

centre lines

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issuing **forth**

Examining Opiate Use in Pregnancy
from a Population Perspective

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edspace

Over the past few months warnings were issued across Australia that certain ecstasy tablets could possibly contain PMA. These pills appeared to be marketed as 'red Mitsubishi's'. In addition to this warning there were a number of ecstasy-related deaths which the media immediately linked to these pills. So what is the real story?

PMA (paramethoxyamphetamine) is an amphetamine-type drug with both stimulant and hallucinogenic properties. It has no medical use. Its effects are similar to those of MDA, although PMA is far more toxic. It first appeared as a recreational drug in North America in the early 1970s, usually sold as MDA, and became associated with fatalities soon after it entered into street use. In Ontario, for example, the deaths of nine young people were confirmed to be caused by PMA between March and August 1973. There were also a number of PMA-related deaths in South Australia in 1998.

In late September two young men were admitted to St Vincent's Hospital, Sydney after taking ecstasy. One was extremely ill and caused emergency workers great concern. In the following couple of days an email was circulated based on an element of truth but which also contained a number of inaccuracies. It said that two people were admitted to hospital (true), they had taken 'red Mitsubishi's' (supposedly true), one had died (false), toxicology had been carried out (false), and the pills were 10 times stronger than normal ecstasy (false – we didn't know that information).

As a result of this email and great community concern the AIDS Council of NSW issued a warning about the possibility of a particularly toxic batch of ecstasy being on the streets. So where did the PMA come from – who suggested it and what evidence did we have? Well, a quick search of the internet will show you that 'red Mitsubishi's' have been linked with PMA since 2000 when there was a death of a young man in Austria. Since that time the PMA/'red Mitsubishi' urban myth has reared its ugly head a number of times. However, apart from that one reference there is no hard evidence linking that particular brand and PMA.

The deaths that have occurred since that time (one in Adelaide and one in Sydney) have only added fuel to the fire. However neither has proven to be PMA-related.

I believe that warnings need to be disseminated very carefully – we need to have good hard facts to support our claims. At no time was there any evidence to indicate that PMA was contained in any pills in Sydney. We do not want to be perceived as the 'boy who cried wolf', or users will simply not believe us the next time.

The warning was definitely heeded by many in the community. People were concerned that they could have 'bad pills' and adjusted their behaviour accordingly. This was an extremely positive response and the ecstasy using community should be congratulated for this. However, I would urge all agencies (hospitals, community agencies or governments) to be extremely careful in the future of naming possible substances unless they can be verified by toxicology. Our credibility is of the utmost importance – let's not lose it!!

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.

Maree Teesson

Heroin dependence is a persistent, and in many cases lifelong, condition. The persistence of heroin dependence is a major public health concern. Indeed, the associations between heroin use and a range of serious harms including overdose, blood borne virus transmission, psychopathology, criminality, trauma and suicide are well known. Mortality among heroin users is also high, with annual rates in the order of 1-3%¹. Heroin use is also strongly associated with crime, largely in support of the drug use².

Heroin use is a serious public health problem with more people treated in Australia for opioid dependence than for any other illicit drug class³. Nearly seven in every 1000 Australian adults are dependent on heroin, a rate similar to that found in the UK⁴.

Despite the significant burden and in many cases lifelong persistence of heroin dependence, there are aspects to the impact of heroin dependence where we know very little indeed. One poorly researched but

very important area is that of the impact on the children of those who are dependent. This impact is likely to be great and may lay the foundations for future problems. Dr Lucy Burns, at the National Drug and Alcohol Research Centre is directing a research program in this area and gives details in this month's *Issuing Forth*.

Why is it important?

There exists relatively clear data suggesting that later health problems including substance use problems begin with early child behaviour problems, conduct problems, and attention deficit problems, high sensation seeking, and social adversity. The children identified in Dr Burns' research are likely to experience considerable social adversity. This presents a unique opportunity for the potential prevention of long-term problems and trans-generational transmission of those problems. A report from the American Institute of Medicine noted that prevention has a low priority in the health care agendas of most countries. The report suggests that a greater effort should be placed on prevention. The authors argue that several

factors make this possible. Firstly there has been a substantial growth in the knowledge about both environmental and genetic risk factors for substance use disorders. Secondly, a number of promising models for early intervention now exist.

The first step is to understand the risks and Dr Burns outlines her research on this in the following *Issuing Forth*. **cl**

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issuing forth

Examining Opiate Use in Pregnancy from a Population Perspective**Introduction**

Heroin use has increased over recent decades and as a consequence heroin use during pregnancy has emerged as a significant issue. Yet despite this there remains scant research and policy attention paid to identifying and meeting the health needs of these women or their babies. Addressing these issues is therefore an urgent public health challenge, particularly as many of the negative outcomes associated with the use of illicit drugs (such as poor health and nutrition and susceptibility to blood borne viruses) can also be transmitted to the developing foetus¹. Previous studies report significantly higher rates of first trimester spontaneous abortion, stillbirth, meconium staining, foetal growth retardation, premature delivery, maternal/neonatal infections, neonatal withdrawal and neonatal mortality^{2,3}.

In the short term the majority of these infants are also at risk of neonatal abstinence symptoms (NAS). NAS is characterized by signs and symptoms of central nervous system hyperirritability; gastrointestinal dysfunction; respiratory distress; and vague autonomic symptoms that include yawning, sneezing,

mottling and fever; convulsions and dehydration may follow^{2,7,9,11}. Neonates often suck frantically on their fists or thumbs yet have extreme difficulty feeding due to an uncoordinated sucking reflex. The onset of withdrawal symptoms ranges from hours after birth to 2 weeks, but the majority of symptoms appear within 72 hours.

In the longer term, although no teratogenic effects have been identified some studies suggest that babies born to mothers who use heroin while pregnant may be at higher risk of a number of health and behavioural problems. Specifically, some case-studies and small sample studies suggest a higher than expected incidence of eye squints^{12,13}, hyperactivity disorders and learning and speech difficulties^{3,6,14}. However, long-term studies of child outcomes are often complex to interpret as there are many other factors that can lead to poor physical and mental health. These factors include poverty and disadvantage, maternal characteristics, family genetics, polydrug use, substance abuse lifestyle, and degree of family and social support.

To date, most research examining heroin use in pregnancy has been conducted in the clinical setting and limited to the neonatal period. From a public health perspective, however, it is

critical to also examine drug use in pregnancy from a population perspective so that appropriate and equitable services can be planned, implemented and evaluated. To date, however, a number of factors have made the measurement of drug use in pregnancy at a population level particularly difficult¹⁵. Firstly, traditional methods of measuring health behaviours such as household surveys are less reliable for examining use of illicit drugs where disclosure could lead to criminal prosecution. Secondly, the small number of women who use illicit drugs use while pregnant, together with the fact that these women tend to live in specific geographical locations means that conventional survey methods are unlikely to detect enough of these women to make reliable estimates. Thirdly, pregnant women are less likely to report drug use if their children will be taken out of their care as a result. Research shows this fear is justified as research suggests that up to 50% of children of opiate dependent women are not living with their biological parents by the time they are five years of age¹⁶.

Because of these difficulties in measurement three basic yet critically important questions about the use of heroin and other opiates in pregnancy remain unanswered. These are:

- How common is the use of heroin and other opiates in pregnant women?

- Where do these women deliver their babies, what are their labour and birth experiences and how do they differ to women who are not opiate dependent?
- What are the specific longer term health issues faced by both these women and their infants?

Methods

Addressing these issues forms part of the body of work undertaken through a five-year NH&MRC capacity building grant (Health Evaluation Research and Outcomes Network (HERON)) awarded to a consortium of public health researchers and policy makers including NSW Health, the University of Sydney, the University of New South Wales and the Cancer Council NSW. The overall aim of the grant is to build strength and expertise in the use of population health data sets to inform policy and planning. The work at NDARC is aimed at improving the care and outcomes of care in childbirth and early infancy through the examination of currently held public health databases to examine issues around drug use in pregnancy, focussing on heroin in the first instance.

Because traditional household surveys are not appropriate to examining population issues about drug use in pregnancy an innovative method of using existing administrative databases, record linkage, is being examined in this project. Record linkage uses specialist computer software to link records from one or more data sets relating to the same person. This method has a number of advantages^{17, 18}. Linked public health data is a complete ascertainment (i.e. represents a whole population) and thus is non-biased and no-one is excluded. The results can also apply to complete subsets of the population. Record linkage is cost-effective compared to any studies where contact and consent from participants needs to be sought. Linkage can give valid and reliable data on issues often difficult to obtain in direct ways (e.g. drug use) and therefore avoids biased response rates and poor recall.

In NSW, the Surveillance Methods Branch located in the Centre for Epidemiology and Research, NSW Health, has undertaken data linkage work since 1994. The work undertaken in the Branch involves both annual linkages of selected health-related data sets and ad hoc linkages as the need arises¹⁹. With respect to legislation, linkage of health data sets is governed by a number of Acts: the NSW Public Health Act 1991, the NSW Health Administration Act 1982 and the NSW Privacy and Personal Information Protection Act, 1998¹⁹.

Confidentiality of records is ensured by a number of administrative requirements: restricting access to fully identified data to a minimum number of people during the linkage process, ensuring electronic data is securely stored, access to de-identified unit record data is password protected and subject to signing a confidentiality agreement, information is published in such a way that individuals cannot

be identified and the data is deleted after a designated time period.

With respect to the linkage process itself, there are a number of phases. The first step in record linkage is a pre-processing phase that cleans and standardises the data. As data sets may contain duplicate records linkage must be applied to de-duplicate these records before other data linkage can be attempted. Following this, there are three basic steps involved in linking the records for one person across a number of data sets²⁰. Firstly, records are put into blocks of records that may have a potential relationship. Secondly, records are matched within those blocks to determine if the records are likely to be related using agreement and disagreement probabilities to designate pairs of records as either a link, a possible link or a non-link. Thirdly, matched records are linked so they can be analysed as composite information for one person. In the current project NSW Health has specially linked the four datasets outlined below and provided the data as a de-identified unit record file to NDARC for analysis.

Datasets linked in the NDARC Drugs in Pregnancy Project

- **The NSW Midwives Data Collection:** a collection that provides information about pregnancy care, services and pregnancy outcomes. The collection covers all births in New South Wales of at least 400 grams birth weight, or at least 20 weeks gestation. The information recorded includes demographic, medical and obstetric information on the mother, and information on the labour, delivery and condition of the infant.
- **The Inpatient Statistics Collection:** this is a census of all admitted patient services provided by New South Wales Public Hospitals, Public Psychiatric Hospitals, Public Multi-Purpose Services, Private Hospitals, and Private Day Procedures Centres. The information reported includes patient demographics, source of referral to the service, service referred to on separation, diagnoses, procedures, and external causes.
- **The Emergency Department Data Collection:** a collection of all presentations to Emergency Departments at public hospitals in NSW. The collection aims to show patterns in presentations by age, season and diagnostic groups to assist in the planning of services and improvement of care and outcomes for the NSW public.
- **The NSW Pharmaceutical Drugs of Addiction System:** a client database based on the authority to prescribe drugs of addiction. This collection contains information about the specific type of treatment received (e.g. methadone or buprenorphine) and details about length of stay in treatment, dosage and dosing point.

Outcomes

This project will deliver two outcomes. Firstly, we will examine and detail the methods of linking these particular datasets to deliver information about drug use in pregnancy. Secondly, through examination of these linked datasets we will identify some of the obstetric and health needs of opioid dependent women and their infants, and also identify any population sub-groups at high risk of negative outcomes. If appropriate in the longer term we will also be able to examine these important issues in pregnant women who are dependant on other drugs such as alcohol, cannabis and cocaine. Health status will be examined by looking at the presence of illnesses such as diabetes and hypertension. Characteristics of the baby will be health status (e.g. Apgar score) and the need for specialist intervention. Follow up information about re-admissions to hospital and emergency department presentations will be used to monitor the health of the babies over time. It will also be possible to compare the outcomes of opiate dependent women both in and not in methadone treatment to non-opiate dependent women on a number of demographic, antenatal and labour care variables.

Conclusion

Because traditional methods of population research are not well suited to researching pregnant opioid users, to date we have scant population health information about opiate use in pregnancy. As a result three basic yet fundamental questions remain unanswered. Firstly, how common is opiate dependence in pregnant women? Secondly, where do opiate dependent women deliver their babies, what are their labour and birth experiences and how do they differ to women who are not opiate dependent? Thirdly, what are the specific longer term health issues faced by both these women and their infants? Data linkage techniques potentially offer us a unique and innovative method of using public health administration databases to address these important questions and more accurately identify and meet the health needs of pregnant opiate dependent women and their babies. **cl**

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project notes

Demographic characteristics, toxicological findings and major organ pathology of psychostimulant-related deaths in Australia

Sharlene Kaye, Shane Darke, Johan Duflou and Rebecca McKetin

Although there has been a significant amount of research into fatal heroin overdose, there is very little known about death due to non-opioid drugs. The physical harms of psychostimulant drugs, such as cocaine and the amphetamines, are well-documented, yet the nature of psychostimulant mortality has received little attention. Apart from estimates of the number of psychostimulant-related deaths, there is, to date, a lack of knowledge about the nature of these deaths, such as the demographic characteristics of the decedents, circumstances of their death, toxicological findings and levels of pre-existing organ pathology. While the prevalence of cocaine and amphetamine-related death is lower than that of death caused by heroin, the number of deaths in which these substances are implicated is of sufficient clinical significance to warrant further investigation. A recent study found that there were 146 cocaine-related deaths in New South Wales between 1993 and 2002, with high rates of serious cardiac pathology among decedents. Given the increase in the use and availability of methamphetamine in Australia over recent years, and the emergence of more potent forms of the drug, the harm associated with amphetamine use is likely to increase.

This project aims to examine the demographic profiles, circumstances of death, toxicology and major organ pathology of coronial cases where psychostimulants are implicated in the

cause of death. This information will be obtained from the National Coroners Information System (NCIS) which contains information from the coronial files of all Australian states and territories. Previous Australian research into illicit drug (i.e. heroin and cocaine) mortality has been mostly restricted to deaths occurring in New South Wales, and no national studies have been conducted. Using NCIS data will allow such investigations to be conducted at a national level.

The study also aims to identify potential risk factors for psychostimulant mortality and compare deaths related to different drug types. Amphetamine-related deaths, for example, will be compared to those related to other psychostimulants. This project will provide a better understanding of psychostimulant mortality and associated risk, which is essential to the development of strategies to reduce psychostimulant-related harm.

The project is funded by the Commonwealth Department of Health and Ageing and is coordinated by NDARC in collaboration with the NSW Department of Forensic Medicine, Central Sydney Area Health Service.

Trends in drug use and driving among nightclub attendees

Louisa Degenhardt, Paul Dillon, Cameron Duff (Centre for Youth Studies) and Joanne Ross

Alcohol roadside testing has been in place for many years in Australia and is thought to have significantly reduced alcohol related accidents and fatalities in this country. Recent years have seen increased concern about the apparent occurrence of driving under the influence of methamphetamine.

In response to concerns about the occurrence of illicit drug use among drivers, in December 2003, the Victorian Government passed

legislation that would allow the conduct of random roadside testing. This was to be completed by means of a saliva test, for two illicit drugs: THC (the main active ingredient of cannabis) and methamphetamine (a drug variously sold as "speed" powder, "base" methamphetamine, or "crystal" methamphetamine). The test is designed to detect the presence of drugs recently consumed (rather than, for example, metabolites of the drugs that might remain in the body after the user's driving performance may no longer be affected). It was intended that this legislation would be introduced in late 2004.

The use of ecstasy and related drugs (ERDs) occurs in a range of locations, with substantial proportions of users reporting use in both public and private venues. In 2003, the Party Drugs Initiative (PDI) was conducted in Victoria for the first time. The PDI is a national monitoring system of ecstasy and related drugs intended to serve as a strategic early warning system, identifying emerging trends in party drug markets. Many regular ecstasy users reported using ERDs in nightclubs and other dance-related public venues. It is reasonable to assume that some persons may either drive themselves, or be driven to and from by others attending such venues. Furthermore, it may be the case that some of these drivers do so under the influence of illicit drugs.

To this end, and in anticipation of the introduction of roadside saliva testing in Victoria, the current study will examine trends in drug use and driving among Melbourne nightclub attendees with an aim to provide information on the methods with which persons attending nightclubs travel to attend venues, and the extent to which such persons may drive after consuming illicit drugs. Funded by VicRoads, this study will serve to establish a baseline measure of these behaviours prior to the implementation of the new roadside drug testing in Victoria. This baseline study could also serve as a model upon which further follow

up studies, in which potential changes in such behaviours could also be assessed.

Post traumatic stress disorder among people with heroin dependence

Katherine Mills, Michael Lynskey, Maree Teesson, Joanne Ross, and Shane Darke

Post traumatic stress disorder (PTSD) is an anxiety disorder that may develop following exposure to extreme trauma, and is common among individuals with substance use disorders. PTSD is characterised by a number of distressing symptoms including re-experiencing the event, avoidance of reminders of the event, increased arousal, and numbing of general responsiveness.

The Australian National Survey of Mental Health and Wellbeing (NSMHWB) found that one third of individuals with an opioid use disorder met criteria for current PTSD, compared to 1% of the general population. The prevalence of PTSD was higher among individuals with an opioid use disorder compared with all other drug classes. However, very few studies have investigated the prevalence of PTSD among people in treatment for their heroin dependence.

Using data collected as part of the Australian Treatment Outcome Study (ATOS), a study was conducted to examine the prevalence of PTSD among individuals entering treatment for heroin dependence (201 maintenance treatment, 201 detoxification, 133 residential rehabilitation) and 80 people not in treatment for their heroin use. Almost all participants (92%) had experienced at least one extreme trauma, with the majority (81%) experiencing multiple traumas. The most common events experienced by males were having witnessed serious injury or death, having been seriously physically attacked or assaulted, threatened with a weapon, held captive or kidnapped. For females, the most commonly experienced events were having been raped, sexually molested, and having witnessed serious injury or death.

Forty one percent of the sample received a lifetime diagnosis of PTSD. Although an average of 12 years had passed since experiencing their most stressful event, 75% of those with PTSD had experienced symptoms in the preceding year. Individuals with PTSD presented across all treatment modalities, most commonly residential rehabilitation (maintenance: 42%, detoxification: 37%, residential rehabilitation: 52%, non-treatment: 30%). Those with PTSD were found to present with a more severe clinical profile compared to those without PTSD. Specifically, individuals with PTSD were less likely to be employed, had more extensive polydrug use histories, were more likely to have a history of overdose, and reported poorer general physical and mental health, and greater psychopathology. Hence, PTSD places a significant burden

on individuals with heroin dependence and presents a significant challenge to treatment providers.

These findings highlight the need for the assessment of PTSD among treatment entrants, and for further research examining the treatment of this comorbidity. Currently, very few treatment

providers assess for PTSD and there are no treatment protocols available for the treatment of comorbid heroin dependence and PTSD specifically. Further analysis, will investigate the impact of PTSD on treatment outcomes for heroin dependence, and the impact of treatment for heroin dependence on PTSD. **cl**

centre abstracts

A randomised, controlled trial of low dose naltrexone for the treatment of opioid dependence

Drug and Alcohol Dependence 75, 79-88

Felicity Rea, James Bell, Malcolm Young, and Richard Mattick

Aim: To investigate the efficacy of low doses of naltrexone in relapse prevention for heroin dependences.

Design: Double blind, randomized comparison of three groups – Group 1: taking 50mg per day, Group 2: 0.5mg per day, and Group 3: 0.05mg per day.

Participants: Sixty-six dependent heroin users.

Interventions: After detoxification followed by 1 week on 50mg per day naltrexone, participants were randomized to trial medication. All were offered counselling and monitored with weekly clinical reviews. Research interviews were conducted at three and six months.

Outcome measures: Retention in treatment and heroin use at 3 and 6 months. Secondary outcome measures were side effects and craving.

Findings: Mean days retained in randomised treatment were – Group 1: 58.9 days; Group 2: 46.6 days; and Group 3: 47.8 days. Differences in retention were not significant using survival analysis. However, nine of the first 60 participants, transferred to the 50mg dose, and one transferred to a lower dose (chi-square = 0.142; p=0.018). At follow-up there was no relationship between abstinence from heroin and naltrexone dose, nor between level of heroin use and dose. There were no differences between groups in craving or depression.

Conclusion: Low doses of naltrexone had no discernible advantage, and participants preferred 50mgs per day. Despite preference for blocking doses of naltrexone, outcomes appeared to be independent of naltrexone dose.

The effects of restricting publicly subsidized Temazepam capsules on benzodiazepine use among injecting drug users in Australia

Medical Journal of Australia 181, 300-304

Courtney Breen, Louisa Degenhardt, Raimondo Bruno, Amanda Roxburgh, and Rebecca Jenkinson

Objective: To assess the effect of a restriction on publicly subsidized temazepam 10mg capsules upon the injection of benzodiazepines by injecting drug users (IDUs).

Design and participants: Cross-sectional study of regular IDUs, targeting periods before and after the policy change. Analysis of prescription data, including time-series analysis.

Settings: Drug services in the capital cities of New South Wales, Victoria, Tasmania, Queensland and the Northern Territory.

Main outcome measures: Changes in prescriptions and patterns of benzodiazepine use; harms associated with benzodiazepine use.

Results: There was a decrease in temazepam 10mg capsule prescriptions and a corresponding increase in temazepam 10mg tablet prescriptions after the policy change. IDU survey data suggested that IDUs continued to inject benzodiazepines and temazepam capsules. The frequency of the injection of capsules after the restriction appeared similar to that before the policy change. There was no change in the frequency of injection of tablets. Most IDUs reported obtaining their benzodiazepines from doctors, with substantial proportions obtaining capsules even after the restriction. About half the IDUs reported purchasing benzodiazepines on the street. Most IDUs who injected benzodiazepines reported injection-related problems.

Conclusion: Limiting the prescribing of temazepam capsules may have reduced their injection by some IDUs, but additional strategies are needed to reduce the misuse among this group. These may include further restriction of capsule preparations, continued

education of doctors and IDUs, and the examination of prescribing practices of individual doctors.

Can drug injectors be encouraged to adopt non-injecting routes of administration (NIROA) for drugs?

Drug and Alcohol Review 23, 281-286

Kate Dolan, Nicole Clement, David Rouen, Vaughan Rees, James Shearer and Alex Wodak

Drug use by injection can cause problems specific to this form of administration. Problems include an increased risk of drug overdose, drug dependence, the transmission of HIV, hepatitis B and hepatitis C and vein damage. Shifting drug injectors from injecting to another route of administration may minimize these problems. The aim of the study were to develop and trial an intervention to assist willing injecting drug users (IDUs) to shift to non-injecting routes of administration (NIROA) and to explore the acceptability and practicality of facilitating NIROA. IDUs were assessed and suitable subjects entered a cognitive behavioural trial consisting five 1-hour sessions of individual therapy with a registered psychologist. Forty-two subjects were assessed (22 males and 20 females). Thirty subjects entered treatment. The mean age was 36 years. Twenty-one subjects were followed up at 3 months and 10 subjects at 6 months, the proportion of subjects who had commenced using NIROA was 30% and 50% respectively. This pilot study showed that it was possible to assist a minority of drug injectors to move from injecting to the non-injecting administration of drugs. However, many of these appeared to be already motivated to cease using drugs and adopting NIROA was one way of assisting this. Poor follow-up rate, lack of control group, questions about cost effectiveness and the impact of market factors which possibly constrain shifting to NIROA suggest that further research is needed before it could be said that NIROA should be recommended as a viable harm reduction strategy in the Australian context.

Changes in patterns of drug use among injecting drug users following changes in the availability of heroin in New South Wales, Australia

Drug and Alcohol Review, 23, 287-294

Amanda Roxburgh, Louisa Degenhardt and Courtney Breen

The aim of this study was to examine changes in drug use patterns among groups of injecting drug users (IDU) who remained in the drug

market during a period of reduced heroin availability in NSW, Australia. Cross-sectional data collected from regular IDU interviewed as part of the NSW Illicit Drug Reporting System (IDRS) between 1996-2003 were analysed. Drug use patterns, reported drug availability and price were assessed. There was a marked decrease in the frequency of heroin use during the period of reduced availability in 2001, with some increase in 2002 and 2003. Heroin availability and frequency of use have not returned to levels reported prior to 2001; however, even at the peak of the reduction in supply, users continued to access heroin. There was a significant shift among IDU from heroin to cocaine during 2001, which subsequently reversed. The availability of cocaine has fluctuated in recent years, but the price has remained stable. The price of heroin appeared to be more responsive to market fluctuations, and co-varied with heroin availability. IDU used cocaine when heroin was less available; however, patterns of cocaine use were not maintained. The frequency of heroin use remained lower, which may be indicative of a less consistent supply, increased price or increased number of IDU entering treatment. The reduced supply of heroin in 2001 highlighted the adaptable nature of IDU patterns of use, indicative of the need for a commensurate treatment response. It also highlighted the importance of the ongoing monitoring of drug trends in Australia.

Non-injecting routes of administration among entrants to three treatment modalities for heroin dependence

Drug and Alcohol Review, 23, 177-183

Shane Darke, Kate Hetherington, Joanne Ross, Michael Lynskey and Maree Teesson

A sample of 535 entrants to opioid dependence treatments across three treatment modalities were administered a structured interview to ascertain the prevalence of non-injecting heroin use. Ten per cent of participants had used heroin primarily by smoking/inhaling in the month preceding interview, and 9% had used heroin and other drugs exclusively by non-injecting routes. Non-injectors were younger (25.5 vs. 29.5 years), had higher levels of education (10.6 vs 10.0 years) were more likely to be employed (33 vs. 18%) and had lower levels of recent crime (31 vs. 56%). They also had shorter heroin using careers (5.1 vs. 9.9 years), fewer symptoms of dependence (5.1 vs. 5.6), had been enrolled in fewer previous treatment episodes (3.3 vs. 11.5) and had less extensive lifetime (8.0 vs. 9.1 drug classes) and recent (3.6 vs. 4.9) polydrug use. Non-injectors were substantially less likely to report lifetime (13% vs. 58%) or recent (2% vs. 29%) heroin overdoses. There were no differences between the general physical

and psychological health of the two groups. While non-injectors had a lower level of post-traumatic stress disorder (29% vs. 34%), there were no differences in levels of major depression, attempted suicide, antisocial personality disorder, or borderline personality disorder. A substantial minority of Australian treatment entrants are now using heroin exclusively by non-injecting routes. While this group is younger, and has substantially reduced risk of overdose and blood borne virus transmission, the physical and psychological health of non-injectors mirrors that of injectors.

Attempted suicide among injecting and non-injecting cocaine users in Sydney, Australia

Journal of Urban Health, 81, 505-515

Shane Darke and Sharlene Kaye

A sample of 183 current cocaine users, 120 primary injecting cocaine users (ICUs), and 63 primary non-injecting cocaine users (NICUs) were administered a structured interview to ascertain attempted suicide histories, methods used, and factors associated with suicide attempts. All respondents were volunteers and current cocaine users recruited through a wide range of sources. The mean age of participants was 30.1 years and 65% were male. The ICUs were older (32.3 vs. 26.7 years, respectively), and more likely to be male (72% vs. 54% respectively), to be unemployed (84% vs. 23%, respectively) and to have a prison history (53% vs. 1%, respectively) compared to NICUs. Of the sample, 31% had attempted suicide, 18% had done so on more than one occasion, and 8% had made an attempt in the preceding 12 months. Overall, 28% of the sample had been treated by a medical practitioner after an attempt. ICUs (38%) were significantly more likely than NICUs (10%) to have attempted suicide and to have done so on more than one occasion (23% vs. 3%, respectively). The most common method used among both groups was self-poisoning (ICUs 28%, NICUs 8%), primarily by drug overdose. Violent methods had been used by 22% of ICUs and 3% of NICUs. Multivariate analyses revealed that injecting, female gender, and more extensive polydrug use were independent predictors of a suicide attempt. The prevalence of suicide in this study indicates that it represents a major clinical issue among ICUs and to a lesser extent among noninjectors of the drug. Those treating cocaine users for drug dependence need to be aware of the salience of suicide as a problem, among injectors in particular.

Hepatitis C-related discrimination in New South Wales

Australian Health Review 27, 58-61

Carolyn Day, Rohan Jayasuriya and Graham Stone

Hepatitis C-related discrimination was examined. Intake interviews with 606 HepCare trial participants from New South Wales were analysed to determine the prevalence and correlates of hepatitis C related discrimination. The sample was a mean age of 37 years, 54% were males, 79% reported a history of drug injecting and 35% were current injectors. Forty percent of the sample reported experiencing

hepatitis C-related discrimination. Multivariate analysis revealed that current injectors, 35-44 year olds, females, those who had recently consulted a general practitioner and those who had been referred to a specialist for their hepatitis C were more likely to report discrimination than other groups. More research is required to attain a better understanding of hepatitis C-related discrimination. **cl**

recent publications

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

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