

# centre lines

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## issuing forth

Comorbidity among heroin users:  
a problem in search of a solution

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## edspace

In recent times NDARC has grown considerably. I have now been working at the Centre for 10 years and in that time I have seen amazing changes in the organisation. In 1993 there were 12 research staff working on a range of projects examining heroin overdose, amphetamine use, alcohol interventions, the quality assurance project and long-term cannabis use. We now have over 50 staff and almost the same number of projects.

Part of the challenge for NDARC has always been to ensure the work that we carry out makes its way to frontline workers and drug users as quickly as possible. We acknowledge that new trends, innovations in treatment and other information must be disseminated widely, and although we are an academic institution and publication in journals is important, we must never lose sight of how vital research findings are to health workers and their clients. We have attempted to reach these groups in a variety of ways including regular Symposiums, presentations at conferences, both here and abroad, media dissemination, and of course our range of resources which have continued to prove popular across the country.

The internet has also proven to be an extremely effective way of disseminating information to a wide audience. Our website is now one of the most popular sites accessed through UNSW and provides a full list of our publications and downloadable fact sheets on a variety of drugs and drug issues.

We are currently working on making many full-text versions of our Technical Reports and Monographs available on the web. This is a huge job and we will hopefully have this completed by the middle of the year.

If you haven't visited our site, the address is <http://ndarc.med.unsw.edu.au>

*Paul Dillon*  
Editor

*CentreLines is a joint publication from the National Drug and Alcohol Research Centre, Sydney and the National Drug Research Institute, Perth. It is published bi-monthly and produced alternately by each Centre.*

## No simple answers

Maree Teesson

Over 70,000 Australians are dependent on heroin and heroin dependence remains remarkably persistent and is often a lifelong condition. Heroin is indeed a major public health concern in Australia. There are obviously no simple answers.

A large research project has been underway in Australia with the aim of getting a better understanding of the natural history of heroin use. Users' mortality, abstinence, criminality and psychiatric comorbidity is being studied so that this may potentially guide more effective interventions and public health responses.

The Australian Treatment Outcome Study: heroin (ATOS)<sup>1</sup> will for the first time describe the natural history of Australian heroin users. The study is co-ordinated by NDARC and represents a collaborative effort across states (NDARC in NSW, Turning Point in Victoria and DASC in SA) and between researchers, the providers of treatment services and users themselves. Dr Joanne Ross, the project manager and a lecturer at NDARC outlines findings from the NSW component of the study in *Issuing Forth*.

Such longitudinal research is crucial for a better understanding of a persistent problem such as heroin dependence. It has been well documented that mortality among heroin users is high. Annual mortality rates reported by overseas longitudinal studies are in the order of 2-3%, and the standardised mortality ratio of heroin users is 13 times that of peers<sup>2</sup>.

Long-term treatment outcome and abstinence among this group is poor. Hser et al<sup>3</sup> recently reported on a 33 year follow-up of treatment admissions for opioid dependence. Twenty one percent of those followed up had morphine positive urines, and 41% had used heroin in the preceding year. Only 47% had ever achieved abstinence for a period of more than five years. Similarly, 41% of methadone maintenance entrants followed up at 22 years were current heroin users<sup>4</sup>. Heroin users frequently commit crime to sustain heroin use, with approximately one half reporting criminal behaviour in any preceding month, and approximately one half arrested in any particular year<sup>5</sup>.

Longitudinal research such as ATOS is crucial to a better response to problems associated with heroin use. It provides the opportunity to address the issue of how crime relates to heroin use, i.e. whether crime is primarily committed to support heroin use, or whether heroin use is a concomitant factor in a pre-existing criminal history. Similarly, there are high rates of mental disorders such as depression and post traumatic stress disorder in this group, a

variable that has been strongly related to poorer treatment outcome. Data on psychopathology are of import in determining the long-term consequences of heroin use, and in determining the value of treatment in achieving long-term abstinence and reducing heroin-related harm. Again, the issue of causality may be addressed. Thus, do levels of psychopathology decline with reductions in heroin use, or is heroin use a result of pre-existing psychopathology? The answers to questions such as these have implications for the allocation of treatment resources for heroin users, and the benefits that may be expected from interventions among this group.

The Australian Treatment Outcome Study is an important project, beginning to address these challenges. **cl**

## issuing forth

### Comorbidity among heroin users: a problem in search of a solution

Joanne Ross

It has been well established that psychiatric comorbidity is the rule rather than the exception among heroin users. Studies of psychiatric comorbidity among people seeking treatment for heroin dependence have reported that up to 80 percent of treatment seekers have at least one other psychiatric disorder, most commonly mood disorders, anxiety and ASPD<sup>1,3</sup>. In addition, high rates of Post-Traumatic Stress Disorder (PTSD) and borderline personality disorder (BPD) have been reported among dependent heroin users<sup>4,5</sup>.

The high prevalence of psychopathology among heroin users has direct implications for treatment outcome and clinical practice. Psychopathology has consistently emerged as a significant predictor of poor treatment outcome<sup>6</sup>, and has been associated with higher levels of HIV risk-taking and HIV infection, greater severity of substance use, and higher levels of psychosocial impairment. However, relatively little is known about differences in psychopathology between heroin users in and outside treatment, and it is unclear whether results can be generalised from one treatment modality to another. Despite widespread and growing interest in the study of psychiatric comorbidity there is relatively little longitudinal research which has examined the influence of

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co-existing psychiatric disorders on the outcome of treatment for substance use problems, and no such research has been conducted in Australia.

The Australian Treatment Outcome Study (ATOS)<sup>7</sup> is the first large scale, longitudinal study of treatment outcome for heroin dependence to be conducted in Australia, and one of the few to be conducted anywhere in the world. ATOS is coordinated by NDARC and conducted in collaboration with the Drug and Alcohol Services Council (DASC) and Turning Point Alcohol and Drug Centre. One of the important advantages ATOS has over similar longitudinal studies conducted internationally is the richness of the psychiatric data collected at baseline using standardised and validated instruments. ATOS was specifically designed to examine the effect of psychiatric comorbidity on treatment outcome, while also assessing the extent to which psychopathology is ameliorated following treatment. At baseline participants were assessed for current Major Depression, general mental health, PTSD, ASPD and BPD, all of which are likely to impact on treatment outcome. Major Depression and general mental health were reassessed at 3 and 12 months.

Specifically the aims of ATOS are to describe the characteristics of people entering treatment

for heroin dependence, and to examine treatment outcomes (e.g. drug use, criminality and psychiatric comorbidity) at 3 and 12 months after the commencement of treatment. Discussion here will be restricted to the characteristics of the NSW based ATOS participants. Five hundred and thirty five heroin users were recruited at baseline on entry to the three main treatment modalities: maintenance therapies (methadone and buprenorphine); detoxification services; and residential rehabilitation. In addition, a comparison group of 80 heroin users not seeking treatment was recruited. To date, baseline recruitment and 3 month follow up interviews have been completed, and twelve-month follow up interviews are ongoing.

Overall, the NSW ATOS cohort is a typical group of long term, dependent heroin users, with a history of extensive polydrug use. At baseline, the cohort exhibited an extremely high level of psychiatric distress. A quarter had a current diagnosis of Major Depression, and a third had ever attempted suicide. In addition, 41% met criteria for PTSD. Given that over 90% of the sample had experienced at least one of the extremely stressful or upsetting events that may trigger PTSD, it is remarkable that the rate of PTSD was not higher. The ATOS cohort is a group whose lives are characterised by trauma.

Personality disorders were also prevalent among the sample, with almost three quarters meeting DSM-IV criteria for ASPD and half screening positive for BPD. Participants were assessed for ASPD because it is commonly cited in the literature as a strong predictor of poor treatment outcome. It should be noted, however, that there are serious problems with this diagnosis when applied to heroin users, in that many of the criteria are based upon criminal behaviours often associated with a heroin using lifestyle. This is not the case with BPD, a diagnosis that is associated with impulsivity, self-harm and chronic feelings of emptiness. It is important to note that while considerable psychiatric distress was reported by ATOS participants across all treatment modalities, these appeared most severe among the residential rehabilitation group. These participants were more likely to meet criteria for both PTSD and BPD, and to have ever attempted suicide, than other treatment modalities.

Such extremely high levels of comorbidity have serious implications for treatment providers treating individuals with heroin dependence. Clearly, the management of comorbidity is difficult and complicated. The ATOS cohort for instance, has cycled in and out of treatment for their dependence over several years. Yet despite this exposure to treatment, the level of psychopathology among this group remains high. The debate about how to effectively treat comorbid psychiatric disorders has been raging for decades, with no obvious advances having been made.

The treatment of comorbidity inevitably requires a holistic approach. By way of an analogy, a general practitioner seeing a patient with co-

existing diabetes and asthma would be deemed negligent if they were to treat the asthma and ignore the diabetes. No doubt a positive treatment outcome is also dependent on patient compliance, but the doctor has a duty of care to provide appropriate treatment in the first instance. Why then should it be any different for individuals with comorbid heroin dependence and psychiatric morbidity seeking treatment?

There is ongoing rhetoric about the need to share the case management of these clients between mental health and drug and alcohol services, but it is questionable how effectively this is being managed in practice. The rates of depression and attempted suicide among heroin users are alarmingly high, and given that Major Depressive illness is associated with a 20 fold increased risk of completed suicide<sup>8</sup>, it is imperative that such disorders are treated. Barriers preventing effective shared case management from occurring need to be overcome. Indeed, a National Working Party on Comorbidity has been established by the Commonwealth Department of Health and Aged Care in an attempt to identify such barriers. The true challenge to treatment providers in both the mental health and the drug and alcohol setting is determining how best to achieve a holistic treatment approach to heroin dependence within the current segmented treatment system. **CI**

## project notes

### Evaluation of the NSW prison methadone program: A four year follow up study

*Bethany White, Kate Dolan, James Shearer, and Alex Wodak*

It is widely acknowledged that methadone maintenance treatment (MMT) is effective in the treatment of opioid dependence in community settings. MMT has been found to reduce heroin consumption, HIV transmission, mortality and criminality. MMT has a higher rate of retention than other forms of treatment.

Prison-based MMT has also been shown to be beneficial. Fifty percent of NSW prison inmates have a history of injecting heroin and fifty percent of these continue to inject heroin while in prison. The risk of hepatitis C and HIV transmission is increased by high rates of sharing injecting equipment between inmates. In 1997 NDARC conducted a randomised controlled trial (RCT) of MMT in NSW prisons that found methadone treatment reduced heroin use and injection in prison. Subjects who received treatment were also less likely to report needle and syringe sharing.

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To investigate the impact of prison MMT on long-term outcomes, a follow up study was undertaken from 2000 to 2002. The primary aims of this study were to re-interview and check records of all 382 subjects involved in the original RCT. Subjects were contacted and re-interviewed in prison and in the community via methadone clinics, probation and parole offices and via letters sent to last known addresses. Those re-interviewed were asked to provide finger prick blood samples and samples of hair. HIV and HCV incidence was determined by serology and recent heroin use was confirmed by hair analysis.

Mortality, re-incarceration and retention in treatment rates were obtained via records. Statewide record checks included NSW Registry of Births, Deaths and Marriages, the Pharmaceutical Services Branch (methadone records) and prison medical records. Nationwide record checks included the Australian Institute of Health and Welfare's National Death Index and the Department of Corrective Services in all states and territories.

The majority of subjects who were originally allocated to receive methadone treatment (87%) and to the control condition (89%) were relocated. This included those who were re-interviewed (61%, 60%) and those who were located (in prison or in treatment) but not re-interviewed (26%, 29%). Those located and not re-interviewed were either incarcerated

interstate, declined to participate or were registered as deceased. The remaining treated (13%) and control (11%) subjects who were lost to follow up were not currently in prison anywhere in Australia, not receiving methadone treatment in NSW and not registered as deceased.

The majority of subjects were reinterviewed in prison (84%, 89%). Of those re-interviewed, most provided a finger prick sample of blood (95%, 94%) and a hair sample (79%, 79%).

Preliminary analysis indicates that subjects currently in methadone treatment report significantly less use and injection of heroin and less injection of any drug. Subjects in treatment scored significantly lower on the OTI needle risk scale reflecting lower amounts of risk behaviour. HIV prevalence remained low (1%, 2%) and HCV prevalence remained high (78%, 84%) in the treated and control groups respectively.

Analyses of long term outcomes such as mortality, HCV incidence and re-incarceration are currently underway. So far this study supports previous research that shows MMT, whether received in the community or in prison, reduces heroin use and injection and the shared use of needle and syringes. However, the provision of methadone in prison remains limited in other Australian states and overseas. Given the high prevalence of BBVI risk behaviour in prison, high prevalence of HCV, and potential rapid HIV transmission, a reduction in this risk behaviour should be considered as evidence for the expansion of this program.

Given the original trial was not designed as a longitudinal study, the follow up rate achieved is substantial. The current study has been able to track the majority of subjects in and out of prison over a four to five year period and document treatment experience in prison and in the community. We are collaborating with the Centre for Health Economics, Research and Evaluation to use these results in a cost effectiveness analysis of the NSW prison methadone program.

## National Illicit Drug Indicators Project (NIDIP)

*Bridget Barker and Louisa Degenhardt*

To develop a clear understanding of illicit drug use in Australia, it is necessary that policy makers have access to reliable and timely information on drug consumption and related harms. The IDRS is an early warning system designed to identify changes in illicit drug markets using sentinel sites and innovative data collection methods (namely, interviews with injecting drug users, key informant interviews and the collection of indicator data such as overdose deaths, arrest data and drug treatment numbers). Data collected by the IDRS has allowed timely information about trends in illicit drug markets, leading to a greater ability of health and law enforcement agencies to make timely and evidence based decisions about practice.

One of the major issues facing the IDRS is that there is variable indicator data across

jurisdictions; different jurisdictions are differentially able to obtain data from agencies, and there are limited resources at the jurisdictional level for the IDRS to devote to identifying and evaluating existing and new indicator data sources. This meant that there was a need for and increased breadth and consistency of data collection across jurisdictions. The National Illicit Drug Indicators Project (NIDIP) was developed in direct response to these issues: one of NIDIP's major roles is to complement the IDRS by increasing the standardisation, quality, detail, timeliness and comprehensiveness of data collected.

The focus of NIDIP is to identify all of the relevant illicit drug-related indicator data collected in Australia, including those data sources not currently utilised by the IDRS, and to critically evaluate the strengths and weaknesses of these datasets. All data has its strengths and weaknesses, for example, Australian Bureau of Statistics (ABS) data on overdose deaths has been collected for decades, and is coded according to ICD classification systems, however it is not timely in that it is not available until almost the end of the following calendar year.

NIDIP will provide an opportunity to report on a range of issues related to illicit drugs using detailed analyses of indicator data, particularly with the use of data from different sources. This last point is important, as there is a need for the use of data from a range of sources to overcome the limitations of any one source.

All of these elements contribute to the fundamental purpose of the project, which is to improve the understanding of, and systematically track changes in, heroin and psychostimulant use and related harms. This project will provide a number of benefits, including enhanced dissemination of information on heroin and psychostimulant use and harms, and a greater ability of agencies and policymakers to assess the need for, and outcomes of, policy and other interventions.

The project involves identifying and collecting data from a large number of national and jurisdictional-based data collection systems. Data indicators will be collected across five broad themes: prevalence of use, morbidity, treatment, mortality and law enforcement.

Access to much of the national data of interest has been requested and access has been approved. These datasets include: National Drug Strategy Household Survey (NDSHS); Australian Illicit Drug Report (AIDR); Pharmacotherapy Client Statistics; National Hospital Morbidity Database (NHMD); Causes of Death (COD) Collection; National Coroners Information System (NCIS); Bettering the Evaluation and Care of Health (BEACH); Doctor Shopper Program; Australian Customs Service data; and data from the Australian Federal Police. Other national datasets, such as the Australian Needle and Syringe Program Survey, Australian Secondary School Alcohol and other Drugs Survey (ASSADS), the National Ambulance Non-fatal Opioid Dataset, National

Minimum Data Set for Alcohol and other Drug Services (NMDS-AODTS), Drug Use Monitoring in Australia (DUMA), National Notifiable Diseases Surveillance System and the National HIV database publish their own results, and these will be highlighted by NIDIP.

Possible issues with national data include the lack of geographical specificity, the lack of national datasets for some types of data (such as accident and emergency admissions, and calls to phone helplines about problematic drug use) as well as the time lags associated with some types of data (e.g. mortality data is released up to two years after death).

To circumvent these problems jurisdictional data is also recommended for monitoring. Jurisdictional data of interest includes: accident and emergency admissions; drug-related phone calls to help-lines; needle and syringe distribution data; HBV, HCV and HIV notifications where injecting drug use is an exposure factor; and toxicology data on drug intoxicated drivers.

To date, data has been requested from all (and accessed from some) of the relevant agencies in the following jurisdictions: QLD, SA, WA, NT & TAS. Requests still need to be made to the relevant agencies in Victoria, NSW and the ACT. Possible issues with jurisdictional-based data is that it is more time consuming to access, since requests need to be made to each of the jurisdictions relevant agencies; the same data may not be collected by all jurisdictions; and data may not be strictly comparable between jurisdictions due to different collection methods.

It is envisioned that information from NIDIP will be available in several ways: regular brief bulletins; journal articles; and web-based bulletins and links. This will provide an accessible and more complete picture of trends in use and harms over time.

By April 2003, a bulletin examining trends in the main drug classes across a number of key indicators will be produced. Journal articles examining general population patterns of ecstasy use, and trends in accidental deaths related to cocaine and methamphetamine will be ready for submission. By May 2003, it is anticipated that data from all of the relevant jurisdictional agencies will have been requested. **CI**

## Alcohol and other drug use disorders among homeless people in Australia

*Substance Use and Misuse* 38, 3-6, 465-476, 2003

Maree Teesson, Tracey Hodder and Neil Buhrich

This paper describes alcohol and drug-use disorders among 210 homeless people in Australia, and compares the Australian findings with the international literature. While the prevalence of alcohol-use disorders among people who are homeless in Australia is comparable with other international studies, drug-use disorders appear to be more prevalent among Australian homeless than comparable international studies. Reasons for this difference are explored.

## Schizophrenia among homeless people in inner-Sydney: current prevalence and historical trends

*Journal of Mental Health* 12, 51-57

Neil Buhrich, Tracey Hodder and Maree Teesson

**Background:** There are high prevalence rates of schizophrenia among people who are homeless. Whether the prevalence has increased over the past two decades remains unclear.

**Aims:** To assess the prevalence of schizophrenia among people who use refuges for the homeless, and to compare the current prevalence to prevalence rates in the same refuges since 1983.

**Method:** Two hundred and ten homeless men and women residing at or visiting the seven largest refuges in inner-Sydney were screened for possible psychosis. Persons who screened positive for psychosis were referred to the psychiatrist for diagnosis of possible or definite schizophrenia. The BPRS-E (expanded Brief Psychiatric rating scale) was completed for all participants with possible or definite schizophrenia.

**Results:** The prevalence rate for possible or definite schizophrenia among the men was 23% to 30%. This compares to 16% in 1983 and 26% in 1988. The current prevalence for women was 46% to 50% which compares to 33% in 1989; a difference which is not significant. The majority of participants with schizophrenia were scored as having 'non-pathological symptoms' on the BPRS-E.

**Conclusions:** The prevalence of schizophrenia has remained relatively stable over the past two decades despite deinstitutionalisation continuing over the same period.

## The emergence of potent forms of methamphetamine in Sydney, Australia: a case study of the IDRS as a strategic early warning system

*Drug and Alcohol Review* 21, 341-348

Libby Topp, Louisa Degenhardt, Sharlene Kaye and Shane Darke

A striking finding of the Illicit Drug Reporting System (IDRS) in recent years has concerned the emergence in Sydney of a number of different forms of potent methamphetamine. This paper demonstrates the operation of the IDRS in detecting and documenting an increase in both the availability and use of these forms of methamphetamine in Sydney, and Australia more widely, since 1998. Data from different components of the IDRS are utilised to propose that there are currently at least three forms of methamphetamine available in Sydney that are considered by the market to be distinct commodities: methamphetamine powder ('speed'), base methamphetamine ('base') and crystalline methamphetamine ('ice'/'shabu'/'crystal meth'). Base and ice are more potent forms of methamphetamine than speed, and international experience, along with preliminary data obtained from the IDRS, suggest that their use is associated with harms in a number of domains.

## Patterns of co-morbidity between alcohol use and other substance use in the Australian population

*Drug and Alcohol Review* 22, 7-13

Louisa Degenhardt and Wayne Hall

The present study describes patterns of co-morbidity between alcohol use and other substance use problems in the Australian population using data from the 1997 National Survey of Mental Health and Well Being. Multiple regression analyses examined whether the observed associations between alcohol and other drug use disorders were explained by other variables, including demographic characteristics and neuroticism. We also assessed whether the presence of co-morbid substance use disorders affected treatment seeking for a mental health problem. Alcohol use was related strongly to the use of other substances. Those who did not report alcohol use within the past 12 months were less likely to report using tobacco, cannabis, sedatives, stimulants or opiates. Higher rates again were observed among those with alcohol use disorders: half (51%) of those who were alcohol-

dependent were regular tobacco smokers, one-third had used cannabis (32%); 15% reported other drug use; 15% met criteria for a cannabis use disorder and 7% met criteria for another drug use disorder. These associations were not accounted for by the demographic and other variables considered here. Co-morbid substance use disorders (sedative, stimulants or opioids) predicted a high likelihood of seeking treatment for a mental health problem among alcohol-dependent people.

## 'Crystal meth' use among polydrug users in Sydney's dance party subculture: characteristics, use patterns and associated harms

*International Journal of Drug Policy* 14, 17-24

Louisa Degenhardt and Libby Topp

**Aim:** To examine the characteristics of a small sample of crystal methamphetamine users ('crystal meth') and their history of crystal meth and other drug use, to assess the extent and context of crystal meth use; and to document the perceived psychological and physical side effects of use.

**Method:** A sample of 45 persons reporting the use of crystal methamphetamine was recruited from a variety of sources and administered a structured interview regarding their methamphetamine use and related harms. Reports of side effects among this sample of methamphetamine users were compared with those reported by a sample of much heavier, longer-term and predominantly injecting amphetamine powder users, a related but less potent form of this class of drug.

**Findings:** The sample was largely male, highly educated and employed. Most users had experience with a variety of party drugs, of which crystal methamphetamine was a relatively recent addition. Many users had not had extensive experience with the drug; despite this, high rates of significant physical and psychological side effects were reported. Comparison with amphetamine users revealed that similar proportions of both groups reported most symptoms. Symptoms reflecting high doses of amphetamines (such as chest pains, heart palpitations, panic attacks) were reported by higher proportions of crystal methamphetamine users, whereas amphetamine users were more likely to report violent behaviour, hallucination, and headaches.

**Conclusions:** Despite relatively recent and infrequent use of crystal methamphetamine users were highly likely to report a wide range of significant side effects

## Prison-based syringe exchange programmes: a review of international research and development

*Addiction 98, 153-158*

*Kate Dolan, Scott Rutter and Alex Wodak*

Journal publication and conference presentations on prison-based syringe exchange (PSE) programmes were identified by a comprehensive search of electronic databases. Experts involved with development and evaluation of current PSE programmes or policy were contacted for reports, documents and unpublished material. Spanish information on PSE was translated for this review. We identified 14 papers specifically on PSE programmes in Switzerland (six papers), Germany (four) and Spain (four). The first PSE programme started in 1992 in Switzerland. As of December 2000, seven PSEs were operating in Switzerland, seven in Germany and five in Spain. There have been six evaluations of prison syringe exchange programmes and all have been favourable. Reports of drug use decreased or remained stable over time. Reports of syringe sharing declined dramatically. No new cases of HIV, hepatitis B or hepatitis C transmission were reported. The evaluations found no reports of serious unintended negative events, such as initiation of injection or of the use of needles as weapons. Staff attitudes were generally positive but response rates to these surveys varied. Overall, this review indicated that prison syringe exchange programmes are feasible and do provide benefit in the reduction of risk behaviour and the transmission of blood-borne infection without any unintended negative consequences.

## The prevalence and correlates of gamma-hydroxybutyrate (GHB) overdose among Australian users

*Addiction 98, 199-204*

*Louisa Degenhardt, Shane Darke and Paul Dillon*

**Aim:** The aim of this study was to examine the correlates, context and risk perceptions regarding gamma-hydroxybutyrate (GHB) overdose among a sample of recreational GHB users in Australia.

**Design:** A cross-sectional survey of 76 GHB users who were administered a structured interview on GHB use. They were asked a series of questions regarding whether they had ever experienced a GHB overdose, the context of their most recent GHB overdose, and about their perceptions of the risks of GHB overdose.

**Findings:** This sample of GHB users had not had a long or extensive experience with GHB use; despite this, half (53%) had experienced a GHB overdose. This sample of GHB users

appeared to be well-educated, employed and a history of either drug treatment or incarceration was uncommon. There were no differences between those who had or had not overdosed in terms of socio-demographic characteristics, extent of other drug use or typical patterns of other drug use when using GHB. However, those who had overdosed on GHB had used it more times during their life-time, and had been using it for a longer period of time.

**Conclusions:** GHB-related overdoses were common among a sample of GHB users who had only recently begun using the drug. The only apparent distinguishing factor between those who had and had not overdosed on GHB was the amount of experience with GHB use.

## Decreased heroin availability in Sydney in early 2001

*Addiction 98, 93-95*

*Carolyn Day, Libby Topp, David Rouen, Shane Darke, Wayne Hall and Kate Dolan*

**Aim:** To examine the veracity of reports of a substantial decrease in the availability of heroin in Sydney in January 2001.

**Design:** Cross-sectional survey.

**Setting:** Sydney, Australia.

**Participants:** Forty-one injecting drug users (IDUs) and 10 key informants (KIs).

**Findings:** Almost all IDUs (93%) reported that heroin was harder to obtain at the time of interview (mid-February 2001) than it was before Christmas 2000 and KIs concurred. IDUs (83%) and KIs (70%) also reported that the price of heroin had increased since Christmas, and that the purity of heroin had decreased (IDUs 73%; KIs 80%). Almost all IDUs reported a reduction in their heroin use and a subsequent increase in other drug use, particularly cocaine, benzodiazepines and cannabis. Similar reports about IDUs came from nine of the 10 KIs. Over half the KIs reported an increase in both property and violent crime as a result of the heroin shortage. This crime was reportedly occurring mainly between heroin suppliers and/or IDUs. Reports from other Australian jurisdictions suggest that the shortage was not specific to Sydney.

**Conclusions:** The reduction in the availability of heroin provides a unique opportunity to investigate the impact of supply reduction.

## Patterns of use and harms associated with non-ketamine use

*Drug and Alcohol Dependence 69, 23-28*

*Paul Dillon, Jan Copeland and Karl Jansen*

**Aim:** To 1) identify current patterns of non-medical ketamine use; and 2) identify potential harms associated with non-medical ketamine use.

**Design:** Cross sectional survey of lifetime ketamine users.

**Setting:** Semi-structured interviews took place in public and private settings in Sydney Australia.

**Participants:** 100 ketamine users.

**Measurements:** Self-reported experiences with and attitudes towards ketamine use.

**Findings:** Ketamine appeared to be added to an already extensive drug use repertoire of a well-educated and informed sample. Many users reported regularly experiencing effects such as an inability to speak, blurred vision, lack of co-ordination and increased body temperature, which resulted in some either reducing their dose or stopping use.

**Conclusions:** Many users had experienced significant negative effects, such that some had either reduced their dose or stopped use altogether and expressed concerns over some others. This study reinforces the need to develop harm minimisation campaigns that match the experiences and attitudes of their target group through careful needs assessment and appropriate evaluation.

## Drug use and its correlates in an Australian Prisoner Population

*Addiction Research and Theory 11, 89-101*

*Tony Butler, Michael Levy, Kate Dolan and John Kaldor*

The prevalence of past and present tobacco, alcohol, and illicit drug use is examined in a cross sectional random sample of prisoners. 789 male and female prisoners from 27 correctional centres across New South Wales (NSW) participated in the survey. Information was collected using a face-to-face interview on community and prison drug use, and intoxication while offending. Current tobacco use was reported by 72% of the sample. Use of alcohol by females was more likely than males to be classified as 'safe' according to the Alcohol Use Disorders Identification Test (39 vs. 26%). Overall, 64% of prisoners had used illicit drugs at some time in the past with cannabis and heroin the most common. Forty four percent of prisoners had a history of injecting drug use, with injecting prevalence significantly higher in females than males (64 vs. 40%) with approximately half of both male and female injectors reporting that they had injected while in prison. 'Harmful' or 'hazardous' use of alcohol was associated with imprisonment for violent crimes. Sixty two percent of property offenders had an injecting history. Correctional authorities need to ensure that drug treatment programmes are available to prisoners and consideration should be given to piloting needle and syringe exchange programmes in NSW prisons given the high levels of sharing injecting equipment in prison.

## The relationship of conduct disorder to attempted suicide and drug use history among methadone maintenance patients

*Drug and Alcohol Review 22, 21-25*  
**Shane Darke, Joanne Ross and Michael Lynskey**

In order to examine the effects of a diagnosis of childhood conduct disorder (CD) on history of attempted suicide and drug use, un-confounded by early on-set heroin use, 181 methadone maintenance patients who commenced heroin use after the age of 15 were interviewed. CD was diagnosed in 54% of patients. Compared to other patients, CD patients were younger and had less education. The onset of drug use, injecting drug use and heroin use occurred, on average, 2 years earlier than in other patients, and they had broader histories of injecting polydrug use. CD patients were more likely to have attempted suicide and to have been hospitalized after an attempt, and to have attempted suicide while enrolled in their current

treatment. The current study indicates that a history of CD increases the risk of attempted suicide over and above the higher risks associated with injecting drug use per se.

## The monitoring of drug trends in Australia

*Drug and Alcohol Review 22, 61-72*

**Fiona Shand, Libby Topp, Shane Darke, Toni Makkai and Paul Griffiths**

Recently, there has been increased recognition of the importance of drug information systems (DIS), highlighting the need for an internationally coordinated approach to data collection and advocating the regular assessment of a range of areas. Accurate information provides policy makers with the evidence to evaluate current strategies and to plan future strategies. An effective drug information system (DIS) must collect compre-

hensive, detailed and in-depth data, while also being sensitive to emergent trends and placing these changes into the context of longer-term trends. An integrated and comprehensive system combines both sensitive (or lead) and slower but more reliable lag indicators. This article reviews conceptual frameworks for DIS and developments in international systems. It then considers the range of DIS in Australia and then describes two integrated monitoring systems with an early warning function: the Illicit Drug Reporting System (IDRS) and the Drug Use Monitoring Australia (DUMA) Programme. Both systems collate sensitive lead indicators, and provide timely information about emerging drug trends in Australia. Together, these two systems are best-placed to provide effective early warning of new trends in illicit drug markets, and constitute an important component of the overall approach to the monitoring of drug use and associated harms in Australia. **CI**

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*For more information on or copies of these publications, please contact the relevant researcher*

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