosis.

## CONCLUSION

Harm minimisation strategies and health promotion messages need to target these behaviour to educate and inform individuals of the additional risks receptive sharing and equipment sharing poses.

## REFERENCES

Aspinall EJ, Weir A, Sacks-Davis R, Spelman T, Grebely J, Higgs P, et al. Does informing people who inject drugs of their hepatitis C status influence their injecting behaviour? Analysis of the networks ii study. *International Journal of Drug Policy*. 2014;25(1):179-82.

Corson, S., Greenhalgh, D., Taylor, A., Palmateer, N., Goldberg, D., & Hutchinson, S. (2013). Modelling the prevalence of HCV amongst people who inject drugs: An investigation into the risks associated with injecting paraphernalia sharing. *Drug and Alcohol Dependence*, 133(1), 172-179. doi: 10.1016/j.drugalcdep.2013.05.014

Crofts, N., Caruana, S., Bowden, S., & Kerger, M. (2000). *Minimising harm from hepatitis C virus needs better strategies* (Vol. 321).

HIV, viral hepatitis and sexually transmissible infections in Australia Annual Surveillance Report 2014. (2014): The Kirby Institute

IBM (2013). SPSS for Windows version 22.0 (Version 22.0). New York.

Kwiatkowski CF, Fortuin Corsi K, Booth RE. The association between knowledge of hepatitis C virus status and risk behaviors in injection drug users. *Addiction*. 2002;97(10):1289-94.

Stafford J, & Burns L (2015). Australian Drug Trends 2014. Findings from the Illicit Drug Reporting System (IDRS). Australian Drug Trend Series. No. 127. Sydney, National Drug and Alcohol Research Centre, UNSW Australia.

Van Beek, I., Dwyer, R., Dore, G. J., Luo, K., & Kaldor, J. M. (1998). Infection with HIV and hepatitis C virus among injecting drug users in a prevention setting: Retrospective cohort study. *British Medical Journal*, 317(7156), 433-437.

## ACKNOWLEDGEMENTS

The Illicit Drug Reporting System project was supported by funding from the Australian Government under the Substance Misuse Prevention and Service Improvement Grants Fund.

The researchers and research interviewers involved in the IDRS project.

All participants who were interviewed for the IDRS participant survey.

The agencies that assisted with recruitment and interviewing of participants.

## SUGGESTED CITATION

Butler, K and Burns, L. (2015). Injecting Risk Practices and Hepatitis C. *Drug Trends Bulletin*, July 2015. Sydney: National Drug and Alcohol Research Centre, University of New South Wales, Australia.