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centre lines

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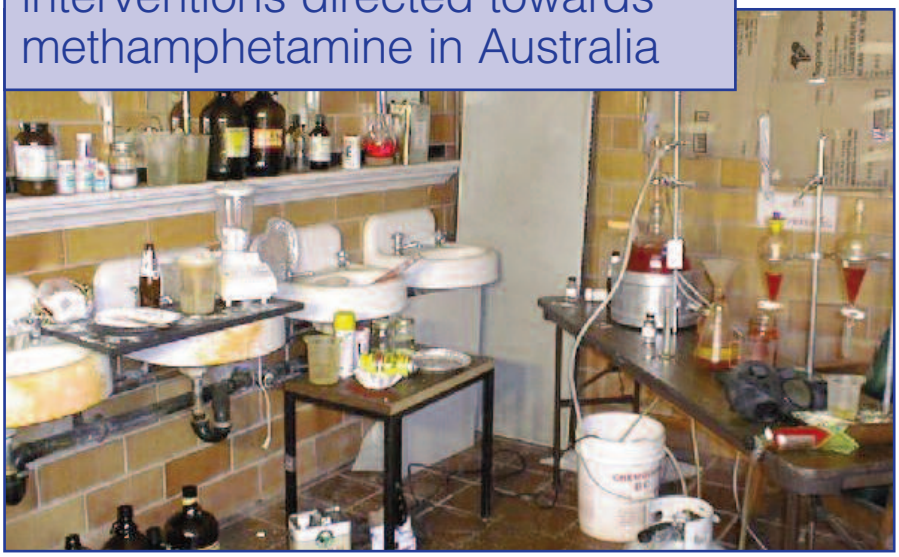
issuing **forth**

Evaluating drug law enforcement interventions directed towards methamphetamine in Australia



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More news and more research translation: NDARC, NDRI and NCETA to relaunch its newsletter

Welcome to the final edition of NDARC's *CentreLines* in its current format.

CentreLines is published on rotation with the National Drug Research Institute (NDRI) at Curtin University in Perth (who incidentally will be publishing one more issue in the current format).The National Centre for Education and Training on Addiction (NCETA) will join NDARC and NDRI in publishing issues on rotation.

Much has changed since we first started publishing *Centrelines*. NDARC's staff has grown to 140 and its peer reviewed publications from less than 20 a year to 130. The explosion of the internet and social media has made even peer reviewed journal articles much accessible and instant.

Prior to finalising the relaunch we have been asking for readers' comments on the current version and what they would like to see in the future. The key messages were that readers looked to *CentreLines* for in depth analysis of research and translation of research findings. The cover feature (issuing forth) is popular as are the abstracts and the project notes. In the new version, look out for more news, more abstracts and more translation of abstracts, as well as a more modern design.

Interestingly most of our readers supported an online version of a traditional magazine – i.e a PDF with a masthead published online, rather new web based content delivery systems. NDARC's *CentreLine*s has been published online only for the last three years while NDRI has continued with mail delivered print versions. The relaunched publication will be available online only from all three Centres.

Our readers' survey is ongoing so to have your say click here: **http://www.surveymonkey.com/s/WR8RCRR**. We are also looking for suggestions for a new title.

Marion Downey, Manager Media and Communications

contents

CentreLines is a joint publication from the National Drug and Alcohol Research Centre, Sydney and the National Drug Research Institute, Perth.

headspace

Medicinal cannabis: is it coming of age?

By Professor Michael Farrell

Cannabis has been an available psychoactive substance for many centuries and was one of the few active ingredients for many ancient physicians. There has been a debate about the potential therapeutic role of cannabis now for over four decades. More recently there have been a number of serious studies to evaluate the evidence for its role in medicine.

The discussions on cannabis and its role in medicine have been bedevilled by the parallel debate on the legal control options for recreational cannabis use. This debate has become very prominent in the United States where a number of states have now voted to make cannabis available for a range of needs.

The debate in the UK and in Australia has been more focussed on what is the evidence for the therapeutic benefits of a range of cannabis extracts and cannabinoids for a range of conditions including cancer-treatment induced nausea, chronic non malignant pain, use as an anti-spasmodic and analgesic in multiple sclerosis, glaucoma and a range of other conditions.

Initially it was hoped synthetic cannabinoids would provide a bridge between the world of the plant and the world of the tablet for medication purposes. However it was not to be and the cannabinoid medications were found to be unpopular with patients and therapeutically lacking.

One of the challenges for regulators has been the need to balance out traditional approaches that existed before key regulations were introduced and the importance of using the regulations to ensure good consumer protection and to avoid any further thalidomide like disasters.

The development of cannabis extract medications is an expensive and complex process. But given the complexity of the active agents in the cannabis plant it would appear that it is a worthwhile enterprise.

The English based company GW Pharmaceuticals has developed a cannabinoid plant extract with the generic name nabiximol and the commercial brand name Sativex. Sativex is now approved in a number of countries, such as the UK, Spain, Germany, Denmark, the Czech Republic, Sweden, New Zealand and Canada. And it is soon to be approved in Australia: this is in the main for use in multiple sclerosis but in many jurisdictions doctors can take it upon themselves to prescribe off label where they believe it may have a role and they are ready to accept the risk of complications as being part of their oveall responsibility.

At this moment the National Cannabis Prevention and Information Centre at NDARC and a range of research and clinical collaborators have undertaken a study of the role of Sativex in the management of cannabis withdrawal. They expect to complete and publish the results sometime later this year.

Apart from effectiveness, one of the key issues will be the interest of patients and service users in this type of medication and their desire and conviction that it is indeed an important medication for their symptoms. This is likely to influence the pressure some clinicians are put under to decide to use this medication. There are still a lot of unknown factors in this area but given the debate in the US and advancements in medication development this is a topic that is likely to spark further debate. One interesting question will be whether someone who is on Sativex for a medical condition should be permitted to drive and the implications for existing rather ad hoc current legal practice in Australia around cannabis and driving. Thus there are many questions and there is more work to be done, but we are hopeful that this will be a productive and positive area for future research. **cl**

issuing forth

Evaluating drug law enforcement interventions directed towards methamphetamine in Australia

By Alison Ritter, David Bright and Wendy Gong

Although trends in methamphetamine use remain relatively stable (Australian Institute of Health and Welfare, 2008), harms associated with use are significant, and methamphetamine continues to be an important drug policy priority.

There is little empirical evidence to guide policy decisions about drug law enforcement interventions directed to methamphetamine. In fact, the paucity of research on the effectiveness of law enforcement across all illicit drugs "continues to pose a major barrier to applying these policies effectively" (Babor, et al., 2010, p. 258) Decisions about which methamphetamine supply control policy to fund, which policies should receive increased funding, or how to derive the most effective balance of priorities, are currently uninformed by the results of research.

There is a clear and pressing need for further research which examines the effectiveness of law enforcement interventions directed at methamphetamine; this study aimed to fill this gap.

This research concerned supply reduction for methamphetamine. The aims of the research were twofold:

1. To provide a rich description of the Australian methamphetamine supply chains above retail level in order to inform drug law enforcement interventions; and
2. To conduct an economic evaluation of different law enforcement interventions directed at different levels of the methamphetamine market.

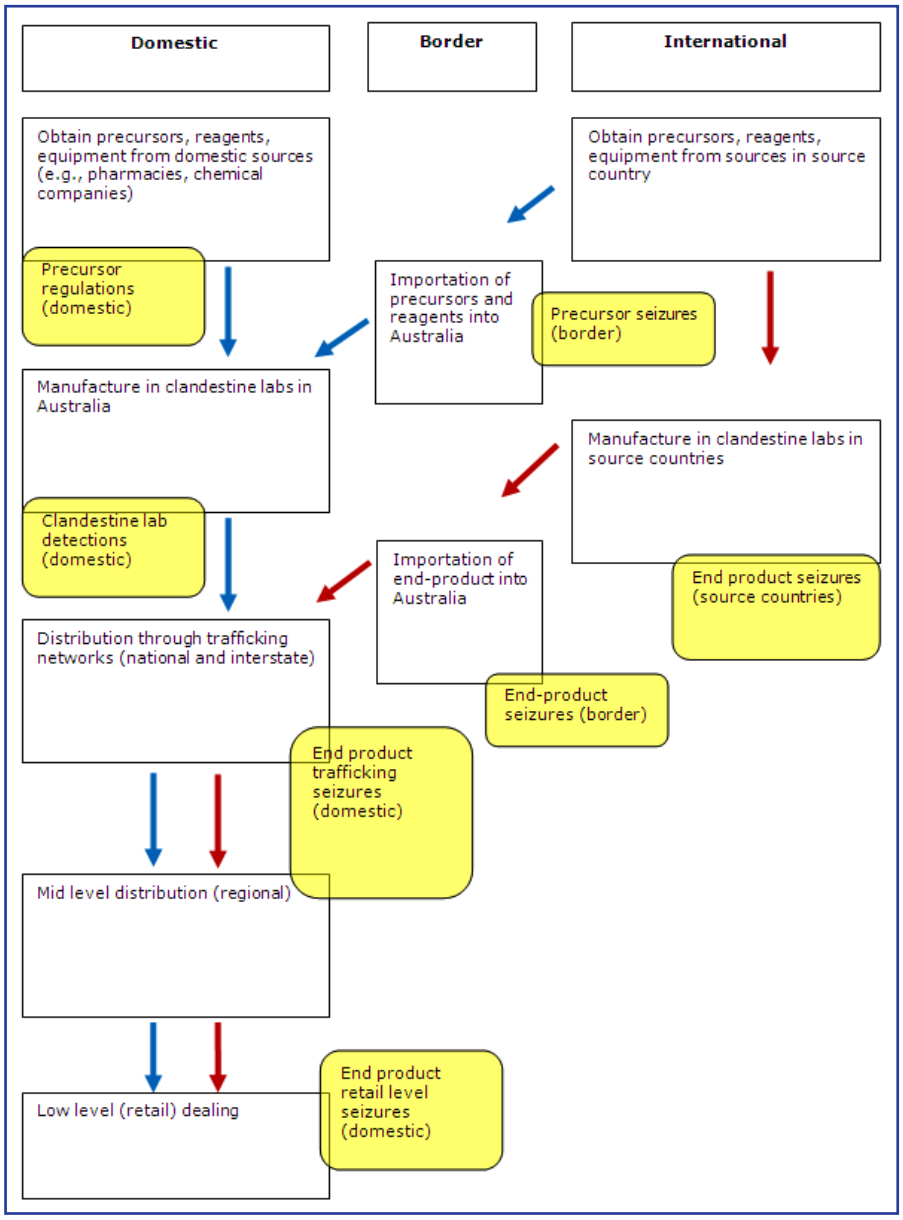
This work was undertaken between January 2008 and August 2010, and reflects our understandings of the methamphetamine market at that time.

Methamphetamine supply in Australia

Figure 1 summarises our findings in relation to methamphetamine supply chains in Australia. There are two supply chains for methamphetamine in Australia: a domestic supply chain which includes manufacture and distribution, and an international supply chain in which precursors and end-product are imported into Australia. The activities associated with manufacturing and trafficking methamphetamine are listed in the white boxes in Figure 1. As can be seen, the domestic and international supply chains merge at the wholesale level. The associated law enforcement interventions are provided in the yellow boxes.

Crystal methamphetamine is mainly imported across the Australian border and then distributed within Australia. Non-crystal

Figure 1: Supply chains and drug law enforcement interventions



methamphetamine (powder and base) is mainly produced in clandestine laboratories within Australia and is then distributed by a range of criminal networks.

The law enforcement interventions which map onto the different levels of the supply chain can be summarised as:

1. End product seizures (source countries)
2. End product seizures (border)
3. Precursor seizure (border)
5. Clandestine laboratory detections (domestic)
6. End product trafficking seizures (domestic)
7. End product retail level seizures (domestic)

Methamphetamine markets: networks, organisations and people involved

In our study, we found evidence of diverse organised crime groups involved in methamphetamine manufacture and trafficking (Outlaw Motorcycle Gangs, multi-national syndicates, Asian crime syndicates, and so on). These organised crime groups are not confined to any one ethnicity or association. The range of ethnic criminal groups includes those of European, Middle-Eastern and Asian backgrounds but the type of ethnic origin is relatively unimportant. The common feature of these groups is that shared characteristics (ethnic background) enhance trust and loyalty to the group.

The methamphetamine market is characterised by corporate organisational structures (with vertical integration, such as OMCGs); freelance structures (sole operators, such as "methamphetamine cooks"); and socially bonded groups tied with common backgrounds/values (ethnically-based organised crime groups). The existence of all three types of group structure is potentially challenging for police, given the different features. For example communal organisations rely on relational capital (trust between members) and are therefore hard to infiltrate (e.g., with undercover operatives) and to dismantle. Vertically integrated hierarchical structures imply that police attention at the top of the hierarchy, and early in the supply chain is likely to bring greatest results. Freelance structures means that police cannot direct their resources to a particular, identifiable organisation or chain of supply. We found evidence of co-operation between criminal groups.

Multiple and diverse role specialisation is apparent within and across groups. For example, "cooks" possess specialised knowledge and skill and serve an important function. "Cooks" are therefore difficult to replace in criminal networks.

Methamphetamine market structure and dynamics

According to reports from Key Informants, the increasing restrictions on the availability of pseudoephedrine in Australia (e.g., Project STOP, rescheduling of pseudoephedrine based products) have resulted in a trend of increasing bulk importations of raw pseudoephedrine. With this shift, and the resultant need for criminal groups to find alternate sources of precursor chemicals, the interception of precursors at the border will be a priority for law enforcement agencies. Key informants also reported an increase in the use of pre-precursors for domestic manufacture. Pre-precursors are chemicals which are used to produce precursors and are often as yet unregulated.

The methamphetamine market is dynamic and constantly changing. For example, when a few "cooks" are imprisoned, their preferred methods are no longer common; but the processes can resurface when cooks with specialised knowledge and skill are released from prison.

There has been a trend back to phenyl-2-propanone (P2P) type methods in response to restrictions on the availability of pseudoephedrine. Drug law enforcement will be increasingly required to focus on the precursors and manufacture techniques utilised for P2P manufacture. Pseudo-runners appear to be a reducing trend (given Project STOP and other restriction on the availability of pseudoephedrine).

There is some regional variation in manufacture methods across Australia. This may be to do with "cooks" availability and their preferred method, but the variation also relates to differential access to chemicals across Australia (e.g., the Nazi method predominates in Western Australia possibly due to ready availability of ammonia). New methods continue to be invented and used within Australia.

The shift to importation of bulk amounts of raw pseudoephedrine and the increased use of P2P methods may lead to an expansion in the

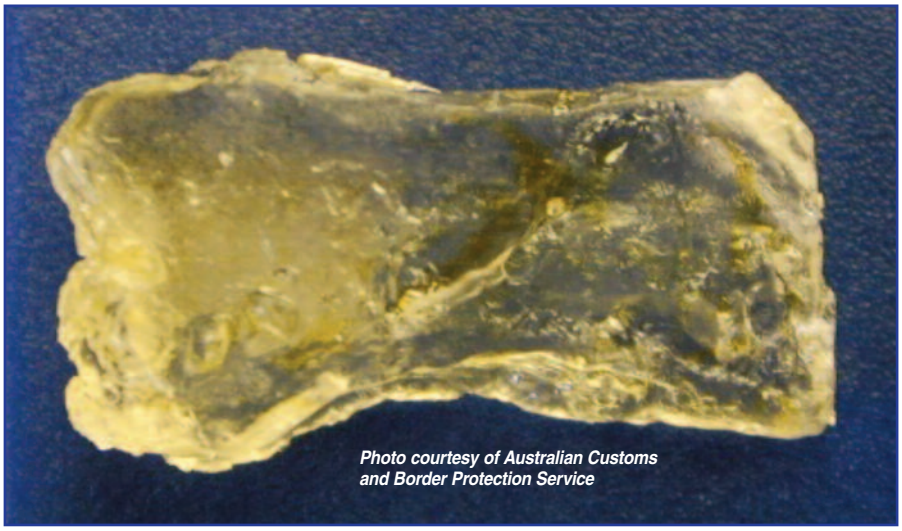


Photo courtesy of Australian Customs and Border Protection Service

number of large clandestine laboratories in Australia. The dismantling of clandestine laboratories will increasingly rely on successful investigations into organised criminal groups who operate large clandestine laboratories.

Methamphetamine prices and profits

One of the important features for any illicit market is the capacity to support significant profits or profitability. Profitability can be measured by the degree of mark-up in price between two levels of the market/transactions (some assumptions are needed here about the extent of "cutting" and the extent of quantity discounting). We found that mark-ups between the market levels were low, compared with overseas studies. This suggests that in Australia there is lower profitability between market levels. We also found that precursors purchased off-shore are very inexpensive whereas within Australia they are much more expensive (by a magnitude of thousands).

Our analysis did not support the assumption that higher weight is associated with higher purity. Purity varied greatly across different weights. Furthermore, the data analysed here reinforces that caution needs to be taken when using average purity (which may be highly misleading).

Economic modelling of the impact of drug law enforcement

For the second aim (i.e., to conduct an economic evaluation of different law enforcement interventions directed at different levels of the methamphetamine market), we built an economic model that compared policing costs with impact on criminal groups, as measured by market values of methamphetamine seizures. As noted earlier, there are seven law enforcement interventions against various levels of the methamphetamine supply chain in Australia (see Figure 1) however the economic model could only cover four[1] of these.

We used a cost-to-impact ratio that represents the average costs associated with the intervention relative to the impact, as measured by the value of the seized drugs. Technically we cannot call this ratio a cost-effectiveness ratio, and we use the term cost-to-impact ratio instead. Using the same measure of impact across each of the policing interventions means that we can compare the interventions with each other. The ratio of cost-to-impact was calculated for each intervention and then rank ordered. The lower the ratio, the better the intervention is relative to the other interventions being assessed on this metric. This last point is important: the ratio of costs to impact is only useful relative to its comparators; it is not a reflection of efficiency or potential cost savings.

Using Monte Carlo simulations to accommodate uncertainties in the data, the results indicated that the highest ranked intervention, in terms of average costs to impact, was clandestine laboratory detections, followed by interventions on end-product trafficking seizures (domestic), interventions on precursor seizures and end-product border seizures, however there is unlikely to be meaningful difference between these last two.

This result in favour of clandestine laboratory detections held even when we took into account significant data uncertainties. The result is highly robust: halving the monetary value of the loss to illicit drug enterprises caused by detections of clandestine laboratories, does not change the rank order; neither does doubling the clandestine laboratory budget. Interventions at domestic levels still have lower values (better) than interventions at the border.

Future research

All research has limitations, which we hope will be addressed in future research. The limitations with this work included:

In the economic model, the measure of policing impact was the monetary value of seized methamphetamine (or precursor). This is an imperfect impact measure which should include impact on criminal network, deterrence, public safety and public amenity, and disruptions of other criminal activity in which criminal networks are engaged.

Future research could adopt the broader, taxpayer (societal) perspective, rather than policing agency perspective.

There is a substantial lack of data across many areas of illicit drug markets, thus consideration should be given to the development of data collection systems which would facilitate illicit drug market and law enforcement effectiveness research.

There is a lack research on the risks perceived by dealers (e.g., risks of arrest, conviction, incarceration). Research is needed to gather and analyse these types of data.

Implications for policy

Clandestine laboratories are an economically sensible focus for drug law enforcement. However, a redistribution of policing resources according to our results needs to be done cautiously. For example, interventions at border levels may have greater deterrence effect than at domestic levels (deterrence effects were not assessed in our model)

The effectiveness of law enforcement interventions may be enhanced by investing time and resources in gathering intelligence on criminal networks involved in methamphetamine manufacture and distribution prior to making arrests. In this way, arrests may be more cost-effective (e.g., arrests of key individuals) and have a greater potential to break up the criminal groups involved.

Given the cross jurisdictional (and international) nature of the methamphetamine market, law enforcement agencies will be more effective in targeting methamphetamine when there is sharing of intelligence and cooperation (e.g., between State police agencies, and between State and Federal agencies including the ACC).

The methamphetamine supply chain is dynamic and it changes in response to new technologies, emerging techniques, the specialist knowledge of criminals involved, and law enforcement interventions. Law enforcement should continue to invest resources in intelligence collection and analysis to keep abreast of emerging trends.

Given that this work represents the first attempt to conduct a comprehensive qualitative and quantitative analysis of the levels of the methamphetamine supply chain beyond retail level in Australia, we hope it will be a springboard for further research.

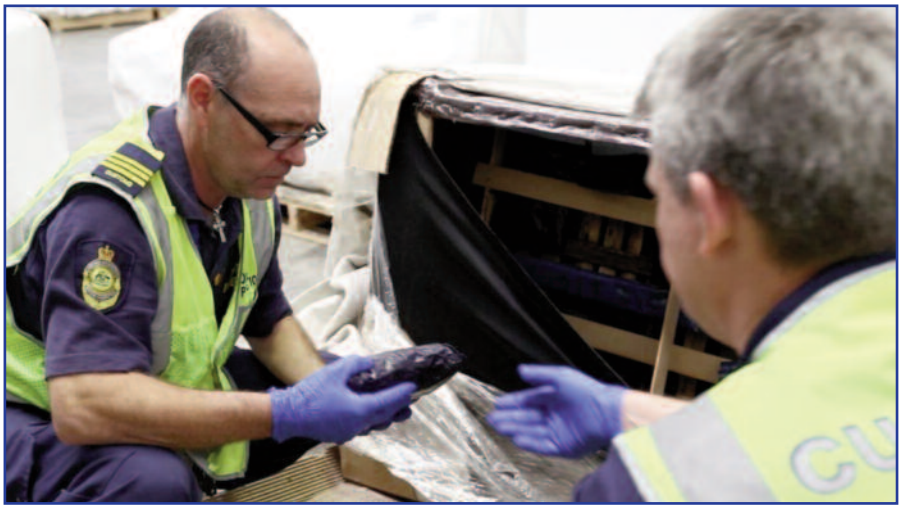
Acknowledgements

This work was funded by National Drug Law Enforcement Research Fund, and it would not have been possible without support provided by Project Reference Group members: Pat Ward (NSW Police), Brian Wilkins (Qld Police),

Det Supt John Pointing (Qld Police), Victoria Linabury (AFP), Chris Black (AFP), Catherine Phillips (Customs), Katherine Cave (Cutsoms), Paul Coleman (Customs), and Nicholas Winton (Customs). We are also indebted to Detective Inspector Nick Iorfino (Drug Squad, NSW Police), Detective Superintendant Nick Bingham (Drug Squad, NSW Police), Peter McGlynn (WA Police), Amber Migus (ACC), Toni Miceski (ACC), Joanne Gerstner-Stevens and Cate Quinn (Forensic Services Dept, Victoria Police) who assisted with data collection.

We thank Professor Jonathon Caulkins and Professor Peter Reuter for providing invaluable guidance in the conduct of this project; our colleagues Marian Shanahan, Jenny Chalmers and Caitlin Hughes who provided important support during the conduct of the project.

This summary article is based on an NDLERF report, published in 2012: Ritter, A., Bright, D., & Gong, W. (2012). Evaluating drug law enforcement interventions directed towards methamphetamine in Australia. NDLERF Monograph #44. Canberra: Commonwealth of Australia. **cl**



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Ritter, A., Bright, D., & Gong, W. (2010). Examining the relative cost-effectiveness of different types of law enforcement interventions directed towards methamphetamine: Unpublished NDLERF Research Report.

These were: 1. end product seizures (border); 2. precursor seizures (border); 3. clandestine laboratory detections (domestic); and 4. end-product trafficking seizures (domestic).

project **notes**

Young Australians Alcohol Reporting System (YAARS)

NDARC: Richard Mattick, Lucy Burns and Alexandra Aiken

External: Steve Allsop, Daniel Lubman, Tanya Chikritzhs, William Gilmore, Belinda Lloyd and Tina Lam

There is ongoing public and political concern in relation to alcohol consumption among young people. In order to effectively respond to risky drinking among young people, we need enhanced information about the nature, patterns and contexts of use. By engaging with young people and ensuring their input, this can assist us to direct policy, prevention and treatment efforts.

This project will be trialled in Western Australia, Victoria and New South Wales, in three metropolitan areas and one country area, with a view to national application thereafter. It will combine information from existing data sources with annual data gathering, targeting at risk young people (16–19 years old) to provide:

- an early warning system on risky patterns of alcohol consumption, contexts of use and related harms that will also allow tracking of changes in use and harm over time; and,
- timely information on patterns of use and related problems to inform policy, prevention and treatment initiatives.

Design and Method: Using methods based on the current Illicit Drugs Reporting System (IDRS) and the Ecstasy and Related Drugs Reporting System (EDRS), the YAARS project will collect annual information on young people's alcohol use including:

- patterns of alcohol use
- what they drink
- where the alcohol is obtained/from whom
- risks taking gaining alcohol and while drinking/intoxicated
- influences on drinking and risk taking
- parental influences on drinking behaviour
- other drugs used while drinking alcohol; and
- influences on low risk drinking as opposed to high risk drinking.

The project aims to target 16–19 year old people with higher levels of risky drinking in the transition from 'underage' to legal alcohol purchase age. We aim to recruit 400 respondents: 100 each from NSW, VIC, WA, and 100 from a rural location. 20 of each 100 will be randomly selected for more detailed qualitative interviews. Data will also be gathered via an internet questionnaire using snowball approaches (in addition to the sample of 400).

Data will be gathered during the period October–February, a potential high risk period of alcohol consumption for young people.

Once the system is established in three jurisdictions, other sources of funding will be sought for a national roll out and to implement a series of satellite studies.

YAARS aims to overcome the limitations of current national and local surveys of young people's drinking. As an annual survey it will provide trends overtime; it will uncover much of the hidden behaviour of young people's drinking which has led to it being unrepresented in current national and local surveys; and it will provide a greater level of detail about the context and consequences of young peoples' drinking.

Funded by: Curtin University/ANPHA Preventative Health Research Grants Program Shared Grant.

Young people's ideas about responding to alcohol, tobacco and other drug use

NDARC: Alison Ritter and Kari Lancaster

External: Jozica Kutin and Andrew Bruun

Drug and alcohol use by young people is a significant concern to the community. There is currently a range of initiatives aimed at better understanding the drug use of young people; however the understanding of young people's opinions and ideas about policies and initiatives

aimed at reducing the harms caused by the use of these substances has been limited.

The project aims to investigate the opinions of young Australians about how the government and community should respond towards drug and alcohol use.

The project utilises an online survey to collect data from young people. The questions refer to the likely consequences of alcohol and drug use, drug laws (legalisation/decriminalisation), and a range of different interventions such as treatment and education. Respondents are also asked which sources of information about drugs they prefer, and what should be done about new and emerging substances.

Recruitment has been completed, with over 2,000 respondents surveyed. Data is currently being analysed and written up.

The project is supported by a grant from the Australian National Council on Drugs (ANCD).

Attitudes of injecting drug users toward the legal status of the major illicit drugs

NDARC: Shane Darke and Michelle Torok

Injecting drug users (IDU) are frequently interviewed regarding drug use, risk behaviours and criminality. Users are far less frequently asked about their attitudes towards drug-related issues. This study aimed to determine IDU attitudes, and correlates of attitudes, towards continued prohibition, decriminalisation or legalisation of the major illicit drugs.

The study comprised 300 structured interviews with IDU who had injected on at least a weekly basis over the preceding 12 months.

Methamphetamine was rated the most harmful of the five illicit substances, and cannabis the lowest. By far the highest level of support for legislative change was for cannabis, with only 8.7% supporting continued prohibition. While there was majority support for change to the legal status of heroin, the modal position was for decriminalisation.

Support for changing the status of the three illicit psychostimulants was low, with the majority believing that methamphetamine (63.3%), cocaine (53.3%) and MDMA (53.3%) should remain illegal. Demographic characteristics were largely unrelated to attitudes. Lower levels of perceived harm were associated with increased likelihood of support for legalisation of all substances.

Recent use was positively related to support for both decriminalisation and legality of heroin, but was not associated with views on other substances. Higher lifetime polydrug use was associated with support for the legalisation of heroin, methamphetamine, cocaine and MDMA.

The project was supported by the Australian Government Department of Health and Ageing and the findings have been submitted for publication.

Alcohol and violence: Alcohol consumption, homicide and completed suicide in Australia, 1979-2009

NDARC: Shane Darke and Anthony Shakeshaft

External: Christopher Doran

Alcohol consumption is strongly associated with premature mortality. This study, supported by the Australian Government Department of Health and Ageing, aimed to determine the strength of association between national per capita alcohol consumption with homicide and suicide rates in Australia across the period 1979-2009.

Times series analyses of national homicide and suicide rates with annual per capita consumption of beer, wine and spirits over the period were conducted to:

- Determine cross correlations between national per capita alcohol consumption with homicide and suicide rates over the period 1979-2009; and
- Determine the cross correlations of consumption by beverage type with homicide and suicide rates.

The findings provide the first Australian data on the subject:

Beer consumption was positively correlated with homicide rates (r=0.70), while wine (r=-0.74) and spirits (r=-0.86) consumption rates were negatively correlated. These patterns were also true of both genders, and remained significant after controlling for unemployment and divorce rates. The relationship of alcohol consumption to suicide was narrower than that observed for homicide. Beer consumption was not significantly related to suicide rates (r=-0.20), while wine (r=-0.60) and spirits (r=-0.47) were negatively correlated. The absence of a correlation between suicide rates and beer consumption was due to a low association with male suicide (r=-0.01), compared to the significant association with female rates (r=0.64). **cl**

abstracts

The acceptability to Aboriginal Australians of a family-based intervention to reduce alcohol-related harms

Drug and Alcohol Review (2012) DOI: 10.1111/j.1465-3362.2012.00525.x

Bianca Calabria, Anton Clifford, Anthony Shakeshaft, Julaine Allan, Donna Bliss and Christopher Doran (2012)

Introduction and Aims: Cognitive-behavioural interventions that use familial and community reinforcers in an individual's environment are effective for reducing alcohol-related harms. Such interventions have considerable potential to reduce the disproportionately high burden of alcohol-related harm among Aboriginal Australians if they can be successfully tailored to their specific needs and circumstances. The overall aim of this paper is to describe the perceived acceptability of two cognitive–behavioural interventions, the Community Reinforcement Approach (CRA) and Community Reinforcement and Family Training (CRAFT), to a sample of Aboriginal people.

Design and Methods: Descriptive survey was administered to 116 Aboriginal people recruited through an Aboriginal Community Controlled Health Service and a community-based drug and alcohol treatment agency in rural New South Wales, Australia.

Results: Participants perceived CRA and CRAFT to be highly acceptable for delivery in their local Aboriginal community. Women were more likely than men to perceive CRAFT as highly acceptable. Participants expressed a preference for counsellors to be someone they knew and trusted, and who has experience working in their local community. CRA was deemed most acceptable for delivery to individuals after alcohol withdrawal and CRAFT for people who want to help a relative/friend start alcohol treatment.There was a preference for five or more detailed sessions.

Discussion and Conclusions: Findings of this study suggest that CRA and CRAFT are likely to be acceptable for delivery to some rural Aboriginal Australians, and that there is potential to tailor these interventions to specific communities.

Methamphetamine Users' Perceptions of Exchanging Drugs for Money: Does Trust Matter?

Journal of Drug Issues, Advance online publication 1–14 , DOI: 10.1177/0 022042612471652

Jenny Chalmers and Deborah Bradford (2013)

Abstract: Trust, between regular buyers and sellers, is thought to underpin retail-level illicit drug markets, discouraging sellers from taking advantage of buyers. Although dealers report rewarding regular, trusted customers with assured purity, less is known about their customers' experience of trust. Interviews with 101 methamphetamine users in New South Wales, Australia, confirm that users establish ongoing relationships with dealers. Irrespective of their level of methamphetamine use, some users trust their main dealer to supply a fair deal, whereas others expect to be taken advantage of. The study identified factors other than trust that might regulate dealer behaviour. Methamphetamine use ebbs and flows. Users source drugs from multiple dealers, substitute other drugs for methamphetamine, and some buy a range of drugs from the one dealer. Our findings emphasize the complexity of factors that influence decisions.

Craving as a predictor of treatment outcomes in heavy drinkers with comorbid depressed mood

Addictive Behaviors, 28, 1585-1592

Jennifer M. Connolly, David J. Kavanagh, Amanda L. Baker, Frances J. Kay-Lambkin, Terry J. Lewin, Penelope J. Davis and Lake-Hui Quek

Abstract: Alcohol and depression comorbidity is high and is associated with poorer outcomes following treatment. The ability to predict likely treatment response would be advantageous for treatment planning. Craving has been widely studied as a potential predictor, but has performed inconsistently. The effect of comorbid depression on craving's predictive performance however, has been largely neglected, despite demonstrated associations between negative affect and craving.

Design and methods: The current study examined the performance of craving, measured pre-treatment using the Obsessive subscale of the Obsessive Compulsive Drinking Scale, in predicting 18-week and 12-month post-treatment alcohol use outcomes in a sample of depressed drinkers. Data for the current study were collected during a randomized controlled trial (Baker, Kavanagh, Kay-Lambkin, Hunt, Lewin, Carr, & Connolly, 2010) comparing treatments for comorbid alcohol and depression. A subset of 260 participants from that trial with a Timeline Follow back measure of alcohol consumption was analysed.

Results: Pre-treatment craving was a significant predictor of average weekly alcohol consumption at 18 weeks and of frequency of alcohol binges at 18 weeks and 12 months, but pre-treatment depressive mood was not predictive, and effects of Baseline craving were independent of depressive mood. Results suggest a greater ongoing risk from craving than from depressive mood at Baseline.

Effectiveness of a Selective, Personality-Targeted Prevention Program for Adolescent Alcohol Use and Misuse. A Cluster Randomized Controlled Trial

JAMA Psychiatry, 2013; advance online publication January 23 :1-9. doi:10.1001

Patricia J. Conrod, Maeve O'Leary-Barrett, Nicola Newton, Lauren Topper, Natalie Castellanos-Ryan, Clare Mackie and Alain Girard

Context: Selective school-based alcohol prevention programs targeting youth with personality risk factors for addiction and mental health problems have been found to reduce substance use and misuse in those with elevated personality profiles.

Objectives: To report 24-month outcomes of the Teacher-Delivered Personality-Targeted Interventions for Substance Misuse Trial (Adventure trial) in which school staff were trained to provide interventions to students with 1 of 4 high-risk (HR) profiles: anxiety sensitivity, hopelessness, impulsivity, and sensation seeking and to examine the indirect herd effects of this program on the broader low-risk (LR) population of students who were not selected for intervention.

Design and setting: Cluster randomized controlled trial.Secondary schools in London, United Kingdom. A total of 1210 HR and 1433 LR students in the ninth grade (mean [SD] age, 13.7 [0.33] years). Schools were randomized to provide brief personality-targeted interventions to HR youth or treatment as usual (statutory drug education in class).

Main Outcome Measures: Participants were assessed for drinking, binge drinking, and problem drinking before randomization and at 6-monthly intervals for 2 years.

Results: Two-part latent growth models indicated long-term effects of the intervention on drinking rates (= −0.320, SE = 0.145, P = .03) and binge drinking rates (= −0.400, SE = 0.179, P = .03) and growth in binge drinking (= −0.716, SE = 0.274, P = .009) and problem drinking (= −0.452, SE = 0.193, P = .02) for HR youth. The HR youth were also found to benefit from the interventions during the 24-month follow-up on drinking quantity (= −0.098, SE = 0.047, P = .04), growth in drinking quantity (= −0.176, SE = 0.073, P = .02), and growth in binge drinking frequency (= −0.183, SE = 0.092, P = .047). Some herd effects in LR youth were observed, specifically on drinking rates (= −0.259, SE = 0.132, P = .049) and growth of binge drinking (= −0.244, SE = 0.073, P = .001), during the 24-month follow-up.

Conclusions: Findings further support the personality-targeted approach to alcohol prevention and its effectiveness when provided by trained school staff. Particularly novel are the findings of some mild herd effects that result from this selective prevention program.

A randomised controlled trial of sublingual buprenorphine-naloxone film versus tablets in the management of opioid dependence

Drug and Alcohol Dependence, Advance Online Publication, 1-8

Lintzeris N, Leung S.Y, Dunlop, A.J, Larance B, White N, Rivas G.R , Holland R.M, Degenhardt L, Muhleisen P, Hurley M and Ali R

Background: Buprenorphine–naloxone sublingual film was introduced in 2011 in Australia as an alternative to tablets. This study compared the two formulations on subjective dose effects and equivalence, trough plasma levels, adverse events, patient satisfaction, supervised dosing time, and impact upon treatment outcomes (substance use, psychosocial function).

Method: 92 buprenorphine–naloxone tablet patients were recruited to this outpatient multi-site double-blind double-dummy parallel group trial. Patients were randomised to either tablets or film, without dose changes, over a 31 day period.

Results: No significant group differences were observed for subjective dose effects, trough plasma buprenorphine or norbuprenorphine levels, adverse events and treatment outcomes. Buprenorphine–naloxone film took significantly less time to dissolve than tablets (173 ± 71 versus 242 ± 141 s, p = 0.007, F = 7.67).

Conclusions: The study demonstrated dose equivalence and comparable clinical outcomes between the buprenorphine–naloxone film and tablet preparations, whilst showing improved dispensing times and patient ratings of satisfaction with the film.

Contributory and Incidental Blood Concentrations in Deaths Involving Citalopram*

Journal of Forensic Sciences, Advance online publications, 1-4

Shane Darke, Michelle Torok and Jo Duflou

Abstract: All cases presenting to the New South Wales Department of Forensic Medicine between January 1, 2001 and December 31, 2010 in which citalopram was detected were retrieved. A total of 348 cases were identified. Citalopram contributed to death in 21.0%, and was incidental in 79.0%. Cases in which citalopram was contributory to death had significantly higher blood citalopram concentrations than incidental cases (0.50 mg/L vs. 0.30 mg/L). Citalopram concentrations varied significantly by contributory status: sole citalopram toxicity (median = 1.30 mg/L), citalopram/other drug toxicity (0.50 mg/L), and incidental cases (0.30 mg/L). Citalopram concentrations also varied by suicide status, with the highest concentration found in suicides where citalopram contributed to death (0.70 mg/L) compared with 0.50 mg/L for nonsuicide cases where citalopram contributed to death. In almost all contributory cases (69/73), other psychoactive substances were also detected, most commonly benzodiazepines (47.9%), alcohol (45.2%), and opioids (40.1%).

Mortality among people who inject drugs: a systematic review and meta-analysis

Bulletin of the World Health Organisation, 9(2), 102-123

Bradley Mathers, Louisa Degenhardt, Chiara Bucello, James Lemon, Lucas Wiessing and Mathew Hickman

Objective: To systematically review cohort studies of mortality among people who inject drugs, examine mortality rates and causes of death in this group, and identify participant- and study-level variables associated with a higher risk of death.

Methods: Tailored search strings were used to search EMBASE, Medline and PsycINFO. The grey literature was identified through online grey literature databases. Experts were consulted to obtain additional studies and data. Random effects meta-analyses were performed to estimate pooled crude mortality rates (CMRs) and standardized mortality ratios (SMRs).

Findings: Sixty-seven cohorts of people who inject drugs were identified, 14 of them from low- and middle-income countries. The pooled CMR was 2.35 deaths per 100 person–years (95% confidence interval, CI: 2.12–2.58). SMRs were reported for 32 cohorts; the pooled SMR was 14.68 (95% CI: 13.01–16.35). Comparison of CMRs and the calculation of CMR ratios revealed mortality to be higher in low- and middle-income country cohorts, males and people who injected drugs that were positive for human immunodeficiency virus (HIV). It was also higher during off-treatment periods. Drug overdose and acquired immunodeficiency syndrome (AIDS) were the primary causes of death across cohorts.

Conclusion: Compared with the general population, people who inject drugs have an elevated risk of death, although mortality rates vary across different settings. Any comprehensive approach to improving health outcomes in this group must include efforts to reduce HIV infection as well as other causes of death, particularly drug overdose.

Exploring the existence of drug policy 'ideologies' in Australia

Drugs: education, prevention and policy, advance online publication, 1-10

Francis Matthew-Simmons, Matthew Sunderland and Alison Ritter

Aims: Knowledge of public opinion towards drug policy is often limited to analyses of individual survey questions. There has been less thought given to the underlying structure of public opinion, and how attitudes towards different facets of drug policy, for example, law enforcement and harm reduction, might align into ideological positions. This paper aims to assess the extent to which distinct ideologies are present among the general public in Australia in relation to drug policy.

Method: The study involved a Latent Class Analysis of data taken from the 2010 National Drug Strategy Household Survey. The analysis categorized individuals into mutually exclusive groups (classes), according to their responses to 15 attitudinal items.

Findings: Six classes of individuals were identified, and were labelled as: uninformed, ambivalent, detached prohibitionists, committed prohibitionists, harm reductionists and legalizers.

Conclusions: The unique analysis presented in this paper demonstrates the existence of six distinct classes of opinions towards drug policy in an Australian sample. Whilst there were a large proportion of respondents in support of both drug legalization and harm reduction, there were also many who opposed drug legalization, yet supported harm reduction. Any assumption that supporting harm reduction automatically equates with support for legalization, is erroneous.

Screening and managing cannabis use: comparing GP's and nurses' knowledge, beliefs and behavior

Substance Abuse Treatment, Prevention and Policy 2012, 7:31

Melissa M Norberg, Peter Gates, Paul Dillon, David J Kavanagh, Ramesh Manocha and Jan Copeland

Background: General practitioners (GPs) and nurses are ideally placed to address the significant unmet demand for the treatment of cannabis-related problems given the numbers of people who regularly seek their care. The aim of this study was to evaluate differences between GPs and nurses' perceived knowledge, beliefs, and behaviors toward cannabis use and its screening and management.

Methods: This study involved 161 nurses and 503 GPs who completed a survey distributed via conference satchels to delegates of Healthed seminars focused on topics relevant to women and children's health. Differences between GPs and nurses were analyzed using 2- tests and two-sample t-tests, while logistic regression examined predictors of service provision.

Results: GPs were more likely than nurses to have engaged in cannabis-related service provision, but also more frequently reported barriers related to time, interest, and having more important issues to address. Nurses reported less knowledge, skills, and role legitimacy. Perceived screening skills predicted screening and referral to alcohol and other drug (AOD) services, while knowing a regular user increased the likelihood of referrals only.

Conclusions: Approaches to increase cannabis-related screening and intervention may be improved by involving nurses, and by leveraging the relationship between nurses and doctors, in primary care.

Factor mixture analysis of DSM-IV symptoms of major depression in a treatment seeking clinical population

Comprehensive Psychiatry, advance online publication, 1-10

Matthew Sunderland, Natacha Carragher, Nora Wong and Gavin Andrews

Background: There is a paucity of empirical studies examining the latent structure of depression symptoms within clinical populations.

Objective: The current study aimed to evaluate the latent structure of DSM-IV major depression utilising dimensional, categorical, and hybrid models of dimensional and categorical latent variables in a large treatment-seeking population.

Methods: Latent class models, latent factor models, and factor mixture models were fit to data from 1165 patients currently undergoing online treatment for depression.

Results: Model fit statistics indicated that a two-factor model fit the data the best when compared to a one-factor model, latent class models, and factor mixture models.

Conclusions: The current study suggests that the structure of depression consists of two underlying dimensions of depression severity when compared to categorical or a mixture of both categorical and dimensional structures. For clinical samples, the two latent factors represent psychological and somatic symptoms.

Determinants of Antiretroviral Therapy Initiation and Treatment Outcomes for People Living With HIV in Vietnam

HIV Clinical Trials, 14, 21-33

Dam Anh Tran, Anthony Shakeshaft, Anh Duc Ngo, Kylie-Ann Mallitt, David Wilson, Christopher Doran and Lei Zhang

Objectives: This study explores patient characteristics that are significantly associated with very late combination antiretroviral therapy (cART) initiation (CD4 count ≤100 cells/mm3) and examines the association between patient characteristics and treatment outcomes, CD4 recovery, and mortality.

Design: Data were obtained from the clinical records of 2,198 HIV/AIDS patients in 13 outpatient clinics across 6 provinces in Vietnam.

Methods: Multivariate logistic regression and Cox proportional hazards regression were used to identify patient characteristics that are significantly associated with very late cART initiation and to measure relationships between patient characteristics and treatment outcomes.

Results: Very late cART initiation was significantly associated with being male compared with female (odds ratio [OR],0.36; 95% CI, 0.23–0.58), becoming HIV infected through injecting drugs (OR, 2.13; 95% CI, 1.09–4.14), and having opportunistic infections at cART initiation (OR, 1.69; 95% CI, 1.02–2.86). Being male (female vs male: hazard ratio [HR], 0.45; 95% CI, 0.20–0.98), very late cART initiation (timely vs late: HR, 0.18; 95% CI, 0.04–0.72), low baseline body mass index (BMI) (HR, 0.95; 95% CI, 0.92–0.98), and later baseline WHO clinical stage (WHO clinical stage IV vs combined group of stage I and II: HR, 5.70; 95% CI, 3.90–7.80) were significantly associated with death, whereas being female compared with male (HR, 1.51; 95% CI, 1.14–1.99) and timely cART initiation (HR, 35.45; 95% CI, 13.67–91.91) were significant predictors of CD4 recovery.

Conclusions: Timely testing of patients for HIV, increasing use of CD4 count testing services, and starting cART earlier are essential to reduce mortality and improve treatment outcomes.

The contributions of viral hepatitis and alcohol to liver-related deaths in opioid-dependent people

Drug and alcohol dependence, advance online publication, 1-6

Sarah Larney, Deborah Randall, Amy Gibson and Louisa Degenhardt

Background: Mortality rates are elevated among heroin-dependent populations compared to the general population. Liver disease is emerging as an important contributor to mortality as the heroin-dependent population ages. Two major risk factors for liver disease are hepatitis C virus infection and chronic heavy alcohol use. Both of these are highly prevalent among heroin dependent people, but their relative contribution to liver-related mortality is poorly understood.

Methods: Data recording all prescriptions of opioid substitution treatment in New South Wales, Australia, 1997–2005, were linked to the National Death Index. Crude and standardised mortality rates and standardised mortality ratios were calculated for liver-related and other major causes of death. Frequency counts were obtained for viral hepatitis and alcohol mentions in underlying liver deaths.

Results: There were 208 underlying liver deaths for a CMR of 72.4 per 100,000 py (95% CI 62.9, 82.9), and liver deaths occurred at 9.8 times the general population rate (95% CI 8.5, 11.2). There were increases in liver-related mortality over time. Viral hepatitis was mentioned in three-quarters (n = 156, 76%), and alcohol in 43% (n = 90) of underlying liver deaths.

Conclusions: Liver-related deaths were shown to be increasing in this heroin-dependent population, and the majority of these deaths involved chronic viral hepatitis infection. Increased uptake of treatment for hepatitis C virus infection is crucial to reducing the burden of liver-related mortality in this population. Hepatitis B vaccination, and screening of OST patients for alcohol use disorders and delivery of brief interventions as clinically indicated may also be of benefit.

Measuring research influence on drug policy: A case example of two epidemiological monitoring systems

International Journal of Drug Policy, 24, 30-37.

Alison Ritter and Kari Lancaster

Background: Assessing the extent to which drug research influences and impacts upon policy decision-making needs to go beyond bibliometric analysis of academic citations. Policy makers do not necessarily access the academic literature, and policy processes are largely iterative and rely on interactions and relationships. Furthermore, media representation of research contributes to public opinion and can influence policy uptake.

In this context, assessing research influence involves examining the extent to which a research project is taken up in policy documents, used within policy processes, and disseminated via the media.

Methods: This three component approach is demonstrated using a case example of two ongoing illicit drug monitoring systems: the Illicit Drug Reporting System (IDRS) and the Ecstasy and related Drugs Reporting System (EDRS). Systematic searches for reference to the IDRS and/or EDRS within policy documents, across multiple policy processes (such as parliamentary inquiries) and in the media, in conjunction with analysis of the types of mentions in these three sources, enables an analysis of policy influence. The context for the research is also described as the foundation for the approach.

Results: The application of the three component approach to the case study demonstrates a practical and systematic retrospective approach to measure drug research influence. For example, the ways in which the IDRS and EDRS were mentioned in policy documents demonstrated research utilisation. Policy processes were inclusive of IDRS and EDRS findings, while the media analysis revealed only a small contribution in the context of wider media reporting.

Conclusion: Consistent with theories of policy processes, assessing the extent of research influence requires a systematic analysis of policy documents and processes. Development of such analyses and associated methods will better equip researchers to evaluate the impact of research.

ANKK1, TTC12, and NCAM1 Polymorphisms and Heroin Dependence Importance of Considering Drug Exposure

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Elliot C. Nelson, Michael T. Lynskey, Andrew C. Heath, Naomi Wray, Arpana Agrawal, Fiona L. Shand, Anjali K. Henders, Leanne Wallace, Alexandre A. Todorov, Andrew J. Schrage, Nancy L. Saccone, Pamela A. Madden, Louisa Degenhardt, Nicholas G. Martin and Grant W. Montgomery

Context: The genetic contribution to liability for opioid dependence is well established; identification of the responsible genes has proved challenging.

Objective: To examine association of 1430 candidate gene single-nucleotide polymorphisms (SNPs) with heroin dependence, reporting here only the 71 SNPs in the chromosome 11 gene cluster (NCAM1, TTC12, ANKK1, DRD2) that include the strongest observed associations.

Design: Case-control genetic association study that included 2 control groups (lacking an established optimal control group).

Setting: Semistructured psychiatric interviews.

Participants: A total of 1459 Australian cases ascertained from opioid replacement therapy clinics, 531 neighbourhood controls ascertained from economically disadvantaged areas near opioid replacement therapy clinics, and 1495 unrelated Australian Twin Registry controls not dependent on alcohol or illicit drugs selected from a twin and family sample.

Main outcome measure: Lifetime heroin dependence.

Results: Comparison of cases with Australian Twin Registry controls found minimal evidence of association for all chromosome 11 cluster SNPs ($P \geq .01$); a similar comparison with neighbourhood controls revealed greater differences ($P \geq 1.8 \times 10{-}4$). Comparing cases (n = 1459) with the subgroup of neighbourhood controls not dependent on illicit drugs (n = 340), 3 SNPs were significantly associated (correcting for multiple testing): ANKK1 SNP rs877138 (most strongly associated; odds ratio = 1.59; 95% CI, 1.32-1.92; $P = 9.7 \times 10{-}7$), ANKK1 SNP rs4938013, and TTC12 SNP rs7130431. A similar pattern of association was observed when comparing illicit drug–dependent (n = 191) and nondependent (n = 340) neighbourhood controls, suggesting that liability likely extends to nonopioid illicit drug dependence. Aggregate heroin dependence risk associated with 2 SNPs, rs877138 and rs4492854 (located in NCAM1), varied more than 4-fold ($P = 2.7 \times 10{-}9$ for the risk-associated linear trend).

Conclusions: Our results provide further evidence of association for chromosome 11 gene cluster SNPs with substance dependence, including extension of liability to illicit drug dependence. Our findings highlight the necessity of considering drug exposure history when selecting control groups for genetic investigations of illicit drug dependence. **cl**

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