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Key Points

- This issue of the *Drug Trends Bulletin* compares and contrasts the findings of the 2006 IDRS injecting drug user survey (including those of an additional blood borne virus, or BBV, module) with those of the Australian Needle and Syringe Program (NSP) Survey.
- Initiation to injecting within the last three years was relatively uncommon in both samples. This is consistent with other research which has identified an increase in the median age of regular heroin users and a possible reduction in initiation to heroin injecting. Indeed, it is estimated that since the heroin shortage, the size of the overall population of injecting drug users in Australia has decreased, a proposition supported by a decrease in incident hepatitis C notifications since that time.
- High rates of lifetime BBV testing were reported by both the IDRS and NSP Survey samples. Rates of recent testing were slightly lower among those who had initiated injecting within the preceding three years than among those with a longer injecting history.
- The most common reasons for undertaking testing were as a matter of 'routine' and/or subsequent to recommendation by a health professional. Various reasons for not undergoing testing were also offered, most often related to apathy. No participants reported that they were unaware that testing was available.
- Sharing of needles/syringes and other injecting equipment has decreased over time, but continues to occur at substantial rates, suggesting a need for expansion of NSP initiatives such as vending machines, and an acknowledgement of the social contexts in which individual risk behaviours occur. Ultimately, this issue is likely to require consideration of broad structural interventions which address marginalisation through issues such as homelessness, poverty alleviation and education and employment needs.
- Despite efforts to improve access to antiviral therapy for hepatitis C virus (HCV) infection and improved treatment outcomes, treatment uptake for chronic HCV infection remains low.

Blood borne virus surveillance among sentinel samples of injecting drug users

Introduction

In Australia, cross-sectional seroprevalence surveys of people who inject drugs (injecting drug users; IDUs) have traditionally formed the basis of HIV and hepatitis C (HCV) surveillance among this population. Since 1995, the Australian Needle and Syringe Program (NSP) Survey has provided annual estimations of point prevalence to monitor changes over time in patterns of blood borne viral infection and related risk behaviours among NSP clients. During a one week period in October, staff at selected NSP sites across all Australian jurisdictions recruit clients to (i) self complete a brief questionnaire covering demographics, injecting drug use and blood borne virus transmission risk behaviours; and (ii) provide a capillary blood sample, which is subsequently screened for the presence of antibodies to HIV and hepatitis C virus (HCV). Sample sizes for the Survey have ranged from 1072 in 1995 to 2694 in 2000. Serology results are used to estimate the prevalence of HIV and HCV infection among NSP clients, and are generally interpreted as a proxy for the prevalence of these infections among people who inject drugs in Australia.

The Illicit Drug Reporting System (IDRS) is also conducted on an annual basis in all Australian States and Territories. The IDRS monitors the price, purity, availability and use patterns of illicit drugs and related issues in order to act as an "early warning system" for the detection of emerging trends in illicit drug markets. Conducted nationally since 2000, the IDRS utilises three sources of information: interview data from IDUs (upon which IDRS data in this bulletin are based), interview data from key experts and analysis of indicator data. Unlike the NSP Survey, the IDRS restricts recruitment to major metropolitan centres and focuses specifically on regular injectors, that is, persons injecting drugs on at least a monthly basis. These IDUs are considered to be a 'sentinel' sample, i.e. people who can provide information on emerging trends, related issues and harms. Approximately 900 participants are recruited annually between June and August each year.

As in the NSP Survey, participation in the IDRS IDU Survey is voluntary. Where the two Surveys differ is that the NSP Survey is self administered and does not provide financial remuneration, whereas the IDRS IDU Survey is interviewer administered and participants are reimbursed for their time and any expenses associated with their participation.

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Monitoring trends in blood-borne viruses is not a traditional focus of the IDRS. However, in 2006 an additional self-report module was appended to the main survey to examine self reported BBV prevalence and testing. Contextual and motivational factors underlying users' decisions to undergo testing were also explored. This issue of the *Drug Trends Bulletin* presents the major findings of this BBV module. Where appropriate, comparisons have been drawn between the findings of the 2006 IDRS IDU Survey and the findings of the 2006 NSP Survey.

Demographics

In general, the demographic characteristics of the IDRS and NSP Survey samples were similar (Table 1). Approximately two-thirds of both samples were male, their mean ages were in the mid-30s and close to half of both samples reported injecting daily or more often during the month preceding the relevant survey. Approximately half of respondents in both samples reported a prison history and similar proportions were currently enrolled in methadone or buprenorphine maintenance treatment.

The great majority of both samples reported an injecting history of three or more years, suggesting that recent initiates to injecting may constitute only a small proportion of the contemporary Australian IDU population. This is consistent with other research which has identified an increase in the median age of regular heroin users and a possible reduction in initiation to heroin injecting (Day et al., 2006). It has been suggested that younger, less entrenched heroin users may have dropped out of the heroin market altogether following the national reduction in heroin availability in 2001 (Degenhardt et al., 2005). Indeed, it is estimated that since the heroin shortage, the size of the overall population of injecting drug users in Australia has decreased (Razali et al., 2007).

Table 1: Demographics (IDRS and NSP Survey, 2006)

	NSP Survey N=1961	IDRS N=914
Mean age in years (SD, range)	34.8 (8.9; 13-68)	34.5 (8.9; 16-63)
Male (%)	65	64
Heterosexual (%)	82	86
Indigenous Australian descent (%)	10	13
Prison history (%)	48	51
<i>Current drug treatment (%)</i>		
Methadone maintenance	29	27
Buprenorphine maintenance	13	10
Injecting history of ≥ 3 years (%)*	91	98
Injected daily or more often in last month (%)	47	46

*refers to number of years since first injected; does not account for periods of abstinence

The samples were similar in terms of the last drug injected, with methamphetamine followed by heroin the two most commonly nominated drugs in both samples (Table 2). Heroin was slightly more common among the IDRS sample (32%) than the NSP Survey sample (26%); this is likely an artefact of IDRS recruitment being restricted to major metropolitan centres. Among both samples, injection of drugs other than methamphetamine and heroin during the last injecting episode was substantially less frequently reported.

Table 2: Last drug injected (IDRS and NSP Survey, 2006)

	%NSP Survey N=1961	% IDRS N=914
Methamphetamine	38	38
Heroin	26	32
Morphine	11	15
Methadone	9	5
Buprenorphine	5	5
Cocaine	2	<1
Other drugs	6	3

BBV status

While the IDRS relies on self-report to estimate BBV prevalence, the NSP Survey utilises serological testing for the presence of antibodies. Self-reported prevalence of HIV among IDRS participants was low (2%), a finding validated by the low prevalence of antibodies detected among the blood samples provided by NSP Survey participants (2%). Likewise, self-reported prevalence of HCV infection among IDRS participants (57%) was also similar to serology results of the NSP Survey (62%). The concordance between self-reported prevalence among IDRS participants and serological prevalence among NSP Survey participants validates the self-report methodology employed by the IDRS. Data on self-reported hepatitis B (HBV) status are omitted due to concerns regarding reliability of self report in the absence of serology data (Schlichting et al., 2003; Lo Re et al., 2007).

In the wider Australian community, incident hepatitis C notifications have decreased since 2001 (e.g. O'Brien et al., 2007). In New South Wales, this has been particularly noted among those aged 15 - 19 years, and is attributed to a decrease in initiation to injecting drug use among this group (Day et al., 2004, Day et al., 2005).

Injecting history and HCV status

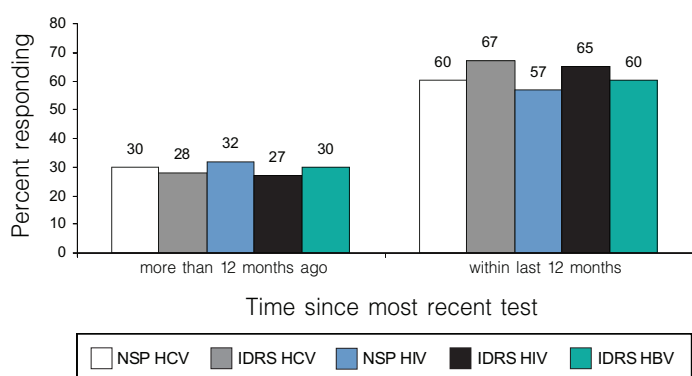
The median length of time since first injection was 13 years among IDRS participants (range <1 year - 43 years) and 14 years among NSP Survey participants (range <1 - 45 years). Consistent with the literature (e.g., Judd et al., 2005; Maher et al., 2004), self-reported

HCV prevalence among IDRS participants and prevalence of HCV antibodies among NSP Survey participants was strongly related to duration of injecting. Twenty-four percent of the IDRS sample who had been injecting for less than three years reported being hepatitis C positive, compared with 57% among those with longer injecting histories (OR=4.4; 95% CI: 1.4-13.5). Similarly, HCV antibody prevalence was 18% among NSP Survey participants who initiated injecting within the preceding three years, compared to 64% among those with an injecting history of three or more years (OR=8.1; 95% CI: 4.8-13.6).

BBV testing

Reported rates of testing for all BBVs were high. A history of HCV testing was reported by 96% of IDRS participants and 90% of NSP Survey participants. Previous HIV testing was reported by 92% of IDRS participants and 89% of NSP Survey participants. Around two-thirds of both the IDRS and NSP Survey samples had been tested for HCV or HIV within the preceding 12 months (Figure 1). Three percent (n=29) had never been tested for HIV, HBV or HCV.'

Figure 1: Time elapsed since last BBV test (IDRS and NSP Survey, 2006)



In both samples, rates of recent testing were slightly lower among those who had initiated injecting within the preceding three years (who constituted small proportions of the overall samples) than among those with a longer injecting history. Nonetheless, between one-half and two-thirds of both groups of new initiates had undertaken recent testing for HIV and HCV (Table 3).

Table 3: Rates of recent (preceding 12 months) testing by duration of injecting (IDRS and NSP Survey, 2006)

Recent (past 12 months) testing (%)	Injected < 3 years		Injected 3+ years	
	NSP Survey	IDRS	NSP Survey	IDRS
HCV	53	68	62	68
HIV	55	57	58	66

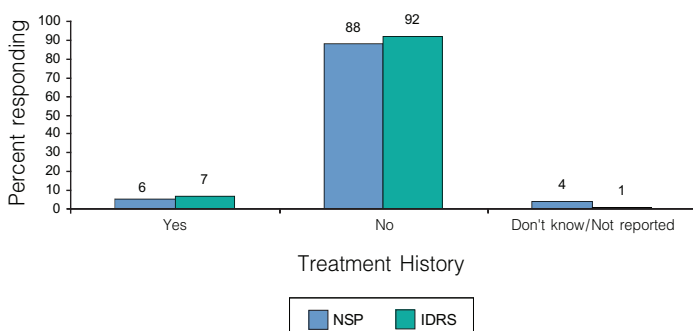
The most common reason reported by IDRS participants for undergoing BBV testing was that they saw testing as a matter of routine, followed by the insistence or recommendation of a health professional. Other common responses were that they believed it to be a sensible or responsible thing to do; that they were monitoring an existing infection; concern that they had been exposed via injection and/or that they were tested on induction to prison.

Conversely, the 34% of respondents who had not been tested within the last twelve months for one or more BBV were asked why this was the case (note: they may have been tested for other BBV in this time). The most common reasons centred around a lack of motivation towards getting tested, followed by having never shared needles. Other common reasons included having never shared other injecting equipment, a lack of interest or not wanting to know, or that they considered it unnecessary due to already testing positive for antibodies. A number of participants reported that they felt that they did not need to be tested because they considered themselves to be in good health. No participants reported that they were unaware of the risk of BBV infection or that they did not know that testing was available.

BBV treatment

Just 7% of IDRS participants and 6% of the NSP Survey sample reported having undertaken antiviral therapy (AVT) for chronic HCV infection (Figure 2). These low rates of treatment uptake are consistent with data from the Commonwealth Pharmaceutical Benefits Highly Specialised Drugs (S100) program which indicates that only around 2000-2500 people with chronic HCV infection receive AVT. Under current treatment scenarios, the numbers of people living with chronic infection, advanced liver disease and cirrhosis are projected to increase by about 38% by 2015, and at least a tripling of treatment rates would be required to decrease the burden on the health care system of long-term sequelae of HCV infection (Razali et al. 2007).

Figure 2: Proportions who had received treatment for HCV (IDRS and NSP Survey, 2006)



Although AVT for chronic HCV infection has improved considerably in recent years, it is still prolonged, invasive, and risks potentially serious adverse side-effects (Dore & Thomas, 2005). In the last six years, two significant barriers to accessing government funded treatment have been removed. Prior to May 2001, a 12-month period of abstinence from injecting drug use was required. Retraction in April 2006 of the prerequisite of a biopsy to ascertain the extent of liver damage was a second considerable advance. Biopsy had been an obstruction to treatment uptake, due to the painful and invasive nature of the procedure, along with the fact that it must be performed in a hospital setting.

Even with such concerted efforts to increase treatment access, and improved treatment outcomes, treatment uptake for chronic HCV infection among people who formerly and currently inject drugs remains low. Currently, HCV treatment is provided largely through hospital-based liver and hepatitis clinics, and supervised by approved specialist physicians; treatment availability in other settings is extremely limited. Despite the close association between injecting drug use and HCV infection, few HCV treatment programs or clinics are conducted by specialists with dual expertise in the care of both liver disease and drug dependence, or offer parallel treatment of drug dependence and HCV. Yet the high HCV prevalence among people in opioid pharmacotherapies, the required regularity of attendance at these clinics, and low rates of referral for HCV treatment clearly indicate that a major strategy to improve access to treatment and care among those who inject drugs would be the development of specific HCV treatment expertise, and associated BBV service provision, within drug treatment settings (Hallinan et al., 2007).

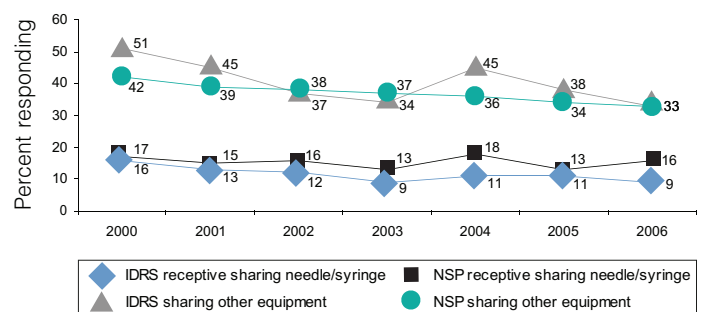
Sharing of injecting equipment

Among IDRS participants, 9% reported having used a needle after somebody else (receptive syringe sharing) in the preceding month (Figure 3). Most reported that they had done so on only one occasion in that time, and generally that just one other person had used the needle before they did. Typically, these were regular sex partners or close friends. Fifteen percent of IDRS participants reported distributive syringe sharing (lending) of needles and syringes in the preceding month, generally on one or two occasions during that period. Higher proportions of the sample reported having shared other injecting equipment during the preceding month, most often spoons/mixing containers (25%), water (14%), tourniquets (12%) and filters (8%). Note: Data on equipment sharing include the sharing of both new and/or re-used equipment. While sharing of equipment such as spoons and filters may not pose a risk for BBVI transmission where all equipment is sterile, these data err on the side of caution.

NSP Survey participants reported slightly higher rates of recent receptive sharing of needles and syringes than IDRS participants in all survey years since 2000. This may be due, at least in part, to differences in the methodology of the two Surveys. The IDRS IDU

Survey is interviewer administered, whereas the NSP Survey is designed for self-completion. Interviewer administered surveys have the potential to underestimate the prevalence of stigmatised behaviours, particularly needle and syringe sharing (White et al., 2007).

Figure 3: Receptive sharing of needles and syringes and sharing other injecting equipment (IDRS and NSP Survey, 2000-2006)



Although reported rates of receptive sharing of needles and syringes declined from 16% in 2000 to 9% in 2006 among IDRS participants, this trend was not evident among participants in the NSP Survey (Figure 4). Rates of distributive sharing among IDRS participants remained relatively stable during that time (11-15%; a measure of distributive sharing is not included in the NSP Survey). Reported rates of sharing of other injecting equipment decreased from 51% in 2000 to 33% in 2006 among IDRS participants and from 42% in 2000 to 33% in 2002 among NSP Survey participants.

Among both the IDRS and NSP Survey samples, there have been reductions over time in reported sharing of all items of other injecting equipment, yet, despite these reductions, one in three IDUs continued to report sharing injecting equipment, and between one in ten and one in six reported receptive sharing of needles and syringes. If these risk behaviours are to decline further, broader NSP initiatives may be required, including increasing the accessibility of clean injecting equipment through the installation of vending machines (currently available only in some jurisdictions) and the extension of NSP operating hours.

Policymakers should also remain cognisant of the substantial research indicating that the risk of BBV transmission is accepted as an inherent part of the lifestyles of many people who inject drugs, and constitutes simply one of many risks inherent in the uncertainty of many drug use environments (e.g., Maher et al., 1998; Moore & Dietze, 2005). The assumption that increasing an individual's awareness of risk and risk reduction strategies necessarily translates to changes in behaviour is simplistic (Karpati et al., 2002). The broader contexts in which individual level risks and harms are prioritised means that initiatives to tackle homelessness, poverty alleviation, employment and training needs, and social exclusion and marginalisation (Kerr et al., 2007; Rhodes et al., 2007) may be necessary pre-requisites to risk reduction.

Conclusions and Implications

- The aims, and consequently the methodologies, of the IDRS and the NSP Survey are different. Broadly speaking, the NSP Survey undertakes serological testing to monitor HIV and HCV antibody prevalence and related risk behaviours issues among NSP clients, whereas the IDRS focuses on documenting emerging issues in drug markets, drug use and related issues. Nonetheless, this issue of the *Drug Trends Bulletin* has documented notable similarities between the samples.
- Initiation to injecting within the last three years was relatively uncommon in both samples, suggesting that recent initiates to injecting may constitute only a small proportion of the contemporary Australian IDU population. This is consistent with other research which has identified an increase in the median age of regular heroin users and a possible reduction in initiation to heroin injecting (Day et al., 2006a). It has been suggested that younger, less entrenched heroin users may have dropped out of the heroin market altogether following the 2001 reduction in heroin availability (Degenhardt et al., 2005). Indeed, it is estimated that since the heroin shortage, the size of the overall population of injecting drug users in Australia has decreased (Razali et al., 2007), a proposition supported by a decrease in incident hepatitis C notifications (Day et al., 2005).
- High rates of lifetime BBV testing were reported by both the IDRS and NSP Survey samples, with around two-thirds of IDU participants in both groups undergoing testing for both HIV and HCV in the preceding 12 months. Rates of recent testing were slightly lower among those who had initiated injecting within the preceding three years (who constituted small proportions of the overall samples) than among those with a longer injecting history. Nonetheless, between one-half and two-thirds of both groups of new initiates had undertaken recent testing for HIV and HCV. This suggests that health promotion efforts have been successful in engaging both recent initiates and longer-term injectors, in addition to reflecting interest/concerns about BBV status among a large proportion of NSP attendees. However, other research has indicated that work remains to be done to increase participants' understanding of such test results, particularly in relation to HBV (e.g. Day et al., under review) and HCV (e.g. O'Brien et al., 2006).
- The most common reasons for undertaking testing were as a matter of routine and/or subsequent to recommendation by a health professional. Various reasons for not undergoing testing were also offered, most often related to apathy. No participants reported that they had been unaware that testing was available.
- Sharing of needles/syringes and other injecting equipment has decreased over time, but continues to occur at substantial rates,

suggesting a need for expansion of NSP initiatives such as vending machines, and an acknowledgement of the social contexts in which individual risk behaviours occur (De et al., 2007). Ultimately, this issue is likely to require consideration of broad structural interventions which address issues such as homelessness, poverty and education and employment needs (Rhodes et al., 2007).

- Despite efforts to improve access to antiviral therapy for HCV infection and improved treatment outcomes, treatment uptake for chronic HCV infection remains low among people who inject drugs. The expansion of BBV service provision and the development of HCV treatment expertise within drug treatment settings may help to increase uptake in this group (Hallinan et al., 2007).

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