

**SPEED**

**INHALANTS**

**LSD**

**STIMULANTS**

**PRESCRIPTION DRUGS**

**LEGAL HIGHS**



**UNSW**  
AUSTRALIA

Annual Report 2013

National Drug and Alcohol Research Centre

Medicine

National Drug and Alcohol Research Centre

**ECSTASY**

**CANNABIS**

**ICE**

**METHAMPHETAMINE**

**ANXIETY**

**NEW PSYCHOACTIVE SUBSTANCES**

**HEROIN**

**PSYCHOSIS**

**DEPENDENCE**

**ALCOHOL**

**HALLUCINOGENS**

**PHARMACEUTICAL OPIOIDS**

**DEPRESSION**



**OXYCODONE**

**COCAINE**

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National Drug and Alcohol Research Centre  
UNSW  
Sydney NSW 2052  
22-32 King Street  
Randwick NSW 2031  
Telephone: (02) 9385 0333  
Facsimile: (02) 9385 0222  
<http://ndarc.med.unsw.edu.au>

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# ABOUT THE CENTRE

**The National Drug and Alcohol Research Centre (NDARC) is a premier research institution in Sydney, Australia and is recognised internationally as a Research Centre of Excellence. NDARC was established at the University of New South Wales (UNSW) in May 1986 and officially opened in November 1987. It is funded by the Australian government as part of its National Drug Strategy.**

## Our mission

To conduct and disseminate high quality research and related activities that increases the effectiveness of responses to alcohol and other drug related harm.

## Our values

To achieve our mission and carry out our purpose we are committed to:

- Maintaining intellectual independence and acting in the public interest
- Scientific rigour
- Originality and creativity
- Public accountability, communicating evidence openly
- Ethical behaviour
- Articulating and reflecting on the assumptions in Alcohol and Other Drugs (AOD) research and public discourse
- Contributing to closing the gap in avoidable AOD related morbidity and mortality and service access for Aboriginal and Torres Strait Islander peoples and people living in rural and remote settings
- Producing research that maintains a consumer, community, policy and scientific focus
- Meaningful engagement with research participants
- Contributing to both Australian and international efforts to reduce alcohol and other drug related harm
- Building an organisational culture that supports professional development and the generation of new ideas.

## Key outcome areas

The areas of work in which we seek to achieve outcomes are:

- The development and testing of new and existing interventions
- Improving the understanding of the nature and extent of AOD use and harm
- Building research capacity in the sector
- Conducting policy research
- Communicating the outcomes of research

## Office of the Director

### Director

Professor Michael Farrell

### Deputy Directors

Professor Alison Ritter

Associate Professor Anthony Shakeshaft

### Centre Operations Manager

Karen Hill (On maternity leave from October)

Gemma Nevin (Acting manager from October)

### Media Communications Manager

Marion Downey

## Strategic Advisory Committee

The Strategic Advisory Committee is a group of senior academic staff whose function is to provide strategic advice to the Office of the Director, relating to research directions. The Committee was formed in June 2012. In 2013 the members of the Committee were:

Professor Michael Farrell

Dr Lucy Burns

Professor Jan Copeland

Professor Shane Darke

Professor Louisa Degenhardt

Professor Kate Dolan

Ms Marion Downey

Ms Karen Hill

Professor Richard Mattick

Professor Alison Ritter

Associate Professor Anthony Shakeshaft

Associate Professor Tim Slade

Professor Maree Teesson

## NDARC Advisory Board

In 2013 the Members of the NDARC Advisory Board were:

**Mr Bob Mansfield** AO, FCPA, Chair of NDARC Advisory Board  
Director, Investec Bank (Australia) Limited

**Professor Michael Farrell** MB, BCh, BAO, LRCP&SI Honours in Medicine, FRCP, FRC Psych  
Director, NDARC  
Faculty of Medicine  
University of New South Wales

**Professor Denis Wakefield**, MBBS, MD, DSc, FRACP, FRCPA  
Associate Dean (Strategy & External Relations)  
Faculty of Medicine,  
University of New South Wales

**Professor Les Field** BSc, PhD, DSc, CChem, FRACI, FAA  
Deputy Vice Chancellor (Research) & Professor of Chemistry,  
University of New South Wales

**Dr Don Weatherburn** BA (Hons), PhD, PSM, FASSA  
Director, NSW Bureau of Crime Statistics and Research

**Mr David McGrath**, BSc, MBA  
Director, Mental Health and Drug & Alcohol Programs,  
NSW Health  
(On six months leave from 14th August 2013)

**Professor Mel Miller**, BBA (Hons)  
Psychology, MAppPsych, PhD  
Director, Siggins Miller

# CHAIRMAN'S REPORT



The long term funding of the National Research Centres has enabled Australia to achieve some of the highest and most productive outputs in the world.

**In the three years since I have had the honour of being Chairman of the Advisory Board of NDARC two things have become abundantly clear to me: the challenges of drug and alcohol use and related harms are not getting any less. And the funding environment in which our very able researchers are operating is not getting any easier.**

The reality is that in 2013 NDARC was competing for project grant dollars in one of the toughest funding environments in years. Last year only 17% of project grants Australia wide that were submitted to the National Health and Medical Research Council (NHMRC) for funding were successful - down from a 20% success rate the year before. NDARC's individual performance as a centre was higher than the national average but there is always disappointment when first rate projects fail to get funded.

NDARC is fortunate to be supported by core funding from the Australian Federal Government and to be a leading research centre of the University of New South Wales. The long term funding of the National Research Centres has enabled Australia to achieve some of the highest and most productive outputs in drug and alcohol research outside of the United States, where over 80% of the world's drug and alcohol research is undertaken. This indicates the success of the Australian Government Department of Health strategy for building research capacity and enabling Australia to have a very strong commitment to evidence based clinical practice and policy development.

It is this core funding which gives us the infrastructure to compete for project funds. Yet it is these funds which are becoming harder to access. This is disappointing not only on an individual level for researchers but more importantly for Australians who may be denied access to the latest and most effective treatments, preventions and interventions which can only be developed and evaluated through rigorous research trials. Without project funds we also reduce our capacity to map drug and alcohol use and harms, at a time when governments around the world are grappling with rapidly emerging new challenges including new psychoactive substances and increased use of prescription opioids.

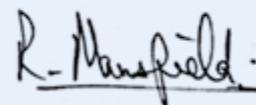
I doubt there is a single individual or family who has not been affected at some level by harmful use of drugs or alcohol. At a conservative estimate the cost of illicit drug and alcohol use in Australia is around \$25 billion. The figure more than doubles when tobacco is included. Yet to even begin to make a dent into that sizeable cost to the public purse we need to know the size of the problem, the causes of the problem and what treatment responses and policy responses have the greatest chance of success.

The pages of this report detail close to a hundred different projects which NDARC's research teams are involved in, aimed at tackling the problems from numerous different angles and at numerous different stages.

Drug and alcohol use is a hot media topic and to an extent this is to our advantage - more than 2,000 media articles last year referred to NDARC research or featured the expert opinion of our leading researchers. This public profile is extremely important. Australia's harm minimisation and harm reduction policies are a beacon of good public health policy recognised the world over. I have every confidence that our researchers will continue to find innovative ways to fund their projects as NHMRC funding becomes ever more elusive. But to do so requires everyone from the government, policy makers, clinicians and the general public to understand the value and the complexity of the work we do.

As well as funding, the quest for new accommodation for NDARC remains an important focus of the Board. The long term aim is that NDARC will move from its current "temporary" accommodation two kilometres away from the UNSW main campus to the Kensington campus as part of a neuroscience, mental health and public health research hub. NDARC's director Professor Michael Farrell is to be congratulated for the time and energy which he is devoting to this important project. The future of the field lies in collaborative networks across multiple disciplines - mental health, addiction, psychiatry, psychology, epidemiology, neurobiology and clinical trials. Physical proximity is not everything but it does help, particularly when it comes to fuelling the engine room of research, which begins with creative ideas generated by some of our greatest minds working together.

To acknowledge the challenges which lie ahead is not to ignore the fact that the Centre has had a great year. The pages of this report are a testament to that success. I would like to thank Professor Farrell and all the energetic staff at NDARC for their excellent work and results during the year.



**Mr Bob Mansfield AO**

Chairman, NDARC Board of Management

# DIRECTOR'S REPORT

**NDARC's primary goal is to provide the evidence to underpin treatment, prevention and policy in tackling problems of drug and alcohol use in Australia. Yet we cannot overlook the fact that drug and alcohol problems and their health and social impact are global issues with global ramifications and global solutions. As such our international collaborations and research are a significant component of our work.**

We have more than 30 international collaborators (see page 24) and are accredited with the World Health Organisation and the United Nations. We are very proud of the international recognition NDARC and its staff receive as a result of the high quality of work undertaken here.

Through the leadership of Professor Louisa Degenhardt, the Global Burden of Disease (GBD) Project (2010) has played a key role in calculating the level of disease, injury and death associated with illicit drug use and dependence. A number of major papers from this work were published this year including in *The Lancet*. The UN's *World Drug Report* uses a significant amount of the GBD work to profile the global drug problem.

The key finding from the GBD project is that opioid dependence causes the greatest health burden of all the illicit drugs and the burden in the worst affected countries (largely high-income nations such as the USA, UK and Australia) was 20 times greater than in the least affected countries. Young men aged 20-29 years are disproportionately affected at a crucial time in their lives. Despite the substantial preventable disease burden found to be attributable to the four drugs studied (opioids, cannabis, amphetamine and cocaine), their overall burden is still less than that of smoking and alcohol, which are together responsible for around 10% of the total death and illness burden worldwide.

Throughout the pages of this report we present the work being conducted by our teams to understand and ameliorate this burden.

The internet has significantly expanded the international illicit drug marketplace for both dealers and buyers. The range and number of new psychoactive substances available and used in Australia is still significantly less than has been reported in Europe. But as the number of international retailers selling into Australia increases, the explosion in the availability of these drugs worldwide is an issue of major significance. Our colleagues in Europe report that the rise in the number, type and availability of new psychoactive substances (NPS or 'new drugs') in Europe shows no signs of abating. The European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) reports

that 81 new drugs were detected in 2013 and almost 250 in the last four years. We must be on the alert for the distribution and use of these drugs within Australia.

In all, our staff produced close to 300 publications in peer reviewed journals over the year, as well as around 60 other reports and book chapters, and presented at more than 200 international and national conferences. We remain acutely aware however that for our work to have real impact it must be communicated and translated to a broader public, policy and clinical audience. Our communication teams have continued to develop ways in which to translate our work to a broad audience including through high impact national media coverage as well as emerging electronic and social media channels.

NDARC strongly appreciates the continued support from the University of New South Wales (UNSW) Vice Chancellor and the Dean of the Faculty of Medicine, who each recognise the centre's role as a leading high profile research centre of the university. A major focus for future development within the wider university will be the MindGardens project, which seeks to strengthen strategic collaboration and new innovative research by bringing together in one location UNSW's multiple centres devoted to better understanding the behaviour and neuroscience of complex problems.

I would in particular like to thank Colleen Krestensen and her staff at the Drug Strategy Branch in the Australian Government Department of Health for their unstinting support and for the opportunity to work closely to enable ongoing translation of research into practice and action at all levels of society. Our regular monthly conferences with the Drug Strategy Branch and the two other national research centres, NDRI and NCETA, have been invaluable in ensuring good communication and good understanding of the ever evolving national drug policy issues.



**Professor Michael Farrell**  
Director, NDARC



Professor Michael Farrell

# THE YEAR IN REVIEW

2013 was another highly successful year for NDARC in terms of research output, as the pages of this report demonstrate. A number of new projects commenced in 2013 having successfully received NHMRC funding in 2012 - these include the Centre of Research Excellence in Mental Health and Substance Use; development and evaluation of internet programs to treat depression and binge drinking in young people; an investigation into the cost benefit of health interventions for heroin use; and an evaluation of the effectiveness of behavioural activation therapy to treat depression among injecting drug users.

Professors Louisa Degenhardt, Richard Mattick and Maree Teesson commenced their five year NHMRC research fellowships. At the other end of the career spectrum Doctors Matthew Sunderland and Michael Livingston commenced their NHMRC early career research fellowships. Dr Briony Larence was awarded an early career fellowship that will commence in 2014. Dr Monica Barrett, who joins the Drug Policy Modelling Program from Curtin University next year, also received an early career research fellowship for her research in psychoactive substances and the internet.

A notable feature of NDARC is its PhD program and its development of the next generation of researchers. Four PhDs were awarded this year: Lynn Magor-Blatch, Paul Nelson, Melanie Simpson and Amy Johnston. As the number of early postdoctoral researchers at the centre continues to increase, Dr Emma Barrett and Dr Natacha Carragher established the Early Career Researcher Special Interest Group (SIG) to provide a networking and learning support environment for postdocs who are spread out among many different projects.

Collaborative research with other national and international universities and research centres was a hallmark of many of our grant successes in 2013. This includes a project led by NDARC in collaboration with the universities of Deakin, Queensland, Otago and the Murdoch Children's Research Institute which will look at the developmental consequences of various levels of teen drinking using data from four established cohorts - an extension

of the work of the Cannabis Cohort Research Consortium.

Other major collaborations announced in 2013 that will commence next year include a \$1.4 million project with the University of Newcastle to investigate approaches to improving alcohol treatment service models and outcomes. A joint project with the Kirby Institute will look at health outcomes in at-risk groups who inject drugs, including sex workers and homeless youth. A project led by the Black Dog Institute with health economics input from DPMP's Dr Marian Shanahan will investigate approaches to suicide prevention among young indigenous people using e-health technologies.

Below we present some highlights for this year organised by research area. More detail on each of the projects is given in the Current and Completed Projects section of this report.

## TREATMENT AND INTERVENTION

### Opioids

- Dr Briony Larence has led a team of researchers in developing and testing an opioid aberrant drug behaviour scale over the past three years. The scale has been presented to many service providers including the Hunter Integrated Pain Service, Newcastle, and the Pain Clinic at Prince of Wales Hospital, Randwick. The scale is designed to help clinicians predict which patients are likely to develop aberrant behaviour, including diversion and misuse of prescription opioids. A paper based on the scale is in preparation.

- NDARC researchers, in collaboration with A/Prof Gowing of the University of Adelaide and Prof Wayne Hall of the University of Queensland, have completed a systematic review and meta-analysis of naltrexone implants for the treatment of opioid dependence. The review concluded there is insufficient evidence to determine the effectiveness of this approach, and that further clinical studies are needed.
- Prof Kate Dolan commenced work on the development of an information kit for Medically-Assisted Treatment for Opioid Dependence. The kit is to inform health professionals and the general community about a variety of issues concerning treatment for heroin dependence.

### Comorbidity

- Through the Centre of Research Excellence in Mental Health and Substance Use (CREMS), NDARC continues its ground-breaking program of work in comorbidity treatment and prevention. There is a critical need to intervene early in the trajectory to prevent the long-term psychological and physical health problems associated with this comorbidity. Dr Emma Barrett successfully received a NSW Health Drug and Alcohol Research Grant to carry out a pilot study of an intervention for comorbid substance use disorder (SUD) and post-traumatic stress disorder (PTSD) among adolescents. The pilot study is set to start in 2014. Dr Barrett was awarded the prestigious Ian Potter Foundation Travel Grant to attend the European Association for Behavioural and Cognitive Therapies Congress in Marrakech, Morocco. She presented her research on the associations between substance use, PTSD and aggression and the implications for clinical practice.



Dr David Allsop



Dr Emma Barrett



Dr Lynda Berends



Dr Deborah Bradford



Dr Courtney Breen

Who will misuse  
**prescribed opioids?**  
Behaviour scale helps clinicians predict

- Approximately 25% of heroin users and 40% of methamphetamine users meet criteria for major depression, and this comorbidity has been linked to poorer treatment outcomes. Dr Joanne Ross is leading the NHMRC-funded Activate Study which is evaluating the effectiveness of behavioural interventions as a treatment approach for this group. Behavioural Activation Therapy for Depression is a structured treatment that aims to activate clients in specific ways that will increase rewarding experiences in their lives. It has shown promise in the United States in residential settings and the project is evaluating its effectiveness in Australia.
- Doctoral students at CREMS are investigating different treatment approaches for comorbidity. Mark Deady is working on the development of an internet-based intervention for young people who use alcohol to medicate symptoms of depression; Kathryn Woodcock is assessing the effectiveness of internet-delivered psychological support programs for managing comorbid substance use and trauma in Australian veterans and their partners; and Sonja Memedovic is researching depression in people with opioid dependence.

### Smoking

- An NHMRC project grant led by Prof Richard Mattick and coordinated by Dr Ryan Courtney is investigating a novel approach to improving smoking cessation outcomes among low-socio-economic status (SES) smokers. The randomised controlled trial (RCT) commenced recruitment in March and will assess whether the provision of counselling support aimed at alleviating financial stress, in addition to nicotine replacement therapy (NRT) and quit support, reduces financial stress and improves quit rates for low-income smokers. The project has met recruitment targets, with over 720 participants randomised with recruitment of the total sample (1,000 smokers) on schedule. An analysis of four waves of data from the Australian National Household Survey has been accepted for

## Women who are alcohol dependent and pregnant are missing out on treatment

publication in Tobacco Control. This analysis gives further support for the socio-economic differential in smoking. Dr Courtney received the Dean's Rising Star Award for his contribution to this research project.

### Prisons

- Prof Kate Dolan has been collaborating with Justice Health on a project examining inmates' views and experience of methadone treatment. In-depth interviews have been held with inmates to ascertain their motivations for entering and leaving methadone treatment.

### Alcohol

- Dr Lucy Burns and Dr Courtney Breen completed their project investigating treatment services for alcohol-dependent pregnant women. They found a lack of services and treatments for pregnant women with alcohol dependence. Findings from stakeholder interviews support

*conversation: Understanding the treatment needs of women who are pregnant and alcohol dependent.* The project's findings have been presented at the First International Conference for the Prevention of FASD in Edmonton, Canada, and the First Australasian Fetal Alcohol Use Disorders Conference: Time to Learn, Time to Act in Brisbane 19-20 November, 2013.

- Dr Lucy Burns, Dr Courtney Breen and Emilie Awbery worked on the Substance Misuse in Pregnancy Resource Development project - a national project that involves the development of a resource to help primary care health professionals identify, manage and treat pregnant women with SUDs. The educational resource is being developed with stakeholder input.
- Prof Kate Dolan, Dr Lucy Burns, Dr Nadine Ezard (St. Vincent's Hospital), Prof Eileen Baldry (UNSW) and A/Prof Carolyn Day (University of Sydney)

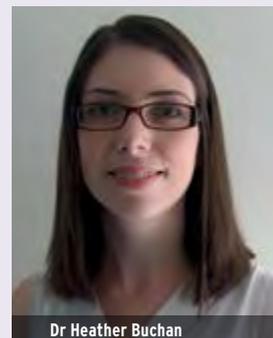
## Methamphetamine treatment in therapeutic communities works better than treatment as usual

the literature's conclusion that few pregnant women access treatment for alcohol use. The report concluded that gold standard in treatment for alcohol dependence in pregnancy should incorporate the following principles: standardised screening; treatment according to the severity of the disorder; a multidisciplinary team approach; inpatient admission for detoxification; extended hospitalisation post-delivery, and assertive follow-up of the mother and child through the child's formative years. A report was produced for the Foundation for Alcohol Research and Education (FARE): *It's time to have the*

received a FARE grant to explore the issue of a managed alcohol program for homeless people with severe alcohol dependence. At these programs, clients receive a regulated amount of alcohol at set times which reduces extreme intoxication and withdrawals. Such programs reduce the need for police, hospitals and ambulances to deal with the clients. These programs have been very effective and cost-effective overseas and could play a role here.

### Cannabis

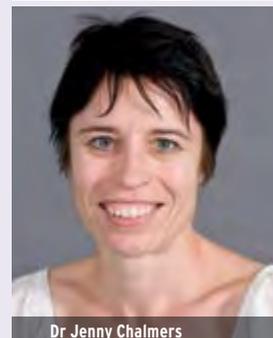
- Dr David Allsop of the National Cannabis Prevention and Information Centre (NCPIC) led a landmark



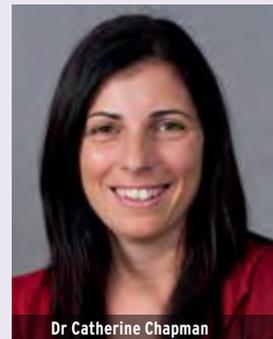
Dr Heather Buchan



Dr Natacha Carragher



Dr Jenny Chalmers



Dr Catherine Chapman



Dr Nicole Clement



Dr Ryan Courtney



Prof. Shane Darke



Prof. Louisa Degenhardt



Prof. Kate Dolan



Dr Peter Gates

clinical trial evaluating Nabiximols for managing cannabis withdrawal. It was completed in 2013, and a paper describing its major outcomes has been accepted for publication in *JAMA Psychiatry*. The team involved have been extremely busy disseminating the findings of this seminal study nationally and internationally, with talks presented at more than a dozen conferences and training sessions in 2013 alone, including invited presentations by Dr Allsop at the University of Wollongong Psychology Colloquium and a plenary talk at the New Zealand Drug Foundation International Drug Policy Symposium.

- Dr Allsop is chief investigator on an NHMRC grant to study the effects of exercise on cannabis withdrawal (Exercise for cannabis withdrawal: A randomized controlled trial). The grant is led by A/Prof Nicholas Lintzeris, and Dr Allsop will be moving to Sydney University in 2014 to coordinate the trial at Prof Iain McGregor's psychopharmacology lab.
- Dr Allsop, Profs Copeland and Degenhardt and Dr Sally Rooke supervised a student from UNSW's Masters of Public Health program in 2013 to perform a meta-analysis of the effects of cannabis use on the development of anxiety disorders. The project has been completed and a manuscript is being prepared for publication in 2014.
- Dr Allsop led a study to explore the effects of quitting cannabis on changes in alcohol and cigarette use using data from his cannabis withdrawal experiments. A manuscript is currently under review.
- Dr John Howard collaborated with the Pharmacy Guild of Australia, the Faculty of Pharmacy, University of Sydney, the School of Pharmacy, University of Auckland, and Community GP & Pharmacy Liaison, Northern Sydney Area Drug and Alcohol Services, NSW Health on a project evaluating the role of pharmacist-led interventions for people with cannabis use disorders. To date they have provided capacity-building activities and launched an NCPIC sub-site to assist pharmacists

## A web-based treatment for **cannabis** users has helped them "reduce their use"

to address customers' cannabis use-related difficulties and provide information, brief interventions and referral.

- Dr John Howard coordinated an online survey of 235 cannabis users' subjective experience of withdrawal from bush, hydro and synthetic cannabis. Most had attempted a reduction or cessation of cannabis use. Findings indicated that a significant number of participants who tried synthetic cannabinoids ceased their use, citing negative experiences, and that withdrawals from 'hydro' were perceived as the most severe. It appears that while some users of synthetic cannabinoids experienced unpleasant withdrawal symptoms, most did not use them for long enough to experience severe withdrawals. However, as in many online studies, most participants were well-educated and employed poly-substance users and might not be representative of the broader population of users of synthetic cannabinoids. Findings were presented at a special symposium on synthetic cannabinoids at APSAD 2013.
- A recent RCT of a web-based treatment program for cannabis use, Reduce Your Use, showed that the program was effective in assisting cannabis users to quit or cut down on their use. The program is now publicly available via the NCPIC website, and Dr Sally Rooke and Prof Jan Copeland are conducting a monitoring study in order to assess public response to the program with regard to uptake, compliance, satisfaction, and preferred elements of the program. Monitoring occurred in the second half of 2013. The program is obtaining around 30 sign-ups per month. Program evaluations and detailed usage data have been collected and will be analysed when the researchers have a complete year of data collection.

- Dr Sally Rooke and Prof Jan Copeland developed an online cannabis screening and feedback program. The program provides detailed personalised feedback to individuals about their cannabis use and related issues such as motives for using and consequences of use. An RCT comparing it to brief personalised feedback commenced in 2013, with around 100 participants recruited. Recruitment will continue into 2014.
- Dr Rooke, Prof Copeland and Lucy Albertella commenced recruitment for a study evaluating the efficacy of a smartphone app aimed at helping people to stop or reduce their cannabis use. The app received overall positive feedback from the 39 participants recruited in 2013, and findings thus far suggest that the app can assist users in reducing their cannabis use. Recruitment will continue into 2014 until at least 50 participants have completed the study.

### Homelessness

- Dr Lucy Burns and PhD student Elizabeth Whittaker continued to evaluate the outcomes of four programs designed to enhance the health and housing status of those experiencing homelessness. In particular, the impact of a range of housing interventions on substance use and mental health. The Inner City Youth at Risk Project, which provides integrated service responses to homeless youth in the Kings Cross area, was in the final stages of data collection. Data collection continued in 2013 for the evaluations of the Inner City Assertive Outreach Model (Way2Home), which ascertains the effectiveness of the case management and health support provided to long-term rough sleepers in inner Sydney, and the two housing programs for chronic rough sleepers that are based on 'Housing First' principles (Platform 70 and Common Ground Sydney). The Platform 70 project provides accommodation

in the private rental market, whereas Common Ground Sydney is a purpose-built congregated set of units, a proportion of which are available to chronic rough sleepers and the remainder used for social housing.

### Indigenous interventions

- Indigenous Australians experience a disproportionately high burden of alcohol-related harm relative to non-Indigenous Australians. These alcohol-related harms are typically cumulative, extending beyond the individual to the family and community. Few Indigenous-specific intervention programs have attempted to address these harms. Bianca Calabria's body of work in this area was completed in 2013, under the supervision of A/Prof Anthony Shakeshaft. Across a series of studies she showed the high burden of harm imposed by alcohol on Indigenous Australians, the promise of family-based interventions to help reduce those harms, tailored a US-based family intervention approach to Indigenous Australian settings, tested its acceptability and adapted the use of a clinical screening tool to Indigenous settings. A final paper on the cost-effectiveness of the intervention will be published in 2014.
- In another community-based Indigenous project, PhD student Ansari Bin Jainulabudeen has been evaluating the cost-utility of residential drug and alcohol treatment provided in an Indigenous community in Far North Queensland. At the other end of the spectrum, he has also worked with the community to evaluate the costs and benefits of a community-wide prevention program aimed at reducing short-term risky drinking among young people. This research has been done in conjunction with researchers at James Cook University, under the supervision of A/Prof Anthony Shakeshaft and Prof Chris Doran (Hunter Medical Research Institute and the University of Newcastle). It is a noteworthy project because it was instigated by an Indigenous community, who invited the

researchers to help them evaluate their own programs. This research is scheduled for completion in 2014.

### Community-based treatment approaches

- A new program of research was initiated in 2013, which seeks to evaluate the process, costs and outcomes of drug and alcohol (AOD) treatment services that are more fully integrated with mental health treatment services. For many years there has been clear recognition that many patients with both drug and alcohol and mental health problems fail to receive high-quality treatment because they fall between the cracks of AOD-specific services and mental-health-specific services. An innovative treatment program based in Coffs Harbour in NSW is seeking to design and implement a service that more seamlessly allows patients to obtain the treatment that is most appropriate to their needs. A team of researchers, led at NDARC by Catherine Foley and A/Prof Anthony Shakeshaft, have been invited to evaluate this innovative model in partnership with the treatment services.

### International Treatment Services

- 2013 saw the completion of research aimed at assessing the cost-effectiveness of HIV treatment in Vietnam. The combination of Vietnam's improving economy (which reduces its access to international funding assistance) and WHO's calls to increase the availability of HIV treatment services has highlighted the need for Vietnam to carefully consider its most cost-effective HIV treatment options. This research was led at NDARC by Dam Anh Tran and A/Prof Anthony Shakeshaft, in collaboration with researchers from the Kirby Institute (UNSW) and Prof Chris Doran (Hunter Medical Research Institute and the University of Newcastle). This work resulted in multiple publications, and Dam Anh Tran was awarded one of only two Junior Scientist Fellowships provided by the United States-based International AIDS Society and the

National Institute on Drug Abuse (NIDA), commencing in 2014.

### Methamphetamine

- Lynne Magor-Blatch, supervised by Prof Jan Copeland and Dr John Howard from NCPIC, completed her study on the characteristics of methamphetamine users entering treatment in therapeutic communities and was awarded her PhD. Her study found beneficial impacts for clients who completed a specific group treatment intervention in a therapeutic community setting and those who have received 'treatment as usual', rather than the intervention. Her findings were presented at the 2013 Australian Psychological Society conference.

### Mandatory treatment

- Dr John Howard supervised a study by Forensic Master's student Poppy Rourke examining whether a legal mandate to enter residential AOD treatment, related factors such as perceived coercion from legal as well as other sources, and motivation impact upon treatment engagement and retention. The study found that coercion was not necessarily associated with negative treatment outcomes, including retention in treatment.

## PATTERNS OF ALCOHOL AND DRUG USE

### Opioids

- Prof Maree Teesson and colleagues completed data collection for the 11-year follow-up of the NHMRC-funded Australian Treatment Outcome Study (ATOS). Despite having no contact with participants in the intervening eight years, the 11-year follow-up rate was 70%, exceeding the previous 3-year follow-up rate. ATOS was a landmark study, examining the long-term predictors of criminality, remission, psychopathology and mortality. Although data analyses are currently underway, preliminary examination of the data indicate that three quarters of the cohort had not used heroin in the past month and



Dr Natasa Gisev



Dr Phuong Hoang



Dr John Howard



Dr Caitlin Hughes



Dr Delyse Hutchinson



Dr Sharlene Kaye



Dr Frances Kay-Lambkin



Dr Jo Kimber



Dr Briony Larence



Dr Michael Livingston

approximately half were in treatment for opiate dependence. The ATOS team will be presenting a symposium on longitudinal trajectories of heroin dependence at the annual College on Problems on Drug Dependence meeting in Puerto Rico in June, 2014.

- The landmark Pain and Opioids in Treatment (POINT) study, led by Prof Louisa Degenhardt, entered its second year. This five-year project is the first Australian study to examine the patterns of prescribing of pharmaceutical opioids for individual patients and the outcomes for these patients in the long term. Recruitment of participants commenced in August, with 1200 baseline interviews conducted by the close of 2013. Four papers have been published. Recruitment is expected to be completed by March 2014.

#### Add and substance use

- In 2013, Dr Sharlene Kaye, Prof Louisa Degenhardt and colleagues from the National Drug Research Institute (NDRI) completed the Australian arm of the International Attention Deficit Hyperactivity Disorder in Substance use disorders Prevalence (IASP) study. The IASP is a multi-site study conducted in eight European countries, Australia and the United States. The IASP aims to investigate the prevalence of ADHD among people with SUD and the relationship between ADHD symptoms and the onset and course of SUD. The IASP included a total of 3,558 participants, 489 from Australia. In 2013, four scientific papers based on the IASP findings were published in international journals - two in *Drug and Alcohol Dependence*, one in *Addiction* and one in the *International Journal of Methods in Psychiatric Research* - with several more in preparation. The findings were also presented at the 3rd International Congress on Dual Disorders. Two papers reporting the Australian findings are currently under review.
- Dr Kaye also led the Australian arm of the Continuous performance test for ADHD in SUD Patients (CASP) study. The CASP study is a multi-site international study conducted

in Australia, Hungary and the United States. The CASP aims to test the ability of a new generation of continuous performance test - the MOXO ADHD Test (Neurotech Solutions Ltd) - to compare levels of attention, hyperactivity and impulsivity between people with SUD only, people with SUD and comorbid adult ADHD, and a control group from the general population, in order to develop specific population norms for the psychometric properties of the MOXO test. It also aims to test the performance of the MOXO ADHD Test in differentiating between SUD groups with and without adult ADHD. The preliminary findings were presented at the 3rd International Congress on Dual Disorders.

#### Cannabis

- A paper from an NCPIC-funded project led by Dr Wendy Swift, in collaboration with the University of Sydney, was published in *PLOS ONE* in 2013. It revealed high tetrahydrocannabinol (THC) levels and low cannabidiol levels in Australian cannabis seizures, consistent with data internationally. These findings have potentially important implications for the mental health impacts of cannabis. This paper attracted significant media attention, and has been the subject of requests to replicate the methodology from the United States and Israel.
- The Cannabis Cohort Research Consortium (CCRC), a multi-organisational and multi-disciplinary international collaboration of researchers investigating the relationship between cannabis, other drug use, life-course outcomes and mental health in children and young adults and led by Dr Delyse Hutchinson and Dr Edmund Silins, continued in 2013.
- Dr Sally Rooke and Dr Wendy Swift found that using tobacco on its own and mixing it with cannabis may lead to worse physical health outcomes than using cannabis alone. This research was published in *Addictive Behaviors*.

#### ALCOHOL

- Prof Degenhardt is leading a longitudinal analysis of the relationship between alcohol use and mental disorders as individuals move from adolescence to young adulthood, funded by Australian Rotary Health. The first paper on the persistence of adolescent binge drinking was published in *BMJ Open* in 2013, and attracted substantial media attention. Papers in progress examine the contexts of adolescent drinking, including parental supply of alcohol, binge drinking and the adolescent predictors of alcohol use disorder symptoms in young adulthood. Dr Swift presented results at the meeting of the International Federation of Psychiatric Epidemiology in Leipzig, Germany in June, 2013.
- Prof Shane Darke completed four projects examining various aspects of morbidity and mortality among drug users. Among them was an examination of sudden or unnatural deaths involving very high alcohol concentrations that had presented to the Department of Forensic Medicine in Sydney between 2007 and 2011. Characteristics and circumstances of death were determined for 264 cases. Articles were published in *Addiction* and the *Journal of Forensic and Legal Medicine*. Prof Darke also led a project to determine the strength of association between national per capita alcohol consumption with homicide and suicide rates in Australia in the 30 years to 2009. Results show beer consumption was positively correlated with homicide rates while the relationship of alcohol consumption to suicide was narrower than that observed for homicide. An NDARC Technical Report on the work has been published.
- Prof Richard Mattick and collaborators from the NDRI and Turning Point Alcohol and Drug Centre in Melbourne continued work on the Young Australians Alcohol Reporting System (YAARS), which commenced in 2012. Three hundred and seventy-six quantitative interviews and 70 qualitative

interviews were completed across four jurisdictions (Sydney, Perth, Melbourne and Bunbury, WA). To monitor trends in risky drinking amongst young people, the study aimed to collect data on the heaviest drinking 20-25% of 16-19 year olds. The young people interviewed regularly drank at high risk levels (more than six standard drinks per occasion at least twice a month for females and 16-17-year-old males and more than 10 standard drinks per occasion at least twice a month for 18-19-year-old males). Data analysis and publication of results is underway and articles and bulletins are in preparation. These will report on high-risk drinking, alcohol-related harms, harm reduction by young people, alcohol advertising and support for policy change.

- Dr Cath Chapman, together with A/Prof Tim Slade and Zoe Tonks, conducted a large systematic review of the international epidemiology of alcohol use with a specific focus on whether the gender gap in prevalence of use and related harms is closing over time. Dr Chapman presented the results at the NDARC Annual Symposium and a publication is currently in preparation. In collaboration with Dr Wendy Swift, the team plans to expand this work in 2014 to include cannabis use and related harms.
- Dr Wendy Swift was associate investigator on an NHMRC project grant awarded in 2013 (led by Prof Richard Mattick), using integrative analyses of data from four Australasian cohort studies to investigate the relationships between alcohol and other drug use, mental health, early-life factors and life-course outcomes.

**Mental Health**

- Throughout 2013 A/Prof Tim Slade continued to lead epidemiological studies of the prevalence, correlates and natural history of mental health and substance use disorders as Director of the Epidemiology stream for the NHMRC CREMS, led by Prof Maree Teesson. Collaborators included Drs Natacha Carragher, Cath Chapman, Wendy Swift, Matt

Sunderland and Katherine Mills. Papers published in 2013 included one on the relationship between pre-existing mental disorders and the subsequent development of SUDs; the relationship between intimate interpersonal trauma and PTSD symptom endorsement; the impact of DSM-5 diagnostic criteria on the prevalence of SUDs, most recently examining cannabis use disorder; and an examination of age-related differences in the prevalence of mental disorders across the lifespan.

- Dr Natacha Carragher continued her research on the location of individual mental disorders in the meta-structure of psychopathology (published in *Social Psychiatry and Psychiatric Epidemiology*), in close collaboration with influential leaders in the field including Prof Robert Krueger (University of Minnesota) and Prof Deborah Hasin (Columbia University).

**PREVENTION AND EARLY INTERVENTION**

**Schools**

- The schools prevention research program, led by Dr Nicola Newton and Prof Maree Teesson, had another successful year with research findings published in leading

investigators Prof Maree Teesson, Prof Gavin Andrews, Dr Nicola Newton, A/Prof Tim Slade and Dr Cath Chapman. The study is the first trial of an integrated online approach for the prevention of mental health and substance use and is being conducted in NSW, QLD and WA schools in collaboration with A/Prof Leanne Hides from Queensland University of Technology (QUT) and Prof Steve Allsop and Dr Nyanda McBride from NDRI at Curtin University. Zoe Tonks and Louise Birrell were appointed as research officers on the project and have successfully recruited over 80 schools to the CSC Study.

- The NHMRC-funded Climate Schools and Prevention (CAP) study, a collaboration with Dr Patricia Conrod of University College London, moved into its third year. Katrina Champion, Natasha Nair and Erin Kelly coordinated the 12-month follow-up with over 2,000 students and an exceptional retention rate of above 80%. The team are set to conduct the 24-month follow-up surveys in early 2014.
- The Climate Schools Interactive (CSI) Study commenced in 2013, and is being led by Katrina Champion (as part of her PhD) under the supervision of Dr Nicola Newton and Prof Maree Teesson. The CSI Study

The traditional male and female **gender gap** on drinking is getting smaller

journals such as *JAMA Psychiatry* and presented at national and international conferences, including the Society for Prevention Research conference in San Francisco, US. The schools research program is one of the research streams of the NHMRC CREMS. Dr Newton was appointed head of CREMS's Prevention Stream (for more details on CREMS, see page xxx ). 2013 saw the start of the NHMRC-funded Climate Schools Combined (CSC) Study, led by chief

will evaluate whether the Climate Schools: Ecstasy and Emerging Drugs Module can address and prevent the use of ecstasy and emerging drugs among adolescents. Twelve secondary schools (with approximately 1,300 students) have been recruited to participate in the study in 2014.

- The Australian Government Department of Health continued to fund the development of an illicit drugs resource package to



Dr Sarah Larney



Dr Christina Marel



Dr Francis Matthew-Simmons



Prof. Richard Mattick



Dr Katherine Mills



Dr Nicola Newton



Dr Melissa Norberg



Dr Sally Rooke



Dr Joanne Ross



A/Prof Anthony Shakeshaft

complement the National Drugs Campaign. This included developing booklets on illicit drugs and related harms for teachers, parents and students, as well as an interactive game for students. This work was carried out by Dr Nicola Newton, Prof Maree Teesson and Daniel Rodriguez in collaboration with researchers from NDRI, and the resources will be disseminated in 2014. Dr Lexine Stapinski joined the team in November 2013 to manage the next phase of the project. This involves developing an online portal where teachers, parents and students can find up-to-date information on illicit drugs and access to evidence-based education programs.

- In 2013, Nicola Newton, Maree Teesson and Natasha Nair launched the new Climate Schools website ([www.climateschools.com.au](http://www.climateschools.com.au)). The programs are currently available to schools free of charge and over 50 schools have signed up and are actively using the programs.

### Mental health

- NDARC is involved in three centres of research excellence in mental health. CREMS commenced in 2013 and is headed by NDARC's Prof Maree Teesson. CREMS is a five-year NHMRC-funded program run in collaboration between seven Australian and international universities. Prof Teesson is also an investigator on Black Dog Institute's Centre of Research Excellence in Suicide Prevention (CRESP). Prof Louisa Degenhardt and Emily Stockings are collaborating with the Centre of Research Excellence in Mental Health Systems Improvement (CREMSI) led by Prof Harvey Whiteford at UQ. CREMSI is a five-year multi-institutional research collaboration that will design a better mental health system for Australia. Emily Stockings is continuing her work in the field of prevention of mental disorders, and has completed systematic reviews and meta-analyses for the prevention of depression and anxiety among children and adolescents.

- Dr Matthew Sunderland, with colleagues including Dr Natacha Carragher, is leading an NHMRC-funded study of age-related biases in diagnosing major depression in older Australian adults. To date two articles on differences in mental health profiles between birth cohorts have been published (*Australian and New Zealand Journal of Psychiatry* and *Journal of Affective Disorders*). Recruitment for the cognitive interviewing stage of the project and the pilot interviews have been completed. In 2014 they will finish data collection and analyse the cognitive interview data for publication.
- Dr Natacha Carragher is a chief investigator on an ANU-led project involving the development of adaptive screening tools for mental disorders. The first paper from this project was recently published in the *Journal of Affective Disorders*.

### Cohort studies

- A longitudinal study involving Prof Richard Mattick, Dr Delyse Hutchinson and Dr Lucy Burns continued to investigate the impact of parental alcohol, tobacco and other substance use on infant development and family functioning. Improved knowledge in these under-researched areas will provide evidence-based direction to the development of public health policy and community interventions. The study has recruited 1,600 participants to date with the follow-up assessments due for completion in 2014. Preliminary results on the relationship between alcohol exposure in utero and infant cognition, and the links between substance use and mental health in pregnancy and early maternal

bonding, have been presented at international conferences. A paper is currently being prepared which examines the characteristics of mothers who consume alcohol during the breastfeeding period, along with the effects of alcohol use during lactation on breastfeeding duration, and infant behavioural and developmental outcomes.

- Prof Richard Mattick, PhD student Monika Wadolowski, Alexandra Aiken and colleagues from NDARC, UQ, the University of Newcastle, Curtin University and the University of Tasmania progressed with their investigation into the impact of parental supply of alcohol on drinking trajectories in Australian adolescents. The impact of parental supply is not well understood and may be unintentionally harmful. A cohort of almost 2,000 families has been followed up over three years to date, with strong response rates and high rates of retention. Baseline and first follow-up findings have been presented at several academic events and longitudinal analyses are ongoing, with several manuscripts in preparation. Findings from the study were presented at the 14th International Congress of Psychiatric Epidemiology 2013 in Leipzig. Monika is due to submit her PhD thesis on the project in early 2014.
- Dr Edmund Silins and colleagues continued their work on the CCRC, a novel study which integrates data from several large and long-running Australasian cohorts. The study is investigating the young adult sequelae of adolescent cannabis use. Dr Silins contributed to the development of a protocol for data integration and the establishment

The impact of  
parental alcohol **supply**  
is not well understood and  
may be potentially harmful

of an integrated cohort. He was awarded a National Institute on Drug Abuse (NIDA, United States) travel scholarship to present the findings at the NIDA International Forum and the College on Problems on Drug Dependence annual meeting in San Diego. Findings have been prepared for publication. The team was awarded an NHMRC grant to extend the study to examine the impact of binge drinking in adolescence and this research will commence in 2014.

### Community-based interventions

- Alice Knight has commenced a body of research that is partnering with a community-based program aimed at reducing harms among young people at very high risk of dropping out of school and other formal training programs and being sentenced to juvenile detention. Although not Indigenous specific, Indigenous young people are over-represented in this high-risk population. A unique aspect of this research is that it is evaluating the costs and benefits of a community-based program to which NDARC researchers were invited to contribute. Along with other projects supervised by A/Prof Anthony Shakeshaft, it is a clear reflection of NDARC's increasing ability to respond directly to community-based concerns, as well as those of government, policymakers and treatment services.
- Another evaluation of a community-based intervention, led by Alice Munro and A/Prof Anthony Shakeshaft, also focuses on developing a partnership between researchers and communities in NSW. Two communities, Bourke and Brewarrina, have implemented a range of strategies aimed at reducing drug and alcohol harms in their communities as part of their 'breaking the cycle' initiative. They invited researchers to partner with them to evaluate the process, costs and outcomes of those initiatives. Although their responses are not Indigenous specific, drug and alcohol harms impose a disproportionately high burden of harm on Aboriginal Australians in these communities,

and so the development and implementation of the majority of the strategies have been led by Aboriginal members of these communities. It is an exciting partnership between grassroots community-led programs and NDARC researchers.

### Indigenous interventions

- In addition to ongoing research in 2013 aimed at reducing the burden of drug and alcohol harm on Indigenous Australians, new Indigenous programs, auspiced at NDARC by A/Prof Anthony Shakeshaft, were funded to commence in 2013. One of those, led by Mieke Snijder, Chiara Stone and Bianca Calabria, aims to evaluate a community-led intervention to reduce rates of Indigenous alcohol injury and violence in four communities in rural NSW. The second, led by Prof Alan Clough at James Cook

suggests heavy drinkers both make more errors, and are less aware of them, than non-binge-drinking controls.

- Together with colleagues from NDARC and Monash University, Dr Smith has overseen a meta-analysis of deficits in behavioural control across 10 classes of substances and addiction-like pathologies. The largest deficits were observed for stimulants, smaller deficits for alcohol dependence and heavy drinkers, and no inhibitory deficits for cannabis and opioid users. The paper has been submitted for publication.

### Cannabis:

- Dr John Howard leads the Cannabis Yarns project, which gathers stories of how cannabis and its use have emerged in Aboriginal communities, its impacts and

University students  
who drink heavily have  
**poorer memory**  
and reduced behaviour control

University, will evaluate the impact of alcohol management plans on Indigenous communities in Far North Queensland. More detail will be available on these projects in the coming years.

### Neuroscience

- Dr Janette Smith is nearing completion of several studies extending NDARC's research in neuroscience. One study examines cognitive deficits associated with heavy drinking and cannabis use in young adult university students. Results suggest poorer memory in heavy drinkers, and poorer behavioural control in both heavy drinkers and cannabis users relative to non-using controls. Preliminary results have been published as well as presented at several conferences. Building on the above study, further work, also nearing completion,

community responses in Broome, Kununurra, Yirrkala, Katherine, Alice Springs, Darwin, Kempsey and Macquarie Fields. Participants in the workshops included elders, youth, health and other service workers, and community members. The project is engaged with specific Aboriginal services - health, alcohol and other drugs, youth, community and education. Two short videos are in production on stories from the Top End (based in Katherine) and a peri-metropolitan area (based in Macquarie Fields). These videos aim to provoke discussion of cannabis, its use and related difficulties and potential positive responses among communities, and students in relevant tertiary and further education (TAFE) and tertiary courses.



Dr Marian Shanahan



Dr Edmund Silins



A/Prof Tim Slade



Dr Janette Smith



Emily Stockings



Dr Matthew Sunderland

## Alcohol:

- Drs Lucy Burns and John Howard are chief investigators on a 2014 Goldstar Award for a project on reducing alcohol-related harms in older Australians through personalised feedback. They have also submitted this grant to BUPA for consideration and will re-submit their application to the NHMRC in 2014.



Dr Wendy Swift

## DRUG POLICY

### Criminal justice

- It has been long recognised that illicit drug traffickers can and do trade in multiple drugs, yet research and policy tends to focus on single illicit drug markets alone. In 2013 Dr Caitlin Hughes, Dr Jenny Chalmers, Dr David Bright and Dr Michael McFadden commenced a National Drug Law Enforcement Research Fund (NDLERF) project to provide the first systematic examination of the extent and nature of poly-drug and poly-crime trafficking in Australia. Throughout 2013 they constructed detailed network maps of three Australian multi-commodity drug trafficking networks. This has provided insight into how product diversification is managed and strategic benefits (and costs) from trafficking in multiple as opposed to single drugs. This project will be completed in September 2014.
- In 2013 Dr Caitlin Hughes, Prof Alison Ritter and Nicholas Cowdery completed work for the Criminology Research Grants program examining the design of Australian drug trafficking thresholds - legislative tools which specify a quantity of drugs over which it is presumed an offender has committed an offence of 'trafficking' rather than 'possession for personal use'. Evidence on drug user patterns of consumption and purchasing was used to evaluate the ability of the thresholds in six different states to successfully differentiate drug users from drug traffickers. Dr Hughes and colleagues showed that in several cases thresholds were too low, as users consumed or purchased more



Dr Judy Wilson



Fenglian Xu

than the trafficable quantity for their personal use alone. Two reports were submitted (released in early 2014) and policy recommendations put forward, including firstly to increase the trafficable threshold quantities for ecstasy in all Australian states and secondly to revise on a more wholesale level the trafficable threshold quantities in NSW and South Australia. A new grant was then obtained with the Centre for Research Excellence into Injecting Drug Use (CREIDU) to conduct focus groups with people who inject drugs in NSW and South Australia. This will explore perceptions of the benefits, costs and impacts of current thresholds, and the anticipated effects (if any) of increasing the threshold quantities.

- Timothy McSweeney (with supervisors Dr Caitlin Hughes, Prof Alison Ritter and Paul Turnbull) completed his PhD *Promoting compliance, 'recovery' and 'desistance': Comparative case studies of pre-sentence diversion schemes for drug misusing arrestees in Australia and England*. He used data linkage of eight administrative datasets, matched samples of non-diverted offenders, and qualitative interviews with stakeholders and offenders to evaluate the extent to which the NSW Court diversion program, Magistrates Early Referral Into Treatment (MERIT), and a comparison program from the United Kingdom known as Tough Choices, reduced drug use and drug-related crime amongst diverted clients. This revealed that both programs faced challenges in delivering these goals, due to factors linked to policy, implementation and program delivery.
- Dr Marian Shanahan, Dr Caitlin Hughes and Timothy McSweeney

obtained funding at the end of 2013 for a new NDLERF project examining the effectiveness and cost-effectiveness of Australian cannabis diversion programs.

- Prof Shane Darke and Michelle Tye published their findings on the attitudes of regular injecting drug users towards the legal status of the major illicit drugs in *Drug and Alcohol Review*. Methamphetamine was rated the most harmful of the five illicit substances and cannabis the lowest. Cannabis attracted by far the highest level of support for legislative change, 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.

### Treatment

- A review of AOD Treatment Services being conducted by the Drug Policy Modelling Program (DPMP) at NDARC has involved interviews with around 300 sector representatives in eight states and territories since it began in July 2013. The reviewers estimate that around 2,000 individuals undergo 1.6 million AOD treatment episodes each year, and that Australia spends around \$1.1 billion a year on AOD treatments. The review is mapping funding systems among non-government, government, and mixed government and non-government service providers, including public hospital services, medical practitioner services, pharmacy services, government AOD services and NGO services. It is identifying hard-to-count treatment

Australian spends  
**\$1.1 billion** a year  
 on alcohol and other drug treatments

services, examining pay-for-performance (P4P) systems introduced in the UK and the US, and investigating accessibility issues in rural and regional Australia.

## Opioids

- Profs Degenhardt and Mattick and Dr Briony Larance completed the 2013 round of data collection for their project on the extent of diversion and injection of the pharmaceutical opioids used in opioid substitution treatment, and the harms associated with this diversion. A technical report summarising the main trends from 2012 was published, and a paper accepted for publication in *Drug and Alcohol Dependence*. Four further papers are under review or in progress.

## ALCOHOL

- Dr Natacha Carragher, A/Prof Anthony Shakeshaft and others collaborated on the development and testing of an evidence-based scale for assessing national alcohol control policies aimed at reducing alcohol consumption and related harms. This scale is labelled the *Toolkit for Evaluating Alcohol policy Stringency and Enforcement-16 (TEASE-16)* and a paper summarising the findings is currently under review. Dr Carragher also collaborated with Dr Jenny Chalmers and others on a paper clarifying perceived impediments to the implementation of minimum pricing (published in *International Journal of Drug Policy*) and with Prof Martin Hagger and a team at Curtin University as chief investigator on a Healthway-funded grant investigating the Australian public's attitudes and beliefs about minimum pricing.
- With clear evidence that harmful alcohol consumption will be muted by increasing the price of alcohol, the Australian government asked the Australian National Preventative Health Agency to examine the public interest case for raising the price of the cheapest alcohol. In 2012, Scotland legislated alcohol minimum unit pricing - a lowest price per unit of alcohol - the introduction of which is pending legal challenge. In the UK, minimum unit pricing is the subject of substantial political and policy debate. A project led by Dr Jenny Chalmers, examining how pricing policies influence young adults' choices on a night out, contributed to the debate by investigating three potential

impediments to the introduction of minimum pricing in Australia. In this debate, public opinion has centred on concerns that while it may moderate harmful drinking behaviours, minimum pricing will unfairly penalise moderate drinkers, especially those on a low income. The Australian alcohol industry - although diverse, and comprising many actors at different stages of the alcohol supply chain - has universally opposed minimum pricing. A third potential constraint is that legislative change is required to introduce minimum pricing, change which may be subject to legal challenge under domestic and international law.

## COCAINE

- DPMP continued monitoring the purported recent expansion in the Australian cocaine market through an examination of the health implications. Dr Jenny Chalmers, Dr Caitlin Hughes and Dr Francis Matthew-Simmons analysed five repeated cross-sections of population-representative National Drug Strategy Household Survey (NDSHS) data. They found that whereas recent levels of cocaine supply do not appear to have matched levels seen in the early 2000s (around the time of the heroin shortage), past year prevalence of use in the general population in 2010 exceeded them. This suggests there were more recent (past year) users of cocaine in the general population in 2010; however, they used cocaine less frequently than was the case around the time of the heroin shortage. It appears that the influx of new cocaine users has not resulted in an increase in harmful consumption (e.g. injecting). This suggests that the public health implications of this increase in cocaine use are likely to be negligible, at least in the short term. In an era when drug epidemics are notorious for transposing into harm, this is a notable and welcome finding.

# SPECIALIST PROGRAMS

## Drug Trends Program

### Dr Lucy Burns

Manager

NDARC's Drug Trends Unit reports on current and changing trends in the use of illicit drugs in Australia. Data for the program come from four main sources: interviews with people who use drugs; key stakeholders who are knowledgeable about current drug use patterns (e.g. law enforcement and health professionals); indicator data such as statistics on drug related deaths and injuries; and information arising from new technologies such as the internet. The work is funded by the Drug Strategy Branch of the Australian Government Department of Health. Led by Dr Lucy Burns, the program of work is a collaborative venture with partners including academics, policy experts and consumer groups. This cooperative framework ensures the work undertaken by the Unit is both cutting edge and policy relevant.

It has been a busy and exciting year for the Unit with increasing interest in our work leading to key presentations to audiences including experts from health, law enforcement and consumer groups. Our media profile has continued to be high, particularly with respect to the emergence of new psychoactive substances (NPS). As experts in this area, we were invited to present key findings on NPS at the 3<sup>rd</sup> International Forum on new drugs at the European Centre for Drugs and Drug Addiction (EMCDDA) in Lisbon. Our novel work on drugs and the internet has resulted in invitations to write on the topic and several peer-reviewed publications outlining the nature of drug marketplaces on the internet. In particular, we have been able to demonstrate the dynamic nature of these drug marketplaces and the impact of changing legislation on internet retailers.

We have increased our efforts to ensure widespread dissemination of findings and as a result took our Annual Drug Trends conference out of Sydney to Melbourne for the first time. Our international speaker for the conference was Paul Griffiths, Scientific Director of the EMCDDA, who spoke on changing drug trends in Europe and some of the similarities to Australia. It was a great day and this was reflected in very positive feedback and many media requests and interviews.

As always, we are grateful to the people and organisations whose support ensures our work truly reflects the nature of drug use in Australian society.



## National Cannabis Prevention and Information Centre (NCPIC)

### Professor Jan Copeland, Director

This year has been another successful one for the National Cannabis Prevention and Information Centre (NCPIC). The second review of our resources was conducted this year and is a handy list of our hard and soft copy resources, from promotional materials to training packages for various sectors, bulletins, research briefs, technical reports, clinical guidelines, clinical tools and materials and our ever-popular factsheets. This review indicated that we distribute around half a million hard copies of our resources each year and an additional 90,000 promotional items. Analyses of our targeting, reach, and satisfaction were also very positive.

The NCPIC website is the public face of the Centre and is preparing for a major refresh in 2014. It receives around 125,000 unique views per quarter, and continues to grow in reach and engagement. More than one in five visits are from the USA or UK. In order to increase traffic to the NCPIC website, we have focused in 2013 on our social media presence, particularly Facebook. We have also expanded our YouTube channel presence with an additional 22 videos, including *Clearing the Smoke*, *Mates Help Mates* and the *MakingtheLink* videos, as well as several of our past and current short film competition winners. Our new web and smartphone brief interventions and applications are currently in testing, while our six-session Reduce Your Use intervention has on average a new sign up every day and is being further evaluated.

This year has been a bumper year for babies with Carly Harris, Morag Millington and Clare Le taking maternity leave. Drs Melissa Norberg and David Allsop left us in 2013 to take up opportunities at other universities and we thank them for their contribution to the Centre. We were also pleased to welcome Matt Tooth in a communications role and Lisa Webb as a project manager for our smartphone and related evaluations. Madeleine Randell also joined our workforce development team, which continues to provide national coverage in the dissemination of evidence-based interventions.

We are always looking to further extend our many successful collaborations, and our focus recently has been to increase our dissemination of information on cannabis and respiratory health. Working with Prof Adam Jaffe, a senior respiratory physician at UNSW, we have developed community and professional resources with Asthma Australia and the Lung Foundation Australia and look forward to updating position papers and providing conference presentations to the sector.

The Ted Noffs Foundation resigned from the consortium this year; we thank them for their contribution and wish them well with their future endeavours. I'd like to acknowledge all consortium partners and our staff for the wonderful contribution they have made during 2013. Overall, the Centre continues to demonstrate the power of a genuine consortium to deliver a model of research, community and workforce education and training, and service delivery.



## Drug Policy Modelling Program

**Professor Alison Ritter,**  
Director DPMP

In 2013, the Drug Policy Modelling Program (DPMP) concluded its funding from the Colonial Foundation Trust. For the last seven years, Colonial Foundation Trust has provided DPMP with core funds enabling us to conduct drug policy research and providing infrastructure support for the program. One of the objectives of the Colonial Foundation grant was to create a sustainable drug policy research program in Australia. This year has seen the culmination of that success, with the DPMP now firmly embedded as a drug policy research program, internationally recognised and funded from a variety of sources. We are exceptionally grateful to Colonial for their vision and extensive financial support.

In relation to alcohol policy, we have continued work to improve understanding of the stable population levels of alcohol consumption but increasing harms from alcohol consumption (Dr Michael Livingston), and reviewed the evidence for minimum pricing of alcohol (Dr Jenny Chalmers).

In relation to laws and drug policy, we have continued work evaluating the current Australian laws specifying the drug amounts for distinguishing use/possession from trafficking (Dr Caitlin Hughes). Research examining pre-sentence diversion schemes, has been completed this year (Tim McSweeney).

Any endeavour to inform and influence drug policy requires a comprehensive understanding of current policies, investment mix, trends in policymaking and relevant history. DPMP work in 2013 has included updating the Australian illicit drug policy timeline (Dr Caitlin Hughes), analysis of public opinion on drug policy (Kari Lancaster), and examination of the ways in which drugs are constructed and represented as a policy problem (Kari Lancaster, Prof Alison Ritter).

Drug and alcohol treatment policy has been a particular focus for 2013, with work proceeding on the review of Commonwealth funding for AOD treatment (Prof Alison Ritter, Dr Jenny Chalmers, Dr Lynda Berends, Phil Hull and Maria Gomez). A study of Vietnam's compulsory treatment centres is underway (Thu Vuong). A model to assess the costs and benefits of heroin treatment over the course of a lifetime is progressing well (Dr Phuong van Hoang, Dr Marian Shanahan). We have also completed several treatment-related consultancies for state governments - providing expert, independent and non-partisan analysis of the issues.

In 2013 we published numerous academic papers, a comprehensive textbook *Drug Use in Australian Society* (OUP: Ritter, King & Hamilton) and a DPMP Monograph on government spending on drugs (Ritter, McLeod & Shanahan) that demonstrates the significant government investment in law enforcement.

Throughout the year, we have sought to inform and influence Australian decision-makers through the dissemination of our research findings in academic and policy circles, presentations to government, submissions to government inquiries, private briefings to ministers and their staff, and through consultancy research.



## NHMRC Centre of Research Excellence in Mental Health And Substance Use

**Professor Maree Teesson,**  
Director and Chief Investigator

Comorbidity between mental and substance use disorders is pervasive and presents a significant clinical challenge. Almost one-half (45%) of adult Australians experience a mental or substance use disorder during their lifetime, and 25% of these cases are comorbid. Once comorbid disorders are established, they serve to maintain and exacerbate each other leading to a chronic course of illness. Of particular concern are young Australians (aged 15-24 years), for whom the top 10 causes of burden of disease are dominated by mental and substance use disorders.

Funded in 2012 by the Australian National Health and Medical Research Council, the Centre of Research Excellence (CRE) in Mental Health and Substance Use aims to build much needed research capacity in the area of comorbidity. Led by Professor Maree Teesson, the CRE represents a world first, bringing together the largest concentration of nationally and internationally recognised comorbidity researchers. Specifically, the CRE brings together leading research academics, including Professor Amanda Baker (University of Newcastle), Professor Paul Haber (University of Sydney), A/Professor Andrew Baillie (Macquarie University), Professor Max Birchwood (University of Birmingham, UK), Professor Bonnie Spring (Northwestern University Medical School, USA), and Professor Kathleen Brady (Medical University of South Carolina, USA).

The CRE aims to generate innovative new research to increase the knowledge base regarding the effective prevention and treatment of mental health, substance use and their comorbidity. These aims will be achieved via three research streams focusing on prevention (led by Dr Nicola Newton), treatment (led by Dr Katherine Mills), and epidemiology (led by A/Professor Tim Slade), and a translation stream (led by Dr Kay-Lambkin). A number of studies across each of these areas are currently underway. In addition, CRE investigators were awarded more than \$6 million in funding from NHMRC for new projects to commence in 2013. A list of these projects can be found on the CRE's website and in our newsletter.

The translation of our research findings into practice is a priority of the CRE. In addition to making the findings of our research available in the scientific literature, an integral component of this CRE is the translation of these research findings into educational curricula, training programs and clinical resources, as well as resources for the general public.



# 2013 STAFF

## PROFESSIONAL AND TECHNICAL STAFF - RESEARCH



## PROFESSIONAL AND TECHNICAL STAFF - RESEARCH (CONTINUED)



Kimberley Smith

Jenny Stafford

Chiara Stone

Zoe Tonks

Rachel Urquhart

Joe Van Buskirk



Joanne White

Not pictured: Evelyn Lee, Rachel Sutherland, Scarlet Wilcock

## PROFESSIONAL AND TECHNICAL STAFF - ADMINISTRATION



Tori Barnes

Jasmin Bartlett

Chris Coombes

Crisanta Corpus

Paul Dillon

Marion Downey

Jackie Du

Colleen Faes

Carly Harris

Karen Hill

Julie Hodge

Mary Kumvaj

Clare Le (Chenoweth)

Mauricia Lopes

Ety Matalon

Jelynn Millare

Morag Millington

Gemma Nevin

Erin O'Loughlin

John Redmond

Jemma Sale

Carla Santos

Matthew Tooth

## DOCTORAL CANDIDATES



Zahra Alam Mehrjerdi



Lucy Albertella



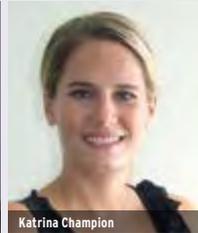
Dam Anh Tran



Ansari Bin Jainullabudeen



Bianca Calabria



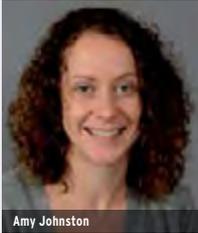
Katrina Champion



Mark Deady



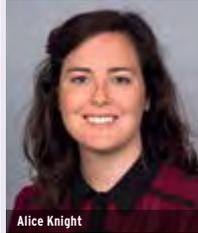
Bianca Hoban



Amy Johnston



Erin Kelly



Alice Knight



Kari Lancaster



Lynne Magor Blatch



Anika Martin



Clare McCormack



Timothy McSweeney



Sonja Memedovic



Paul Nelson



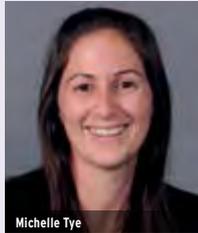
Larissa Rossen



Amanda Roxburgh



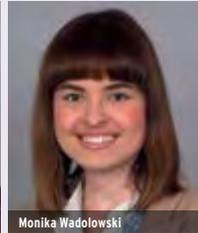
Melanie Simpson



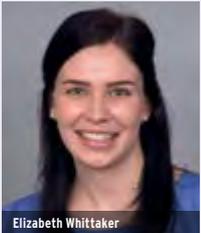
Michelle Tye



Thu Vuong



Monika Wadolowski



Elizabeth Whittaker



Kathryn Woodcock

Not pictured: Mieke Snijder

## CONJOINT STAFF



Amanda Baker



Raimondo Bruno



Katherine Conigrave



Johan Duffou



Matthew Dunn



Paul Haber



Wayne Hall



Alys Havard



Trevor King



Andrea Mant



Mark Montebello



Catherine Spooner



Ingrid Van Beek



Deborah Zador

Not pictured: Elizabeth Moore

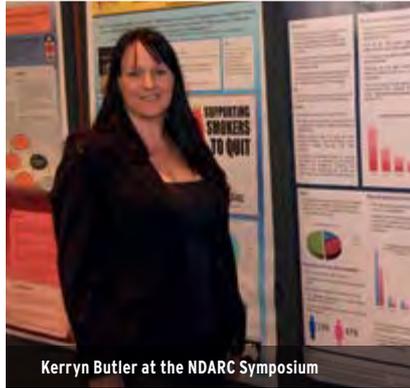
# EVENTS, MEDIA AND COMMUNITY

## CENTRE OF RESEARCH EXCELLENCE LAUNCH

The NHMRC Centre of Research Excellence in Mental Health and Substance Use (CREMS) was officially launched in January by Federal Minister for Health Tanya Plibersek and Federal Minister for Mental Health Mark Butler. CREMS is headed by Prof Maree Teesson and is a collaboration of four Australian universities (UNSW, University of Newcastle, University of Sydney, Macquarie University) and three international universities (University of Birmingham in the UK and Northwestern University Medical School and the Medical University of South Carolina in the US). CREMS aims to break down the silos between mental health and substance use treatment in recognition of the fact that comorbidity is common. It will create significant new research on the prevention, treatment and epidemiology of this complex comorbidity with a strong focus on the translation of research findings. The launch was held in conjunction with the Black Dog Institute's NHMRC Centre of Research Excellence in Suicide Prevention.



CRE chief investigators with Ministers Mark Butler and Tanya Plibersek



Kerryn Butler at the NDARC Symposium



Prof Copeland at the NDARC Symposium



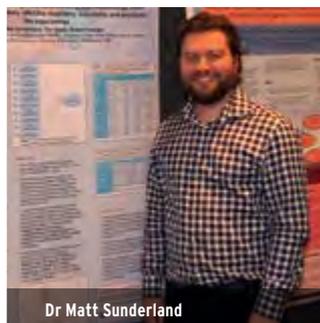
NDARC Symposium



Staff at the 2013 NDARC Symposium



Prof Darke and Erin Kelly



Dr Matt Sunderland

## CONFERENCES & SYMPOSIA

NDARC held another highly successful Annual Symposium at the University of New South Wales (UNSW) on 4 September. The full day Symposium featured presentations and posters from a cross section of staff and projects and is an important event in the NDARC calendar for disseminating and translating our findings to a clinical and policy audience. This year's topics included parental influence on teen drinking; results of the landmark Sativex trial; long term consequences of early onset cannabis use; and fetal alcohol exposure and infant development. Prof Don Weatherburn of the Bureau of Crime Statistics and Research convened a successful and entertaining interactive panel session on drug related crime and drug markets. Dr Michael Livingston's presentation on the phenomena of "super binge drinkers" attracted a lot of media attention as did A/Prof Tim Slade and Dr Cath Chapman's work looking at the closing of the gender gap in cannabis and alcohol use.

The Drug Policy Modelling Program (DPMP) held its Annual Research Symposium on 20 June at the National Portrait Gallery in Canberra. DPMP director Prof Alison Ritter launched the *Government Drug Policy Expenditure in Australia 2009/10* report which was well covered by national TV and radio news outlets. Key findings of the report were that spending on harm reduction had fallen and that treatment spending had remained steady despite unmet demand. Another highlight of the day was a panel on national overdose prevention and response strategy with Prof Margaret Hamilton, Prof Simon Lenton, Amanda Roxburgh and Nicole Wiggins.

The Drug Trends unit headed by Dr Lucy Burns held its annual conference at the State Library of Victoria on 15 October. Highlights included a presentation from Paul Griffiths, chief scientist of the European Monitoring Centre for Drugs and Drug Addiction, who spoke of the challenges posed by the explosion in availability of new psychoactive substances. The number of new drugs identified in Europe – 251 by mid-2012 – had for the first time exceeded the number of substances under international control. Dr Chris Wilkins from New Zealand spoke about the country's ground breaking new psychoactive substances regulations.

## INTERNATIONAL GUESTS

NDARC was fortunate to host many international guests throughout the year. Among them was Prof Carl Lejuez, founder and director of the Center for Addictions, Personality and Emotion Research at the University of Maryland, who visited the Centre to conduct Behavioural Activation Therapy training with NDARC staff undertaking the 'Activate' study. Dr Adam Winstock of Kings College London and Ross Bell of the New Zealand Drug Foundation presented guest lectures on their region's experiences of, and response to, new psychoactive substances. NDARC also hosted a delegation from the Chinese Ministry of Public Security, who met with senior academics and had a tour of the Centre.



Delegates from the Chinese Ministry of Public Security with NDARC staff

## MEDIA & ONLINE COMMUNITY

NDARC staff and their research received wide media coverage in 2013 in outlets as diverse as Agence France-Presse newswire, *The Economist*, *The Conversation*, *The Guardian* and *The Age* - to name but a few. Many stories were generated from the Centre's 16 media releases while others drew on NDARC's expert commentary on 'hot topics' such as prescription drug abuse, the harms of emerging psychoactives, and alcohol misuse.

Online, NDARC's website attracted over 180,000 visits in 2013, with highly accessed resources including Drug Trends reports, the Comorbidity Guidelines, fact sheets, worker resources and the Drug Policy Timeline. Communications staff continued to utilise NDARC's Facebook and Twitter accounts to disseminate research and media stories, build relationships with stakeholders, and recruit for new projects.



Dr Carl Lejuez and the Activate project team

## AWARDS & PROMOTIONS

The accomplishments of six NDARC staff were recognised at the 2013 UNSW Medicine Dean's Awards in November. Prof Maree Teesson received the Dean's Award for Outstanding Achievement, the highest award bestowed by the faculty. Dr Ryan Courtney and Dr Sarah Larney were recipients of the Dean's Rising Star award in recognition of their achievements as Early Career Researchers. Doctoral candidates Mark Deady and Michelle Tye earned the Dean's List award, and Operations Manager Karen Hill was recipient of a Dean's Award for Professional and Technical Staff.

Within the Centre, the achievements of staff across all levels were recognised once again with the annual NDARC Awards. A/Prof Tim Slade, Dr Christina Marel and Bianca Calabria were winners in 2013 for their outstanding research and community impact.

Throughout the year Anthony Shakeshaft successfully applied for a promotion to Professor and Katherine Mills and Lucy Burns for a promotion to Associate Professor. The new titles take effect in 2014.



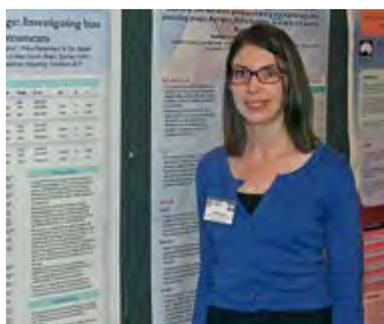
Dean's Awards winners Dr Courtney, Prof Teesson, Mark Deady & Michelle Tye



NDARC Awards winners Dr Marel & A/Prof Slade



Nicholas Cowdery & Dr Hughes at the DPMP Symposium



Dr Buchan at the NDARC Symposium

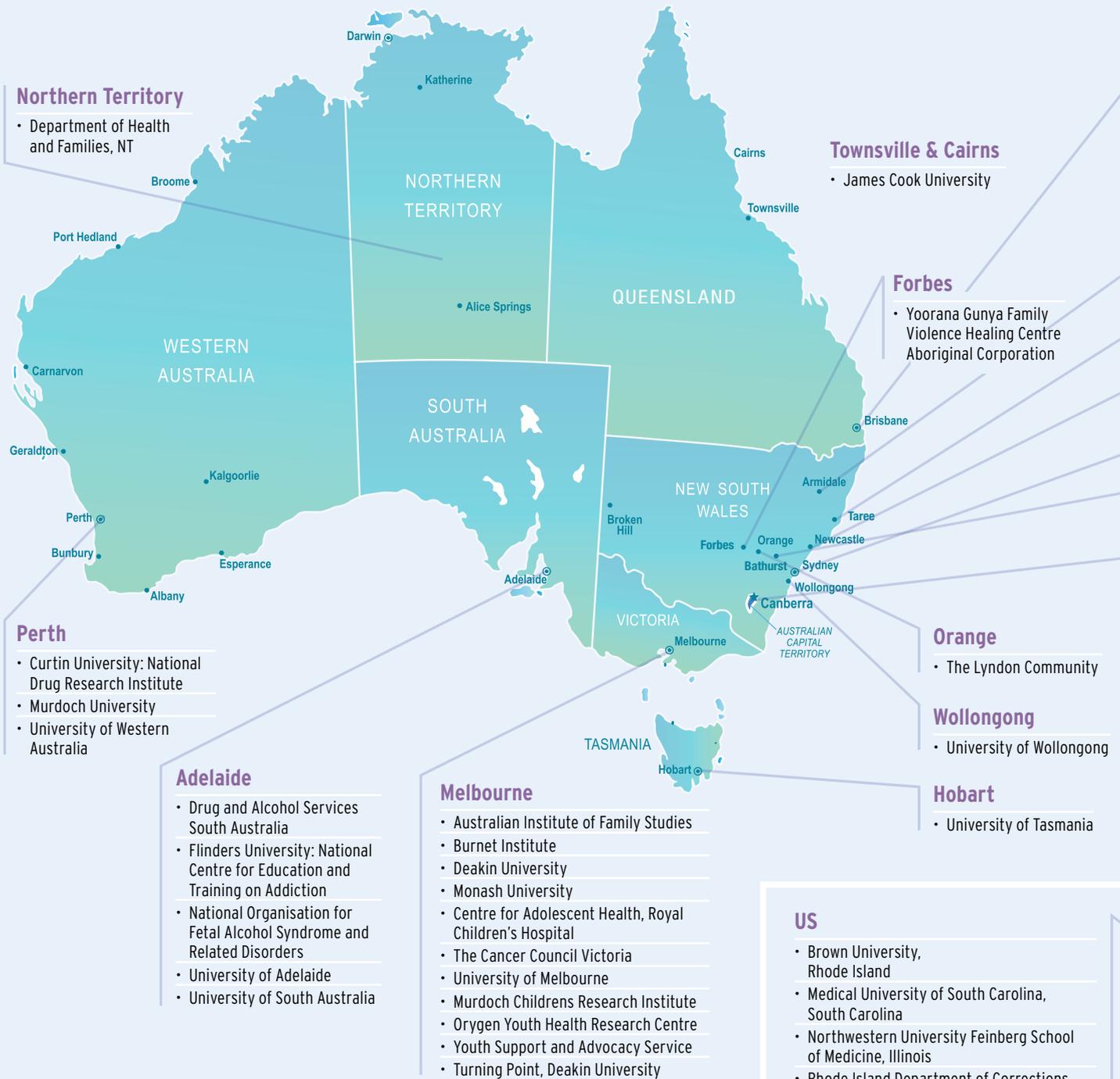


Prof Farrell & Roche at the NDARC Symposium



Prof Darke & Alexandra Aiken at the NDARC Symposium

# NDARC COLLABORATORS



## INTERNATIONAL CRIMINAL JUSTICE PROJECTS

In 2013 NDARC researchers' interest in the experiences and profile of those in the world's various criminal justice systems led to collaborations with Brown University in the United States, the United Nations Office on Drugs and Crime office in Austria, and the Tehran University of Medical Sciences in Iran.



**Brisbane**

- Australian Pain Management Association
- Griffith University
- Queensland University of Technology  
The Professor Tess Cramond Multidisciplinary Pain Centre, Royal Brisbane and Women's Hospital
- University of Queensland:  
Centre for Clinical Research  
Queensland Brain Institute  
Queensland Alcohol and Drug Research and Education Centre  
Queensland Centre for Mental Health Research

**Armidale**

- University of New England

**Taree**

- Albert Street Medical Centre

**Newcastle**

- Hunter Medical Research Institute
- Hunter Institute of Mental Health
- NSW Health: Drug and Alcohol Clinical Services, Hunter New England Area Health District
- University of Newcastle

**Bathurst**

- Charles Sturt University

**Canberra**

- ACT Health Directorate
- Alcohol and other Drugs Council of Australia
- Australian Institute of Criminology
- Australian Institute of Health and Welfare
- Australian National Council on Drugs
- Lifeline
- National Drug Law Enforcement Research Fund
- Social Research and Evaluation
- Alcohol Tobacco and Other Drug Association ACT
- Australian Injecting & Illicit Drug Users League
- Australian National University
- Foundation for Alcohol Research and Education
- National Health and Medical Research Council

**PARTNERS ACROSS THE PACIFIC**

NDARC has numerous collaborators in the United States, where much of the volume of the world's drug & alcohol research output originates. NDARC's Centre of Research Excellence in Mental Health and Substance Use includes chief investigators from Northwestern University Medical School and the Medical University of South Carolina, while the Global Burden Disease project is based at the University of Washington.



**Sydney**

- Drug and Alcohol Multicultural Education Centre
- Mission Australia
- Network of Alcohol & Other Drugs Agencies
- NSW Police
- Odyssey House
- We Help Ourselves
- Avenue Road Medical Practice, Sydney
- Macquarie University, Sydney
- NSW Bureau of Crime Statistics and Research, Sydney
- NSW Health:  
St Vincent's Hospital alcohol & drug service, St Vincent's Health Network  
Department of Forensic Medicine, Sydney Local Health District  
Drug and Alcohol Clinical Services, Northern Sydney Area Health District  
Justice Health  
Royal Prince Alfred Hospital, Sydney Local Health District  
South Western Sydney Local Health District  
St Vincent's Hospital pain clinic, St Vincent's Health Network

- The Langton Centre, South Eastern Sydney Local Health District
- Traumatic Stress Clinic, Westmead Hospital, Western Sydney Local Health District
- Pain Australia
- Pharmacy Guild of Australia (NSW branch)
- The Australian Paediatric Surveillance Unit, The Children's Hospital at Westmead/University of Sydney
- University of New South Wales:  
Faculty of Law;  
Faculty of Medicine - Kirby Institute, School of Public Health and Community Medicine, The Blackdog Institute;  
Faculty of Science - School of Psychology;  
School of Mathematics and Statistics
- University of Sydney
- University of Technology, Sydney:  
Centre for Health Economics and Research Evaluation
- University of Western Sydney
- CRUFAD

**Canada**

- University of Montreal, Quebec

**UK**

- University of Bristol, England
- London School of Hygiene and Tropical Medicine, England
- King's College London, England
- Queens University Belfast, Northern Ireland
- University of Birmingham, England
- University College London, England
- University of Dundee, Scotland
- Institute for Criminal Policy Research, University of London, England

**Asia**

- Yunnan Institute for Drug Abuse, Kunming
- Youth Vision, Bhaktapur
- fhi 360, Hanoi
- Hanoi Medical School, Hanoi
- WHO Western Pacific, Manilla
- UNODC Southeast Asia & the Pacific, Bangkok

**New Zealand**

- University of Otago, Dunedin

**Europe**

- United Nations Office of Drugs and Crime, Vienna
- Trimbos Instiuit, Utrecht
- World Health Organization, Geneva
- UNAIDS, Geneva

**Middle East**

- Persepolis NGO, Tehran Province, Iran
- Tehran University of Medical Sciences, Tehran Province



# NCPIC COMMUNICATIONS

In 2013, the National Cannabis Prevention and Information Centre (NCPIC) communications team undertook a wide range of activities as part of the Centre's efforts to prevent and reduce the use of cannabis in Australia.

## DID YOU HEAR US ON THE RADIO?

NCPIC worked with MediaHeads to develop two, 30-second Public Information Messages (PIMs), one to encourage those experiencing cannabis-related problems to contact the Cannabis Information and Helpline, and the other about cannabis and driving. The PIMs featured popular V8 Supercars driver Craig Lowndes and were broadcast across 10 radio networks nationally, resulting in an increase in calls to our free helpline number.

## DANGER: STONED DRIVER ON BOARD

NCPIC's ongoing work on cannabis and driving was furthered with the release of 'Danger: Stoned driver on board. It's more obvious that you think'. Five thousand posters were printed and disseminated across all jurisdictions to police and road traffic authorities and an Avant Card campaign distributed 170,000 postcards to coffee shops, cinemas, TAFEs and universities, and select secondary schools. Materials can be found at [ncpic.org.au/driving](http://ncpic.org.au/driving)



Tori Barnes at the Road Safety Research, Policing and Education Conference, Brisbane.

## COMMUNITY INFORMATION DEVELOPMENT AND CANNABIS YARNS FEASIBILITY PROJECT

An important aim in 2013 was to start developing materials that address cannabis use in Aboriginal and Torres Strait Islander communities in culturally appropriate and new formats. NCPIC staff collected 'stories' or 'yarns' from community members about cannabis use and helpful responses to use of the drug, and held discussions with communities and workers to canvass ideas, potential stories and preferred method of story documentation. The communities visited were Kununurra and Broome (WA); Yirrkala/Nhulunbuy, Katherine, Darwin and Alice Springs (NT); Kempsey, Macquarie Fields, Griffith, Temora and Wagga Wagga (NSW); and Charleville, Cherbourg and Cunnamulla (QLD). Video stories will be collected in Macquarie Fields and Katherine in early 2014.



NCPIC's Dr John Howard & Karina Hickey with community members.

## POSTER, FILM AND INDIGENOUS MUSIC COMPETITION

Every year NCPIC runs a poster, film and music competition. In 2013 the poster competition challenged high school students to come up with a design about how to help a friend with a cannabis use issue. Justin B. from Induna School, NSW, won \$2000 for himself and \$1500 for his school. The 2013 film competition focused on how cannabis affects driving ability and was won by Luke Proy, who received a \$5,000 prize for his 30 second film *Driving High*. The Aboriginal and Torres Strait Islander music competition was won by a group of year nine students from Wadja Wadja High School in Woorabinda, Queensland. The winners received \$5,000 and a trip to Darwin to professionally record their winning song, *Yarndi or My Girlfriend*, with the Skinnyfish record label.

## NEW MINI-WEBSITES GO LIVE

NCPIC developed two new mini-sites in 2013 in conjunction with consortium partners. An online resource led by the National Drug Research Institute asks Aboriginal Primary Health Care workers to consider 'Could it be the gunja?' when talking about health and wellbeing with clients and patients. 'Cannabis and Consequences II' was developed by Turning Point Alcohol and Drug Centre and involved a revision of an existing cannabis education package to produce 12 classroom activities for secondary school students based on the latest cannabis evidence and research.

## NEW EASY-TO-READ RESOURCES

NCPIC produced a suite of easy-to-read, illustrated booklets and posters, titled 'Cannabis: More than just stoned'. The resources were extensively focus tested with people from culturally and linguistically diverse backgrounds and high school students with low literacy skills. A suite of booklets and posters for Indigenous clients with low literacy skills was also developed, with culturally-specific language, illustrations and topics such as 'What is gunja?', 'Gunja and the law', 'Gunja and pregnancy', and 'Gunja and your community'.



# CURRENT PROJECTS

## TREATMENT AND INTERVENTION

### A dimensional-spectrum model of mental disorders: developing new assessments to improve the diagnostic validity of multiple mental disorders

**NDARC staff:** Dr Matthew Sunderland & A/Prof Tim Slade

**Project summary:** The current program of research seeks to investigate new and emerging statistical models to develop accurate and efficient diagnostic instruments that measure the latent relationship between internalising (e.g. depression, anxiety), externalising (e.g. substance use, anti-social and conduct disorder) and thought disorders (e.g. psychosis).

**Rationale:** A growing body of empirical evidence questions the validity of categorical diagnostic instruments. Converging lines of evidence suggest that models of psychopathology that measure multiple disorders through the use of broad dimensional spectra offer a significant improvement to psychiatric research and clinical practice. This model is commonly referred to as a dimensional-spectrum model. In order to facilitate the use of dimensional models to measure the broad spectra of psychopathology, new assessment tools that measure the dimensionality of psychiatric disorders are needed. Dimensional instruments for individual disorders have been developed, but no study has examined the possibility of constructing a tool that measures the complex latent relationship between putatively distinct disorders using a dimensional-spectrum model. Advances in measurement theory, particularly multidimensional Item Response Theory (IRT), offer innovative ways to measure broad dimensional constructs. These methods can be utilised for the development of efficient and accurate diagnostic tools through the use of computerised adaptive testing.

**Aim:** To develop and test an innovative and novel approach for diagnosing psychiatric disorders in community and clinical populations using a dimensional-spectrum model as the guiding theoretical framework.

**Design & Method:** This integrated research program will be divided into a series of studies that seek to determine the feasibility, to develop, and to test a novel instrument that assesses a dimensional-spectrum model of psychopathology. The research program will develop a large item pool of symptoms of psychiatric disorders informed by the previous literature, which include: internalising disorders (e.g. depression, generalised anxiety disorder, phobic disorders, PTSD), externalising disorders (e.g. substance use disorders, conduct/antisocial disorders), and thought control disorders (e.g. schizophrenia, psychosis, mania). The study will then test and calibrate the item pool in large-scale community and clinical samples utilising a comprehensive set of latent variable techniques, notably IRT. The feasibility of various IRT models to develop the instrument will be examined. These estimated IRT parameters will then be validated in important subgroups of the population, including: gender, age, and ethnicity. The final aspect of the study will involve setting up a computerised adaptive test (CAT) to measure the underlying levels of psychopathology in a highly efficient and accurate manner. This will utilise data collected previously in a series of simulation runs that will aim to fine-tune the CAT according to various selection and stopping rules.

**Progress:** We have completed applications to acquire survey data and ethics for a pilot study that seeks to investigate the feasibility

of higher-order IRT models when efficiently measuring the latent dimensions of psychopathology.

We are collaborating with researchers from the Netherlands to investigate bi-factor models for assessing internalising disorders (mood and anxiety) in data from the Netherlands Study of Depression and Anxiety.

Several analyses of existing national survey data from Australia and the United States have demonstrated the validity of using dimensional approaches to assessing comorbidity amongst substance use and mental disorders. These results have been written up and submitted for publication.

**Benefits:** Considering some of the clinical applications, this research will provide a useful diagnostic tool that will assist in facilitating a dimensional approach to the assessment of psychiatric disorders in everyday clinical research. A dimensional approach offers the advantage of obtaining a greater amount of patient information, including the ability to measure the latent interaction between putatively distinct disorders as well as the ability to better distinguish between disorder severity levels. A dimensional approach will also provide clinicians and researchers with the ability to identify highly disordered cases that are in immediate need of treatment. Likewise, the choice of treatment will be influenced by the various severity levels and interaction between multiple disorders observed in each case, which will enable tailored treatment programs to be based on efficient and informative diagnoses.

**Output:** Presentations and posters at the 2013 Australasian Society for Psychiatric Research Conference and NDARC annual symposium.

**Funding:** National Health and Medical Research Council (NHMRC) Early Career Fellowship

**Date commenced:** January 2013

**Expected date of completion:** December 2016

### Assessing the cannabis withdrawal scale and cannabis problems questionnaire

**NDARC staff:** Prof Jan Copeland, Dr Nicole Clement, Dr David Allsop & Dr Wendy Swift

**Aims:** To assess the psychometric properties of two applied measures of cannabis problems (The Cannabis Withdrawal Scale (CWS) and the Cannabis Problems Questionnaire-Revised (CPQ-R)) so as to provide reliable and valid tools for use in clinical and research settings.

**Design & Method:** A sample of 300 cannabis users wanting to cut down/quit their cannabis use will be recruited through the participating treatment settings (Western Sydney Local Health District and Manly Drug Education and Counselling Centre) when they present for treatment for their cannabis use or related problems. Participants will then be screened and those meeting the inclusion criteria (cannabis primary drug used, no significant mental health or psychiatric comorbidity, no mental retardation, English as a first language) will be assessed on four occasions. The main research questions are:

- How valid and reliable is the CWS as a measure of cannabis withdrawal symptoms?
- How reliable and valid is the CPQ-R as a measure of cannabis related problems?

**Progress:** The project has been approved by the Western Sydney Local Health District Ethics Committee. Participant recruitment has commenced.

**Date commenced:** 2013

**Expected date of completion:** To be confirmed.

### Centre of Research Excellence in Mental Health Systems Improvement (CREMSI)

**NDARC staff:** Prof Louisa Degenhardt & Emily Stockings

**Other investigators:** Prof Harvey Whiteford (University of Queensland), Prof Jane Pirkis (University of Melbourne), Prof Cathy Mihalopoulos (Deakin University), Prof Kathy Eagar (University of Wollongong), Prof Gavin Andrews (UNSW), Prof Brian Head (University of Queensland), Prof Jane Gunn (University of Melbourne), Prof Wayne Hall (University of Queensland) & Prof George Patton (University of Melbourne)

**Collaborators:** University of Washington, United States; King's College, London United Kingdom

**Project summary:** The Centre of Research Excellence in Mental Health Systems Improvement (CREMSI) was funded in 2012 by the NHMRC and is led by the University of Queensland (UQ). The overarching goal of the CRE is to design a model mental health service system for Australia that will optimally reduce the burden of mental disorders. CREMSI also aims to provide a detailed analysis of how the model differs from the existing service system, including the identification of policy instruments and a knowledge transfer strategy that details how to move from the existing system to the model system.

The CRE will build research capacity in three key areas:

- priority setting for cost-effective mental health interventions and service platforms
- mental health system planning to maximise the delivery of evidence based services
- translation of evidence-based service system planning into policy.

CREMSI brings together leading research academics and mental health experts from five Australian universities (UQ, UNSW, University of Melbourne, Deakin University and University of Wollongong), health departments (Commonwealth, New South Wales, Queensland) and international collaborators from the University of Washington and King's College, London.

**Aims:** To design a model mental health service system for Australia that will optimally reduce the burden of mental disorders, and to provide a detailed analysis of how the model differs from the existing service system, including the identification of policy instruments and a knowledge transfer strategy that details how to move from the existing system to the model system.

**Design & Method:** The program of research comprises three research streams:

#### Stream 1: Interventions and cost-effectiveness

The interventions and cost-effectiveness research stream will describe population treatment need and assemble the cost-effective interventions and service platforms that will most efficiently reduce the burden of mental and substance use disorders across the service continuum from prevention to rehabilitation.

#### Stream 2: Service systems

The service systems research stream will design a model service delivery system, with planning targets and tools for a knowledge transfer strategy.

#### Stream 3: Evidence into policy

The evidence into policy research stream will develop methods for translating the model service system into the policy environment, specifically into identifying the policy instruments governments use and how to influence policymaking processes.

**Progress:** In Stream 1, systematic reviews, meta-analyses and synthesis for the effectiveness of interventions to prevent and treat depression and bipolar disorder have been completed, with cost-effectiveness modelling for these disorders to commence in February 2014. Stream 2 has completed a draft mental health service taxonomy and are currently assembling data on service resource allocation and utilisation.

**Output:** Two peer-reviewed papers were published by non-NDARC authors in 2013

**Funding:** UQ / NHMRC Centres of Research Excellence Shared Grant

**Date commenced:** November 2012

**Expected date of completion:** October 2017

### Computerised treatment for cannabis use in an early psychosis service

**NDARC staff:** Dr Frances Kay-Lambkin

**Other investigators:** Professor Vaughan Carr (School of Psychiatry, UNSW) & Dr Daniel Pellen (South West Sydney Local Health District)

**Project summary:** This project will recruit clients of a local Early Psychosis clinic who are currently using cannabis. Case managers will refer interested clients to the study, which will explore the effectiveness of a computer-delivered psychological treatment for cannabis use (and related problems) (the SHADE intervention).

**Aims:** To explore the effectiveness of a computer-based treatment for cannabis use problems in an early psychosis population.

**Design & Method:** Following provision of informed consent, participants will complete a baseline clinical interview and will then be randomised to active treatment (SHADE) or a wait-list control. Those allocated to SHADE will attend the Early Psychosis Service on a once weekly basis to complete their computer sessions. All other treatment will progress as usual. At 12 weeks post-baseline, all participants will complete a follow-up clinical assessment, and waitlist clients will have the opportunity to complete the SHADE 10 week program. Follow-up assessment will occur again for both groups at 24 weeks post-baseline.

**Progress:** An extension to this project was obtained in 2012. The project was ongoing in 2013.

**Benefits:** Development of a targeted psychological treatment for cannabis use in early psychosis clients for whom cannabis use is a major concern.

**Funding:** NSW Health

**Date commenced:** August 2011

**Expected date of completion:** To be confirmed.

### Continuous performance test for ADHD in SUD Patients (CASP) study

**NDARC staff:** Dr Sharlene Kaye

**Other investigators:** Adva (Peled) Levie (Neurotech Solutions Ltd, Israel), Nir Yacin (Neurotech Solutions Ltd, Israel), Itai Berger (Hadassah-Hebrew University Medical Center, Israel), Wim van den Brink (Amsterdam Institute for Addiction Research, University of Amsterdam, The Netherlands), Zsolt Demetrovics (Institute of Psychology, Eötvös Loránd University, Hungary), Csaba Barta (Department of Medical Chemistry, Molecular Biology and Pathobiochemistry, Semmelweis University, Hungary), Brian Johnson (Dept of Psychiatry, SUNY Upstate Medical University, USA), and Geurt van de Glind (Amsterdam Institute for Addiction Research, University of Amsterdam, The Netherlands; Trimbos-instituut and ICASA Foundation, The Netherlands).

**Project summary:** Attention Deficit Hyperactivity Disorder (ADHD) is a significant risk factor for the development of substance use disorders (SUD) in adolescence and adulthood, and both childhood and adult ADHD are consistently overrepresented in SUD populations. ADHD complicates the course and treatment of SUD, being associated with an earlier onset, greater severity, increased chronicity of substance use and dependence and a greater level of impairment due to other psychiatric comorbidity. Accordingly, SUDs among those with ADHD are more difficult to treat, with lower rates of treatment retention and higher rates of relapse.

Several factors can complicate the diagnosis of adult ADHD:

- heterogeneity in the nature and severity of ADHD symptoms and clinical presentations within and between affected individuals
- non-specificity of symptoms (i.e. overlap with symptoms of other disorders)
- comorbid psychiatric disorders (e.g. mood & anxiety disorders, learning disorders, ODD, CD)
- different clinical presentation in adulthood. The majority of screening and diagnostic instruments are questionnaires or rating scales answered by parents, partners or teachers, or based on self-report, with a lack of instruments that can measure specific deficits and change in symptom severity.

Continuous Performance Tests (CPTs) have been considered by many to be the most reliable means of differentiating between those with and without ADHD and have been widely used to complement structured clinical interviews and rating scales as part of the 'gold standard' for ADHD diagnosis. Existing CPTs, however, have tended to yield high rates of false positives and false negatives and they lack specificity with respect to relationship between results and specific ADHD symptoms and symptom domains (i.e. inattention, hyperactivity, impulsivity). As such, their validity and utility in the diagnosis of ADHD has been questioned. The MOXO ADHD Test is a new CPT designed to objectively assess several domains of attention. Validity studies have shown the MOXO Test to effectively differentiate between children with and without ADHD more effectively than traditional CPTs (TOVA or Conners' CPT), with preliminary results demonstrating high sensitivity and specificity.

**Aims:** To test, in a population of patients referred for treatment of SUDs, the ability of the MOXO ADHD Test to:

- compare levels of attention, hyperactivity and impulsivity between patients having SUD only, patients having SUD and

comorbid adult ADHD, and a control group from the general population (no ADHD or SUD), in order to develop specific population norms for the psychometric properties of the MOXO

- differentiate between SUD patients with and without adult ADHD
- evaluate how attention levels in those with ADHD compare to attention levels in those with other disorders, such as anti-social personality disorder, bipolar disorder, borderline personality disorder and depression.

**Design & Method:** Adults seeking treatment for SUD will be recruited through inpatient and outpatient treatment services and will be administered a structured interview assessing childhood and adult ADHD and other psychiatric disorders. Performance on the MOXO ADHD Test will be compared with that of a control group recruited from the general population.

**Progress:** 447 participants have been recruited (267 SUD patients; 180 controls). Data analysis is currently underway.

**Output:** The preliminary findings of this study were presented at the III International Congress on Dual Disorders: Addictions and other Mental Disorders in Barcelona, 23-26 October 2013.

**Funding:** Neurotech Ltd (Israel); ICASA Foundation

**Date commenced:** May 2012

**Expected date of completion:** May 2014

### Development of a smartphone application for managing cannabis use: Assess, Plan, Track, Tips (APTT)

**NDARC staff:** Dr Melissa Norberg, Dr Sally Rooke, Lucy Albertella, Lisa Webb & Prof Jan Copeland

**Other investigators:** Prof David Kavanagh (Queensland University of Technology) & Dr Annie Lau (Australian Institute of Health Innovation, UNSW)

**Project summary:** This project aims to develop and test the first highly interactive, comprehensive, and evidence-based smartphone app for treating cannabis use.

**Rationale:** The potential of mobile health to transform health service delivery across the globe has not yet been realised, partly due to the lack of evidence for its efficacy and cost-effectiveness. Among other notable gaps is a lack of trials on smartphone applications (apps) for substance use, including the most commonly abused illegal drug - cannabis. Mobile phones have unparalleled ability to support behaviour change in the natural environment. Given that Australia has the second-highest smartphone penetration in the world and that 42% of Australians in drug treatment are concerned about their cannabis use, Australia is well positioned to be at the forefront of building the evidence base for mobile health for treating cannabis use.

**Aim:** To develop and test a smartphone app for assisting people to quit or reduce their cannabis use.

**Design & Method:** We will develop an app in consultation with cannabis users and trial it with 50-100 users. Baseline, post and one-month follow-up assessments will examine changes in cannabis use, problems and dependence symptoms, as well as participant evaluation of the app.

**Progress:** We surveyed 142 cannabis users to gauge interest in an app for reducing cannabis use and desired app features. Based on survey responses and clinical practice guidelines, the National

Cannabis Prevention and Information Centre (NCPIC) developed the mobile phone app known as APTT (Assess, Plan, Track, and Tips). Recruitment for the main evaluation of the app has commenced, with 39 participants enrolled in the study thus far. Participants use APTT for one month. Preliminary results show that at post-treatment, individuals have on average reduced the frequency of their cannabis use by 30% and their cannabis-related problems by 39%. These results are maintained at the one-month follow-up. Over half of the participants reported using the app for at least 20 days, and spending less than five minutes a day engaged with the app. Recruitment of individuals interested in using APTT for one month is ongoing.

**Output:** A paper in the *Journal of Addictive Behaviors, Therapy and Rehabilitation*; a presentation at the 76<sup>th</sup> Annual Meeting of the College of Problems of Drug Dependence in San Diego; and a poster and presentation at the NDARC annual symposium in Sydney.

**Benefits:** Seeking treatment for cannabis use can be difficult due to lack of access and stigmatisation. The availability of an evidence-based app for reducing or quitting cannabis may encourage treatment seeking among individuals who would otherwise not receive treatment.

**Funding:** Australian Government Department of Health

**Date Commenced:** January 2012

**Expected Date of Completion:** June 2014

### The development and evaluation of an information kit on opioid substitution treatment: Translating research into policy

**NDARC staff:** Prof Kate Dolan, Prof Michael Farrell & Zahra Alam Mehrijerdi

**Project summary:** The evidence of methadone maintenance treatment's (MMT) impact on reducing crime and other harms is overwhelming, yet its implementation is limited in the community and in prison.

We will develop an MMT information kit for key stakeholders to improve their understanding of MMT. Stakeholders include Parliamentarians, Local Government, Prison and Health Department Officers and GPs. The information kit will cover the effectiveness of MMT, global implementation and consistency with Australia's national drug policy. The kit will be evaluated by measuring people's knowledge before and after exposure to the kit. An indicator of success will be increased implementation of methadone.

**Aims:** The aim of the project is to develop and design an opioid substitution treatment (OST) information kit for key stakeholders and to measure any subsequent change in implementation of MMT. Similar to the Needle and Syringe Program information kit produced by the principal investigator and colleagues in 2005 (Dolan, Dillon, & Silins, 2005; Dolan, MacDonald, Silins, & Topp, 2005), the MMT Information Kit will contain a plain-language summary of the rationale for MMT and summarise key research findings in relation to the effects of MMT on heroin users' health and criminality.

**Design & Method:** A literature review will be conducted to provide the most recent research on the use of OST.

**Progress:** The project commenced in August 2013.

**Benefits:** Access to treatment for drug dependence is a key objective of Australia's National Drug Strategy. MMT is the 'gold

standard' of treatment for heroin dependence. Treated heroin users reduce their heroin use and criminal activity significantly, yet resource allocation to this crime prevention strategy is limited. We will attempt to identify the barriers to methadone provision and address them in our information kit.

By providing stakeholders with accurate information about MMT, this kit will assist policymakers to make informed, evidence-based decisions when determining policies in relation to health and criminal justice.

**Funding:** Australian National Council on Drugs

**Date commenced:** August 2013

**Expected date of completion:** June 2013

### The development and evaluation of an internet-based treatment for co-occurring depression and hazardous alcohol use in young Australians (The DEAL Project)

**NDARC staff:** Dr Frances Kay-Lambkin, Prof Maree Teesson, Mark Deady & Dr Katherine Mills

**Project summary:** This project focuses on comorbid depression and alcohol use, a common clinical problem that causes substantial functional, economic, and health impacts; it is under-treated and peaks in young adulthood. This project involves the development and evaluation of an internet-based treatment for co-occurring depression and hazardous alcohol use in young Australians (The DEAL Project). If found to be viable and effective, this project offers a low-cost, wide-reach, youth-appropriate treatment, which will have profound implications for service design and health policy. It relates to current Commonwealth initiatives in e-health and e-psychology.

**Rationale:** Depression and alcohol misuse are two of the major causes of disease burden in young people today. These conditions frequently co-occur and this co-occurrence is associated with increased risks and poorer outcomes than either disorder in isolation. Integrated treatments have been shown to be effective, but there remains a significant gap between those in need of treatment and those receiving it, particularly in young people (16-25 years). The increased availability of internet-based programs to complement healthcare presents a unique opportunity in the treatment of these conditions.

**Aim:** To develop a brief, internet-based, psychological intervention (the DEAL Project) and determine whether it is effective in treating co-occurring moderate depression and problematic alcohol use in young people (aged 18 to 25 years).

**Design & Method:** The development of the program consists of three phases. After a review of current interventions for the target population, in the first phase we utilise, consider and modify core concepts of an existing eHealth intervention - the Self Help for Alcohol/other drug use and Depression (SHADE) resource - for a youth population. This involves working with the SHADE CD-ROM package and original dataset to determine which elements of the program require preservation, abandonment, modification, and emphasis. Following this, in the second phase of the development we will consolidate this structure, integrating additional elements to further tailor the intervention to young people. This involves measures to optimise program engagement, and delivery, along with vignette case study development. In the final phase of development of the program (entitled the DEAL Project), we will explore the acceptability and feasibility of the program, and revise the program

based on feedback from a series of focus groups with young people and interviews with key experts. This stage culminates in program finalisation.

Evaluation of the program will take the form of an RCT comparing the *DEAL Project* with an attention-control condition (HealthWatch). The RCT will consist of a four-week intervention phase and a 24-week follow-up, conducted entirely online and Australia-wide amongst young people aged 18 to 25 years. The primary outcomes will be change in depression symptoms and alcohol use at 5, 12, and 24 weeks post-baseline. Secondary outcomes include change in general functioning and quality of life, anxiety/stress symptomatology, and other depression/alcohol related outcomes. Process analysis will also measure engagement across the conditions.

**Progress:** Development has been completed and the evaluation is currently underway.

**Output:** Two conference presentations throughout 2012-13 and a poster at the 2013 NDARC annual symposium.

**Benefits:** This project brings together world leaders in the treatment of depression and alcohol misuse, including the only researchers to have published on this important issue in the area of web-based interventions. The project focuses on a common clinical problem that causes substantial functional, economic and health impacts; comorbid depression and hazardous alcohol use. These conditions are currently under-treated, contribute significantly to the global disease burden and are at their peak in young people. Offering treatments of low cost and with wide reach to affected people will address current inequities of treatment access for these problems, and provide a youth-appropriate modality of treatment delivery. These results will have profound implications for service design and health policy, and be relevant to current Commonwealth initiatives in e-health and e-psychology.

**Funding:** NHMRC

**Date commenced:** January 2012

**Expected date of completion:** December 2014

### Diagnosing major depression in older Australian adults: Is there evidence for age-related bias?

**NDARC staff:** Dr Matthew Sunderland, Dr Natacha Carragher, A/Prof Tim Slade & Dr Heather Buchan

**Other investigators:** Dr Philip Batterham (Australian National University), Prof Gavin Andrews & Dr Louise Mewton (School of Psychiatry, UNSW)

**Project summary:** Epidemiological studies have consistently indicated that the prevalence of depression decreases with increasing age. Researchers have debated whether this finding is a real age-dependent decline or an artefact of sampling and assessment. This study seeks to use statistical methods and cognitive interviewing to investigate the potential for age-related bias in the criteria for major depression. The study will make recommendations to improve the diagnostic methods used to diagnose and treat major depression in elderly people.

**Rationale:** Nationally representative surveys conducted in Australia and abroad provide valuable information regarding the pervasiveness, risk factors, and service use associated with major depressive disorder (MDD) in the community. This information is utilised by mental health policymakers to direct funding towards

subgroups of the population that would benefit from targeted prevention and treatment programs. However, there is controversy in the literature regarding the accuracy of the DSM-IV criteria when estimating the prevalence of MDD in older adults.

**Aim:** To address the pressing need to clarify the validity of mental health assessment methods used to diagnose DSM-IV MDD in older Australians (aged 65+).

**Design & Method:** The project will utilise a two-stage design to examine the extent of age-related bias in the current Australian prevalence estimates of MDD. The first stage will utilise a statistical technique known as differential item functioning to investigate the presence and extent of bias in the DSM-IV MDD criteria, operationalised in the 2007 Australian National Survey of Mental Health and Wellbeing. The second stage will further investigate the sources of bias in MDD diagnosis in older Australian adults through an expert review of the diagnostic criteria and cognitive interviewing in a sample of older Australians.

**Progress:** The first stage of the study is now complete. Several analyses of the general population survey data have been conducted and have resulted in four published manuscripts describing investigations of various age-related changes and biases inherent in the diagnostic criteria for mental disorders. Three more manuscripts are currently submitted or will be submitted for publication shortly.

The second stage of the study has commenced and the expert review of the diagnostic criteria is finished. The data from the expert review have been analysed and incorporated into a cognitive interview that seeks to investigate the thought processes of older adults when they answer questions about diagnostic symptoms of depression. Recruitment for the cognitive interview stage is about to commence.

**Benefits:** The results of the proposed research project will have broad policy, clinical and public health implications. Specifically, prevalence estimates generated by epidemiological studies are critical to mental health policymakers who are responsible for directing funding to future treatment and prevention plans. In clinical settings, the DSM-IV diagnostic criteria are applied consistently across varying adult ages without complete knowledge that the criteria are valid for assessing old age depression. Furthermore, this research will provide evidence of validity for future studies that aim to examine the complex relationship between MDD and comorbid disorders amongst older Australians.

**Output:** Papers have been published in the *Journal of Affective Disorders* and the *Journal of Abnormal Psychology*. A further two papers are in press. Papers and posters were presented at the 2013 14<sup>th</sup> International Congress of the IFPE, the Australian Society for Psychiatric Research conference and the NDARC annual symposium.

**Funding:** NHMRC Project Grant

**Date commenced:** January 2013

**Expected date of completion:** December 2014

### The efficacy of behavioural activation treatment for co-occurring depression and substance use disorder: The Activate Study

**NDARC staff:** Prof Maree Teesson, Dr Joanne Ross, Dr Katherine Mills, Dr Sharlene Kaye, Dr Frances Kay-Lambkin, Philippa Ewer, Katrina Prior & Xanthe Larkin

**Other investigators:** Prof Carl Lejuez (University of Maryland), Prof Kathleen Brady (Medical University of South Carolina) & Dr Glenys Dore (Northern Sydney Drug & Alcohol Service)

**Project summary:** Drug dependence is a chronic relapsing condition associated with high levels of psychopathology. On entry to drug and alcohol treatment approximately 25% of heroin users and 40% of methamphetamine users meet criteria for major depression, and this comorbidity has been linked to poorer treatment outcomes. Despite this, the development and assessment of behavioural interventions for depression among illicit drug users has received little empirical attention. One treatment approach that has shown promise among residential rehabilitation clients in the United States is Behavioural Activation Therapy for Depression (BATD-R; Lejuez et al, 2011). BATD-R is a structured treatment that aims to activate clients in specific ways that will increase rewarding experiences in their lives. BATD-R is more time efficient and less complex than most other treatments for depression. The current study seeks to examine the feasibility of using BATD-R among depressed opioid replacement therapy (ORT) and residential rehabilitation clients.

**Aims:** In this project, we will:

- determine the efficacy of BATD-R among ORT and residential rehabilitation clients by comparing the treatment outcomes of those who receive the intervention with those who receive standard care for their drug dependence
- identify factors that influence the efficacy of BATD-R, including:
  - client characteristics: demographic, drug use and psychological factors
  - treatment characteristics: treatment compliance
- assess the feasibility of implementing the intervention, as measured by treatment retention, client satisfaction and therapist competence.

**Design & Method:** Drug users reporting symptoms of mild to severe depression will be recruited through ORT and residential rehabilitation services, and will be randomly allocated to either treatment as usual (TAU = Control group; N=100) or usual treatment plus the BATD-R intervention (treatment group; N=100). Participants will be interviewed at baseline and again at three months and 12 months post-baseline.

**Progress:** Staff have undergone training in behavioural activation therapy. UNSW ethics clearance has been obtained, and four recruitment sites have been established (three residential rehabilitation programs and one opioid replacement therapy clinic). To date 46 people have completed the baseline interview and 28 have completed the three-month follow up, representing an 85% three-month follow-up rate.

**Output:** Poster at the 2013 NDARC annual symposium.

**Benefits:** The findings of this study will be of importance to clinicians and policymakers both in Australia and internationally. Integrated treatment is recommended in people with severe psychiatric illness and AOD problems, but there are currently few evidence-based treatment options for dependent drug users suffering from depression. The BATD-R is a manualised treatment that has shown promise among AOD residential rehabilitation clients and psychiatric inpatients, but large RCTs are needed to broaden its evidence base. This study will be the first to assess the

efficacy of this intervention among opioid-dependent outpatient clients suffering comorbid depression, and will be one of the few RCTs of psychosocial treatments for comorbid depression and drug dependence to be conducted internationally.

**Funding:** NHMRC

**Date commenced:** February 2013

**Expected date of completion:** February 2016

### Evaluation of the Inner City Youth at Risk Project and the Inner City Assertive Outreach Service

**NDARC staff:** Dr Lucy Burns and Elizabeth Whittaker

**Other investigators:** Dr Elizabeth Conroy (University of Western Sydney) & Prof Paul Flatau (University of Western Australia)

**Project description:** The traditional response of the human service system to the needs of homeless people experiencing mental health conditions involves specialist homelessness, drug and alcohol, and mental health services providing support in a largely autonomous fashion. Cross-sector coordination of services is typically limited to referrals from one service domain to another with minimal information sharing and communication. This research involves the evaluation of the effectiveness of two projects funded under the NSW Implementation Plan of the National Partnership Agreement on Homelessness, the Inner City Assertive Outreach Service (or 'Way2Home') and the Inner City Youth at Risk Project, both of which are based on integrated service models. The evaluation will examine the effectiveness of the two projects in terms of their ability to achieve both operational and client-based effectiveness criteria, and in particular will seek to assess the impact of the projects on the health, housing, social and economic targets of the two initiatives. Since homelessness is strongly associated with substance use, the evaluation will also seek to determine the impact of the two services on client substance use.

**Aims:** This proposal involves the evaluation of the effectiveness of two projects funded under the NSW Implementation Plan of the National Partnership Agreement (NPA) on Homelessness, the Inner City Assertive Outreach Service and the Inner City Youth at Risk Project.

With respect to the Inner City Assertive Outreach Model (Way2Home), the aims of the evaluation are to:

- examine whether Way2Home has successfully implemented a best practice model of assertive outreach and of housing first principles
- determine whether effective integrated support has been provided to clients across a range of housing and health needs
- assess the extent to which Way2Home has achieved positive health and housing outcomes for clients and is more effective than existing programs
- assess the key factors leading to identified successes or barriers for Way2Home with specific reference to the role of the housing first model, partnerships, the assertive outreach approach and access to services and housing
- evaluate the extent to which Way2Home led to positive NPA performance benchmark indicator outcomes
- determine the overall effectiveness and cost-effectiveness of Way2Home

- detail any implications for future NSW Government policy on homelessness.

With respect to the Inner City Youth at Risk Project ('the Project'), the evaluation seeks to:

- assess the extent to which the Project meets the needs of both young people with high needs who are rough sleepers or chronically homeless as well as homeless young people who are homeless or at risk of homelessness with low to moderate needs
- determine the extent to which the Project improves the sustainability of tenancies for those clients who received a tenancy and support package
- evaluate the extent to which the Project improved access to mainstream health supports and identification of young adults and youth at risk through the development of interagency partnerships with mainstream services and specialist homelessness services
- assess the extent to which the Project achieves positive health, housing and social and economic outcomes for young people
- assess the key factors leading to identified successes or barriers for the Project with specific reference to interagency collaboration, partnerships, referral pathways and resource availability (services and housing)
- evaluate the extent to which the Project led to positive NPA performance benchmark indicator outcomes
- determine the overall effectiveness and cost-effectiveness of the Project
- detail any implications for future NSW Government policy on homelessness.

**Design & Method:** The study utilises a mixed-methods design involving quantitative and qualitative components:

- a client outcomes survey
- case studies of a sub-sample of clients and their primary support worker
- cost effectiveness analysis (using both survey and administrative data)
- in-depth interviews with key stakeholders regarding service capacity and integration.

**Progress:** The Way2Home evaluation is ongoing. To date we have interviewed clients at baseline and 12 months post-baseline, and are in the process of locating participants for their 24-month follow-up interviews. Qualitative interviews have been completed with some clients who have been housed and stakeholders who gave us indications of the strengths and pitfalls of the program.

The final report for the Inner City Youth at Risk Project evaluation has now been completed and sent to the funders. The final report describes the findings from young people who completed the baseline interview, and individual changes amongst young people who completed both baseline and 12-month follow-up interviews. In addition, we completed semi-structured qualitative interviews with clients who obtained housing through this program and key stakeholders to understand the impact of this program on the lives of individual clients. We conducted cost analyses of the brokerage component of the program, as well as the total costs of the program.

**Output:** *Evaluation of the Inner City Youth at Risk Project: Final Report* and an in-house presentation as part of the NDARC seminar series (September).

**Funding:** NSW Ministry of Health - Health Administration Corporation Contract Research

**Date commenced:** November 2010

**Expected date of completion:** 2014

### Evaluation of NSW Government initiative Platform 70

**NDARC staff:** Dr Lucy Burns & Elizabeth Whittaker

**Other investigators:** Prof Paul Flatau (University of Western Australia) & Dr Elizabeth Conroy (University of Western Sydney)

**Project summary:** Platform 70 is a project of the National Partnership Agreement on Homelessness and commenced in 2011. The project has the following key objectives:

- to place 70 rough sleepers in the Woolloomooloo (NSW) area into long-term housing by 2012/13
- to reduce the reliance on crisis accommodation for homeless people by increasing long-term housing options for rough sleepers in the Woolloomooloo area
- to enhance the sustainability of private rental tenancies for rough sleepers in the Woolloomooloo area by linking housing assistance with support services.

As part of the NSW Homelessness Action Plan Evaluation Strategy, Housing NSW contracted NDARC to conduct a longitudinal analysis of Platform 70.

**Aim:** To identify the factors that contribute to successfully housing people exiting homelessness via head-leasing arrangements and the factors that contribute to the sustainability of tenancies for this group.

**Design & Method:** The Platform 70 evaluation will build on an existing evaluation of the Way2Home program currently being conducted by Dr Burns. Therefore, the methodology will be tightly integrative within, and informative of, the Way2Home study. The evaluation will include:

- quantitative client surveys upon entry to support (the baseline survey) and 12 months post-baseline
- a cost-benefit analysis
- analysis of data collected by the housing provider and support teams
- qualitative surveys of a sub-sample of Platform 70 participants
- stakeholder analysis.

**Progress:** The baseline report (released July 2013) describes the demographics of all Platform 70 clients; the key elements and outcomes of the head-lease model; and baseline client outcomes, including housing, physical health, mental health, social engagement and service usage.

Baseline results showed that the clients of the Platform 70 program met the intended target group of vulnerable people who have experienced chronic homelessness in Woolloomooloo. The stakeholders interviewed for the evaluation universally regarded the head-leasing model as an effective contemporary approach to breaking the cycle of homelessness, enabling chronic rough sleepers to stop cycling through homelessness services and

engage with communities and mainstream services. Platform 70 housing provided clients with the stability needed to focus on other problems, such as healthcare and reconnecting with family, which were typically neglected when rough sleeping in favour of addressing fundamental needs such as finding shelter and food.

There was broad agreement that two key strengths of the Platform 70 program are its immediate provision of private rental properties allowing rapid access to secure, permanent housing, and the wrap-around support services that maximise clients' ability to maintain tenancies. There has been a 94% tenancy retention rate among Platform 70 clients, and all tenancy problems were resolved.

Twelve month follow-up data collection has commenced and will continue into 2014. The final report is due to be released in September 2014.

**Outputs:** Six-monthly progress reports and a final report will be delivered to Housing NSW.

**Benefits:** This project will contribute to a comprehensive evidence base to inform future service planning and resource allocation for homelessness services in NSW.

**Funding:** Department of Family and Community Services, Housing NSW

**Date Commenced:** August 2012

**Expected Date of Completion:** November 2014

### Improving cardiovascular health among people with depression: The development and pilot testing of an evidence-based internet healthy lifestyles treatment

**NDARC staff:** Dr Frances Kay-Lambkin

**Other investigators:** Prof Robyn Richmond (School of Public Health and Community Medicine, UNSW) & Prof Amanda Baker (University of Newcastle)

**Project summary:** Depression and cardiovascular disease (CVD) are currently ranked three and four in the top 20 causes of burden of disease worldwide, and are elevated to numbers one and two on this list when middle-high income countries, such as Australia, are considered. Several theories can account for the increased risk of these among people with depression, including the impact of unhealthy lifestyle choices often inherent among this group. A US survey of 1,612 patients, which assessed a range of CVD risk factors, indicated that depressive symptomatology was associated with significantly higher caloric intake, significantly decreased physical activity and significantly increased number of daily cigarettes compared to people without depression.

**Aims:** To develop the first web-based multi-factor psychological treatment for people with depression, heavy tobacco use and a range of other comorbid CVD, risk factors (poor nutrition, physical inactivity and weight). This treatment is known as Healthy Lifestyles Treatment (HLT).

**Design & Method:** This project seeks to increase the accessibility of an innovative, evidence-based psychological treatment (HLT) for improving cardiovascular and mental health among people with depression, by translating it to internet-based delivery (iHLT). HLT has already been developed and evaluated in face-to-face format by the investigative team. iHLT will contain interactive components, including video demonstrations, voiceovers and in-session exercises and will be made widely available via the internet. It will

be menu-driven, with site users able to select a CVD risk factor on which to focus for each session in addition to their depressive symptomatology (i.e. smoking cessation, physical activity, nutrition and diet), with options available to integrate messages regarding other relevant CVD risk factors as relevant. The iHLT website will contain self-administered assessment instruments covering relevant mental and general health domains. Users of the site will be prompted to complete these questionnaires at suitable points in the iHLT program, to enable self-monitoring of progress and facilitating ongoing research evaluation with the target group. Site users will also receive a printout and summary of these assessment scores, and be encouraged to discuss these results with their relevant health worker.

**Progress:** The project was ongoing in 2013.

**Benefits:** It is hypothesised that completion of the iHLT program will be associated with decreases in CVD risk factors (including alcohol use, tobacco use, physical inactivity, dietary issues and obesity), decreases in depression and improvements in quality of life and general functioning. A dose-response relationship is suggested, with greater improvement hypothesised among those completing more iHLT modules. Providing internet-based access to iHLT could result in individuals receiving treatment in an earlier phase of their disorder, thereby contributing to the prevention, early detection and management of depression and CVD. An additional aim is to empower people to become more actively involved in their own health care, largely via the provision of relevant and tailored information. This approach should also facilitate the strengthening of subsequent client-healthcare professional communications.

**Output:** Healthy Lifestyles website

**Funding:** Australian Government Department of Health contract research

**Date commenced:** July 2010

**Expected date of completion:** To be confirmed

### Improving comorbidity treatment within residential substance abuse programs: A randomised trial of a computer-based depression and substance abuse intervention

**NDARC staff:** Dr Frances Kay-Lambkin

**Other investigators:** Prof Amanda Baker (University of Newcastle), Dr Peter Kelly & Prof Frank Deane (University of Wollongong)

**Project summary:** It is very common for individuals to have both mental health and substance abuse problems. This is particularly the case for individuals accessing substance abuse treatment, where up to 80% of participants have a co-occurring mental health diagnosis. When compared to people with a single diagnosis, individuals diagnosed with both mental health and substance abuse problems have significantly poorer treatment outcomes across a broad range of outcome domains. It is extremely important that Australian residential substance abuse services provide comprehensive treatment for individuals diagnosed with co-occurring mental health and substance abuse problems. However, the majority of Australian residential substance abuse services still primarily target only the person's substance abuse problems and cognitive-behavioural therapy (CBT) is infrequently employed in these settings, despite its strong evidence base.

**Aims:**

- To examine the acceptability of using a computer-based intervention within a residential substance abuse setting
- To examine differences in substance use and mental health outcomes between participants in the treatment condition and participants in the control condition

**Design & method:** The study will evaluate the effectiveness of 'adding' a computer delivered comorbidity CBT intervention (SHADE) to an already established substance abuse program. The study will be conducted as a randomised trial, where the treatment condition will complete the SHADE program in addition to treatment as usual (TAU) (i.e. The Salvation Army residential program, based on the 12-step approach). The control condition will complete TAU only. As mental illness is not specifically targeted as part of The Salvation Army program, and CBT not systematically available for substance use problems, it is hypothesised that individuals in the treatment condition will report greater improvements in their mental health and reductions in their substance use at follow-up than individuals in the control condition.

**Progress:** The project was ongoing in 2013.

**Output:** Paper published in BMC Public Health.

**Benefits:** If the computer-delivered CBT comorbidity intervention proves to be effective it will continue to be offered to all participants who enter William Booth House in Sydney each year. Additionally, the intervention would be expanded across each of The Salvation Army residential substance abuse services across New South Wales, Queensland and the Australian Capital

Territory (500 beds in total, 1,800 individuals treated annually). An advantage of using a computer delivered intervention is that high quality, evidenced-based clinical interventions are readily available for uptake by clinical services, with expansion of the program not placing any additional burden on the staff or organisation. Rather, implementation will only require The Salvation Army to use already existing computer terminals and ensure that the intervention is timetabled into the participants' weekly activities. It is hoped that these activities will help to promote the use of computer based interventions within residential substance abuse settings across Australia.

**Funding:** Australian Rotary Health Research Fund

**Date commenced:** January 2011

**Expected date of completion:** To be confirmed

### In-Depth Evaluation of Common Ground Sydney

**NDARC staff:** Dr Lucy Burns & Elizabeth Whittaker

**Other investigators:** Dr Shannon McDermott (School of Social Sciences, UNSW), Dr Jane Bullen (Social Policy and Research Centre, UNSW), Dr Kristy Muir, Senior Research Fellow (Social Policy and Research Centre, UNSW), Professor Hal Pawson (City Futures Research Centre, UNSW), Judith Stubbs (Judith Stubbs and Associates) and John Storer (Judith Stubbs and Associates).

**Project summary:** Common Ground Sydney opened on 15 November 2011 and is Australia's third project based on the Common Ground model. Common Ground Sydney accommodates formerly chronically homeless people and people on low to moderate incomes in a socially integrated housing complex in inner Sydney. According to Housing NSW, Common Ground Sydney was initiated as part

of a coordinated government response to homelessness and the Australian Government's 2008 commitment to reduce the number of people sleeping rough by 25% by the year 2013. It aims to respond to high levels of homelessness and rough sleeping in the inner city of Sydney and to promote a model of 'Street to Home' housing coupled with support services. The evaluation of Common Ground Sydney involves gathering, collating and analysing data to measure progress towards its goals.

**Aims:** The purpose of the evaluation is to assess Common Ground Sydney's effectiveness in facilitating sustainable housing for vulnerable, formerly chronically homeless people, many of whom have spent long periods sleeping rough. The evaluation aims to inform future planning and contribute to evidence about what works to house this group.

**Design & Method:** The research project utilises a longitudinal, mixed-methods approach over 18 months focusing on the following three streams of enquiry:

- resident outcomes - incorporating housing, health, mental health, social and economic outcomes for formerly homeless tenants
- structure and process of service delivery - including the physical design of the building, the tenancy management and support provider partnerships, and impact on other stakeholders and service providers
- total costs and benefits - of Common Ground Sydney compared to other responses to homelessness, and compared to other Common Ground Projects across Australia. Where possible, calibrating the cost-effectiveness of the project/approach will also involve assessing the reduction or avoidance of costs incurred across NSW Government agencies and other organisations as a result of entry into the project.

**Progress:** Baseline findings have been delivered to Housing NSW.

**Outputs:** Baseline and 12-month follow-up reports will be produced for Housing NSW.

**Benefits:** This project will contribute to a comprehensive evidence base to inform future service planning and resource allocation for homelessness services in NSW.

**Funding:** Department of Family and Community Services, Housing NSW

**Date Commenced:** February 2013

**Expected Date of Completion:** April 2014

### Internet-delivered psychological treatment for comorbid depression and alcohol/other drug use problems: The SHADE project

**NDARC staff:** Dr Frances Kay-Lambkin

**Other investigators:** Prof Amanda Baker, Prof Brian Kelly & Dr Kerry Inder (University of Newcastle)

**Project summary:** Mental health and AOD researchers and clinicians must respond to the increased demand for their services by developing and evaluating treatment programs that address depression and alcohol use disorders while minimising cost and maximising efficient use of clinician time and client outcomes. Available evidence-based treatments provide for single problems (e.g. depression or alcohol misuse) rather than the comorbidity with which clients typically present. Treatments are often high intensity,

require specialist input and training, and are therefore only accessible to a minority of clients. For these reasons many clinicians are not able or willing to implement these interventions in practice. The increased availability and use of internet-based programs as a supplement to health care is also a potential solution to well-documented treatment accessibility problems, particularly among people with depression and AOD use comorbidity.

**Aims:** To conduct a pilot intervention study with an epidemiological cohort of the internet-delivered SHADE treatment program.

**Design & Method:** Participants who report elevated psychiatric distress and hazardous alcohol use will be randomly assigned to assisted versus unassisted SHADE treatment programs and monitored over a six month period.

**Progress:** The project was ongoing in 2013.

**Benefits:** Findings from this research will result in the development of an effective, cost effective and acceptable treatment program for people with comorbid alcohol and depressive disorders.

**Funding:** beyondblue

**Date commenced:** July 2010

**Expected date of completion:** To be confirmed

### The MISHA Project

**NDARC staff:** Dr Lucy Burns

**Other investigators:** Dr Anthony Eardley (Social Policy Research Centre, UNSW), Kathryn Di Nicola (Mission Australia), Dr Paul Flatau (University of Western Australia), Dr Elizabeth Conroy (University of Western Sydney) and Marina Athanassios (University of Western Sydney)

**Project description:** The MISHA Project is a follow-on to the Michael Project. MISHA, or 'Michael's Intensive Supported Housing Accord', is an integrated program that provides long-term stable accommodation and a holistic service delivery approach to homeless men. The aim of the program is for clients to achieve housing stability, improved social inclusion, and a capacity to live within the broader community. NDARC, together with the University of Western Australia (UWA), will assess and report on the program's effectiveness.

**Aim:** To evaluate the MISHA service model and develop an evidence base that can inform and influence government policy in the housing and homelessness fields.

**Design & Method:** The key component of the evaluation is a longitudinal survey (the MISHA Survey) of men recruited to MISHA. Other aspects of the research design are the use of relevant administrative data including NAHA service and housing data, a qualitative evaluation of the service, and a cost-effectiveness analysis.

**Progress:** The final report has been drafted.

**Output:** Two reports: *How homeless men are faring: Baseline report from Michael's Intensive Supported Housing Accord (MISHA) and Home safe and sound: MISHA 12 month report.*

**Funding:** Mission Australia (shared grant with UWA and University of Western Sydney).

**Benefit:** Access to long-term housing and the sustainability of tenancies will be improved; client wellbeing and social inclusion will be improved.

**Date commenced:** December 2010

**Expected date of completion:** June 2014

### Monitoring of Reduce your use, a web-based cannabis treatment program

**NDARC staff:** Dr Sally Rooke, Prof Jan Copeland & Dr Melissa Norberg

**Project summary:** A recent randomised controlled trial (RCT) found that the Reduce Your Use (RYU) program was effective in assisting cannabis users to quit or cut down on their use. The program is now publicly available via the NCPIC website, and ongoing monitoring is required in order to assess public response with regard to uptake, compliance, satisfaction, and preferred elements.

**Aims:** To monitor RYU from the back end, and obtain information on the following:

- number of people who sign up for the program versus number who click on the RYU homepage
- number of modules completed by those who sign up (averages and individual data)
- time spent completing each module (averages and individual data)
- number of optional extras people elect to complete (and averages)
- number of quick assist links people use (and averages)
- percentage of participants who download optional documents such as the self-monitoring diary, relaxation form, anger management form, and assertiveness form
- most popular quick assist links (i.e. number of times each link is clicked)
- percentage who use video mode versus text mode
- average module ratings
- most popular optional extras and averages, controlling for modules completed
- list of comments on each module left by participants
- whether participants who drop out of the program (classified as not accessing it for one month) return at any point.

**Design & Method:** NCPIC's web team Redant will collect the information indicated above and provide NCPIC with monthly updates via a spreadsheet. At the close of the study, the web team will provide NCPIC with a final spreadsheet collating the requested information.

**Progress:** Monitoring has taken place for the July-September 2013 quarter. The program is obtaining around 30 sign-ups per month. We have collected program evaluations and detailed usage data and will analyse them once we have a complete year of data.

**Funding:** Australian Government Department of Health

**Benefit:** The study may assist NCPIC in revising the website and guide others in developing self-help materials for substance use and other health-related issues.

**Date Commenced:** April 2013

**Expected Date of Completion:** September 2014

### Online screening and feedback for cannabis use

**NDARC staff:** Dr Sally Rooke, Dr Melissa Norberg & Prof Jan Copeland

**Project summary:** The aim of this project is to develop an online screening resource for cannabis use that provides feedback concerning patterns of use as well as motives for using. An RCT will compare cannabis use and help-seeking among individuals who receive the feedback intervention compared with individuals who receive a reduced feedback intervention.

**Aim:** To add an evidence-based brief screening and feedback program to the NCPIC website.

**Design & Method:** Three hundred cannabis users will be randomly assigned to receive the extended (intervention) feedback program or the reduced (control) program. Help-seeking behaviour, changes in cannabis use, and satisfaction with the program will be evaluated a month later.

**Progress:** We pilot tested the screening program in July 2013 and modified it based on the feedback of 10 pilot participants. Recruitment for the study commenced in October 2013. We recruited 80 participants by December 2013, and recruitment will continue in 2014.

**Funding:** Australian Government Department of Health

**Benefit:** The study may result in the development of an evidence-based online screening and feedback tool relating to cannabis use.

**Date Commenced:** January 2011

**Expected Date of Completion:** June 2014

### The prevalence of drug and alcohol presentations on hospital-based services

**NDARC staff:** Dr Lucy Burns, A/Prof Tim Slade & Kerryn Butler

**Other investigators:** Cate Wallace (NSW Health), Dr Rosalie Viney, Dr Rebecca Reeve and Kees van Gool (University of Technology Sydney) & Dr Elizabeth Conroy (University of Western Sydney)

**Project description:** Despite a high prevalence of AOD-related morbidity among patients presenting to emergency departments, acute care settings and pre-admission clinics, previous research has found AOD-related morbidity is not commonly identified on admission. AOD-related morbidity has important implications for patient management whilst in hospital as well as on readmission rates. Consultation Liaison (CL) services are an intervention implemented in clinical settings to provide direct access to specialist services for support, treatment, advice and assistance with the management of a given condition. CL services have been adapted to the AOD field to reduce the health burden and associated costs that AOD problems place on the health system, such as inpatient ward access and exit blockages and readmissions. NSW Health has provided specific funding to enhance AOD CL services in four AHSs: Sydney South West, Hunter New England, Greater Southern and Greater Western.

NDARC, in collaboration with the Centre for Health Economics Research and Evaluation (CHERE) at the University of Technology Sydney, has been contracted by NSW Health, Mental Health and Drug and Alcohol Office (MHDAO), to evaluate Drug and Alcohol Consultation Liaison Services (AOD CL) in NSW. This evaluation will also include the development of a clinical model of care for the

establishment of future CL services in NSW and to standardise service provision in existing hospitals and AHSs.

**Aims:** To determine whether the implementation of AOD CL increases the identification of patients with AOD problems and improves their health outcomes and treatment pathways.

**Design & Method:** The evaluation comprises three sub-studies:

- A patient survey: A survey in the emergency departments and additional select wards (e.g. orthopaedic, psychiatry) in eight NSW hospitals to identify the contribution of substance use to patients' presentations and the proportion of patients presenting with a recent history of substance use requiring an intervention. Data collection occurred 24 hours per day for a period of 10 days. The patient survey was designed to be self-completed. A sub-sample of patients identified as having a substance use problem were followed up at three months to examine their use of health services and uptake of referrals to drug treatment if attended to by AOD CL staff. NDARC was responsible for this component.
- Cost-effectiveness analysis: We will ascertain the cost-effectiveness of AOD CL services using data linkage of the baseline patient survey, emergency department presentations, hospital separations, use of AOD CL services and MBS/PBS data. Participants will be tracked for a 36-month period (18 months either side of their baseline survey date). CHERE is responsible for this component.
- Model of Care / Clinical Pathways: We will undertake in-depth interviews with AOD CL and general hospital staff to document the model of CL implemented at each site and the impact of AOD CL services on patient management and clinical pathways. NDARC is conducting this component, and 14 hospitals are participating.

**Progress:** We have completed baseline and follow-up patient surveys at all eight NSW hospitals, analysed baseline data and completed direct costs and unit cost analysis. Preliminary findings about the costs identified with ED and inpatient hospital presentations and health service utilisation have been reported to MHDAO. Final analysis and post-final analysis is expected to be completed by December 2014.

**Output:** We submitted the Model of Care draft document to NSW Health MHDAO in May 2012, and shared preliminary results via a poster and presentation at the NDARC annual symposium in September.

**Funding:** NSW Department of Health contract research

**Date commenced:** November 2010

**Expected date of completion:** December 2014

### Randomised controlled trial of a financial counselling intervention and smoking cessation assistance to reduce smoking in socioeconomically disadvantaged groups

**NDARC staff:** Prof Richard Mattick, Prof Michael Farrell, Dr Ryan Courtney, Emma Black, Veronica Boland, Danya Braunstein, Philip Clare, Jaimi Iredale, Lauren Touyz & Emily Upton

**Other investigators:** Dr Kristy Martire (School of Psychology, UNSW), Dr Billie Bonevski (University of Newcastle), Prof Ron Borland (The Cancer Council Victoria), Prof Christopher Doran (University of Newcastle) & Prof Wayne Hall (University of Queensland)

**Collaborators:** Prof Mohammad Siahpush (University of Nebraska Medical Center), Laureate Professor Rob Sanson-Fisher (University of Newcastle) and Prof Robert West (University College London)

**Rationale:** Increasingly, Australian smokers represent the socially marginalised and economically disadvantaged sector of our community. They also are a group of people with an increased likelihood of experiencing financial stress. Our knowledge base regarding the efficacy of various interventions for low socio-economic status (SES) smokers is scant. Reducing smoking rates among this population groups requires the development and implementation of rigorous intervention studies. The current research aims to investigate a novel intervention for smoking cessation - financial counselling as an adjunct to nicotine replacement therapy (NRT) with Quitline call-back - assessing its effectiveness as a public health intervention when compared with NRT and Quitline call-back alone. This investigation will provide insight into whether or not financial counselling is effective, is perceived by participants as a viable intervention approach, and whether its effectiveness is determined by the financial stressors experienced by participants.

**Aims:** Socioeconomically disadvantaged groups are more likely to smoke than other sectors of the community. This difference has been attributed, in part, to increased rates of relapse. Relapse is strongly and consistently predicted by financial stress. This project attempts to reduce relapse by reducing financial stress among disadvantaged smokers through the provision of financial counselling as an adjunct to NRT.

**Design & Method:** We will conduct an RCT comparing cessation rates between low-SES smokers who receive the standard intervention comprising NRT with a Quitline call-back with those who receive NRT and Quitline call-back plus financial counselling. Smoking outcomes will be assessed at two and six months post-intervention.

**Progress:** At the close of 2013 the project was recruiting participants from three streams: poster presentations in Centrelink Customer Service Centres Nationally, referrals from Quitline services nationally, and newspaper advertisements. The targeted sample size for the study is 1046 smokers. To date, over half of the sample have been randomised (n = 550). Four hundred two-month follow-up interviews have been completed. Six-month follow-up interviews commenced in December 2013 with 35 interviews completed to date. Study recruitment is on track and is scheduled to be completed within the proposed recruitment period. Several manuscripts are currently in preparation or under editorial review.

**Output:** A poster at the NDARC annual symposium and an in-house NDARC seminar presentation.

**Benefits:** This project will provide valuable information on the efficacy of targeted interventions for socioeconomically disadvantaged smokers.

**Funding:** NHMRC

**Date commenced:** January 2012

**Expected date of completion:** December 2015

## PATTERNS OF ALCOHOL AND DRUG USE

### A longitudinal study of cannabis use, schizotypy & attentional inhibition

**NDARC staff:** Lucy Albertella & Prof Jan Copeland

**Other investigators:** Dr Mike Le Pelley (School of Psychology, UNSW)

**Project summary:** This project forms the basis of Lucy Albertella's PhD. It is a longitudinal study of cannabis use, schizotypy, and attentional inhibition in a sample of 14-24 year olds.

**Rationale:** Research shows that there is a relationship among cannabis use, schizotypy, and attentional inhibition, but the nature of this relationship is unclear. To address this issue, we are conducting a longitudinal study of cannabis use, schizotypy, and negative priming (a measure of attentional inhibition) in a sample of 14-24 year olds. Knowing how cannabis use, schizotypy, and attentional inhibition are temporally related in adolescence and young adulthood will allow a better understanding of how these factors interact to increase risk for psychotic disorders.

**Aims:** To determine how cannabis use, schizotypy, and attention are temporally related in a sample of 14-24 year olds.

**Design & method:** The study design is longitudinal. Cannabis use, schizotypy, and negative priming are assessed online, at three time points; i.e., at baseline, at 6 months, and at 12 months follow-up.

**Progress:** To date, over 100 participants have been recruited and have completed the baseline assessment.

**Date commenced:** March 2013

**Expected date of completion:** February 2016

### Australian Longitudinal Study of Heroin Dependence: An 11 year prospective cohort study of mortality, abstinence, criminality and psychiatric comorbidity among heroin users

**NDARC staff:** Prof Maree Teesson, Prof Shane Darke, Dr Katherine Mills, A/Prof Tim Slade, Dr Joanne Ross, Dr Lucy Burns, Dr Christina Marel & Sonja Memedovic

**Other investigators:** A/Prof Michael Lynskey (Washington University)

**Project description:** Heroin dependence is remarkably persistent, and in many cases it is a lifelong condition with a high mortality rate, yet the natural history of heroin dependence has rarely been studied. *The Australian Treatment Outcome Study (ATOS)* is a landmark Australian cohort study examining outcomes from heroin dependence in over 40 research publications over three years (2001-2004; *NHMRC 300454*). The 11-year prospective cohort study will re-contact and re-interview the 615 individuals who participated in the initial three-year cohort study.

**Aims:** To conduct the longest and most comprehensive prospective follow-up of heroin users in Australia.

**Design & Method:** Eleven-year follow-up interviews examining mortality, abstinence, criminality, psychopathology and suicidal behaviour will be conducted with individuals in the ATOS cohort.

**Progress:** Prof Maree Teesson and colleagues completed data collection for the 11-year follow-up of the NHMRC-funded ATOS.

Despite having no contact with participants in the intervening eight years, the 11-year follow-up rate was 70%, exceeding the previous three-year follow-up rate. Data analyses are currently underway, and preliminary data were presented at one international and one national conference in 2013. The ATOS team will also be collaborating with international researchers to present a symposium on longitudinal trajectories of heroin dependence at the annual College on Problems on Drug Dependence meeting in Puerto Rico in June 2014.

**Output:** 2013 output included a paper in *Drug and Alcohol Dependence* and posters at the American Psychological Association Annual Meeting (July 2013) and NDARC annual research symposium (September 2013).

**Funding:** NHMRC project grant and UNSW Goldstar

**Date commenced:** October 2011

**Expected date of completion:** December 2014

### Binge drinking and the adolescent frontal lobe

**NDARC staff:** Prof Maree Teesson & Lucy Swaffield

**Other investigators:** Prof Caroline Rae (NeurA) & Prof Roland Henry (University of California)

**Project description:** Adolescence is a critical period for brain development, with active rewiring of circuitry that is necessary in successful development of 'adult' adaptive patterns of behaviour, such as the frontal lobe and its connections. Binge drinking practices may interfere with the development of these important circuits. The available evidence supports the hypothesis that heavy adolescent alcohol consumption disrupts cortical development and promotes continued impulsive behaviour, alcohol abuse and risk of alcohol dependence. However, there are few studies of the brain particularly targeted to binge drinking effects in adolescent humans and none examining the crucial development of connectivity in relation to cognition.

**Aims:** In this project, we will:

- study brain connectivity patterns in adolescent binge drinkers and abstinent controls by structural and diffusion tensor magnetic resonance (MR) imaging and spectroscopy
- examine the relationship between selected behavioural and cognitive functional outcomes and brain structure.

**Design & Method:** We will study 160 16-17 year olds (80 binge drinkers and 80 non-drinkers, 80 males, 80 females). Brain structure will be assessed using structural and diffusion MR imaging and spectroscopy with particular emphasis on later-developing regions of the brain such as the frontal lobes, and vulnerable areas such as the hippocampus. Alcohol use, mood, emotional face recognition, memory, executive function and aggression will be measured and the relationship of these variables to brain structure determined.

**Progress:** The project is ongoing; a paper is underway.

**Funding:** NDARC

**Benefit:** New knowledge on the impact of binge drinking on brain development.

**Date commenced:** 2009

**Expected date of completion:** December 2014

### Cannabis Cohort Research Consortium (CCRC)

**NDARC staff:** Dr Delyse Hutchinson, Prof Richard Mattick, Dr Edmund Silins, Prof Jan Copeland, Prof Louisa Degenhardt, Dr Marian Shanahan, A/Prof Tim Slade, Dr Wendy Swift & Prof Maree Teesson

**Other collaborators:** Prof Steve Allsop (Curtin University), Carolyn Coffey (University of Melbourne), Prof David Fergusson (University of Otago), Prof Wayne Hall (University of Queensland), Dr Mohammad Hayatbakhsh (University of Queensland), A/Prof John Horwood (University of Otago), Dr Primrose Letcher (Royal Children's Hospital, Melbourne), Prof Jake Najman (University of Queensland), Dr Craig Olsson (Royal Children's Hospital, Melbourne), Prof George Patton (University of Melbourne), Prof Richie Poulton (University of Otago), Dr Rachel Skinner (University of Western Australia), Diana Smart (Australian Institute of Family Studies), Elizabeth Spry (Murdoch Childrens Research Institute, University of Melbourne), Dr Robert Tait (Curtin University; Australian National University) & Prof John Toumbourou (Deakin University)

**Affiliates:** Dr Dave Allsop (NCPIC), Trish Jacomb (Australian National University), Dr John Howard (NCPIC), Dr Andrew Percy (Queens University, Belfast), Prof Ann Sanson (University of Melbourne) & A/Prof Jenny Williams (University of Melbourne)

**Project description:** The CCRC is a collaboration which stemmed from the need to better address pressing questions about the relationship between cannabis, other drug use, life-course outcomes and mental health in children and young adults. The CCRC is a multi-organisational and multidisciplinary international collaboration of researchers which consists of highly experienced experts knowledge in psychiatry, psychology, child and adolescent health, cannabis and other substance use, biomedicine, health and development, prevention, intervention and knowledge translation. The Consortium brings together researchers from some of the largest and most prolific longitudinal studies in the world. The CCRC aims to achieve its goals by involving partners in capacity-building activities, and by providing capacity to allow collaborative work to proceed to high-level grant application stage. Collaboration between researchers involved in existing cohorts allows for better assessments of relationships to be made, uses existing data more efficiently and increases opportunities for knowledge translation. The cohorts involved are the:

- Australian Temperament Project (ATP)
- Christchurch Health and Development Study (CHDS)
- Mater Hospital and University of Queensland Study of Pregnancy (MUSP)
- Personality and Total Health (PATH) Through Life Project
- Victorian Adolescent Health Cohort Study (VAHCS)
- Western Australian Pregnancy Cohort (Raine) Study

**Aims:** The Consortium aims to:

- foster relations among partners
- identify limitations in knowledge on patterns and causes of cannabis use, potential harms and adverse outcomes
- examine priority issues in an efficient and timely way through secondary data analysis of existing national and international cohorts

- provide health and policy feedback to the commonwealth, health professionals and the public.

**Design & Method:** The Consortium aims to achieve its goals by involving partners in capacity-building activities and by providing capacity to allow collaborative work to proceed to high-level grant application stage. Collaboration between researchers involved in existing longitudinal cohorts allows for better assessments of relationships, uses existing data more efficiently and increases opportunities for knowledge translation.

**Progress:** NHMRC project grant funding was previously awarded to the Consortium to undertake work integrating data from four large and long-running Australasian cohort studies to better understand the link between cannabis use and later outcomes. During 2013, Dr Edmund Silins, Dr Hutchinson, Prof Mattick and the broader Consortium have developed methods and protocols for the integration of participant-level data from across several Australian and New Zealand longitudinal studies. A harmonised dataset has been developed. The team have prepared numerous peer-reviewed papers and received NHMRC funding to apply the analytical techniques developed during the current work to investigate the developmental predictors and young adult outcomes of adolescent binge-drinking.

**Output:** The following papers have been completed: 1) Cohort profile: The Cannabis Cohort Research Consortium (CCRC) Harmonised Cohort, and 2) Outcomes of early onset cannabis use in young adulthood: A prognostic study across three Australasian cohorts. An additional paper was commenced which investigates the genetic prediction of early onset cannabis use and young adult outcomes. Further NHMRC funding was received to investigate adolescent binge-drinking using data from multiple sources.

**Funding:** NDARC and NHMRC Project Grant

**Date commenced:** 2006

**Expected date of completion:** 2015

### Cannabis and respiratory health

**NDARC staff:** Dr Peter Gates & Prof Jan Copeland

**Other investigators:** Prof Adam Jaffé (Faculty of Medicine, UNSW)

**Project summary:** This project builds on research by Prof Donald Tashkin (University of California) to further extend the message on respiratory cannabis-related harms. The project consists of an updated review article concerning several aspects of respiratory health including airway health and lung health.

**Rationale:** The respiratory health effects from tobacco smoking are well described. Although cannabis smoke is known to contain similar harmful and carcinogenic substances to tobacco smoke, relatively little of the respiratory health effects from cannabis smoking are understood. There is a need to integrate research on cannabis and respiratory health effects so that gaps in the literature can be identified and the more consistent findings can be consolidated with the purpose of educating smokers and health providers.

**Aims:** To add to and update a recent review of respiratory health concerns by Prof Donald Tashkin: Tashkin, D. (2013), Effects of Marijuana Smoking on the Lung, *Annals of the American Thoracic Society*, 10(3): 239-247.

**Design and Method:** A systematic review of articles on respiratory health and cannabis use published in 2013 was conducted with the ultimate goal of updating Tashkin's review.

**Progress:** Tashkin's article was updated to include consideration of the impact of cannabis use frequency and quantity as well as route of administration. A section on airway inflammation and infection was added with ties to cannabis contamination.

**Output:** An article for the peer-reviewed journal *Respirology* is being completed. In addition, collaborations with Asthma Australia and the Lung Foundation Australia will lead to the production of two fact sheets; one with the intended audience of cannabis smokers and the other for health workers.

**Benefits:** This timely review provides updated information on cannabis smoking and 1) complications of the airway including bronchodilation and constriction as well as inflammation and infection; 2) general respiratory health including symptoms of emphysema; and 3) lung cancer. Although these broad topics have been the focus of previous review articles, an important and recent article regarding the presence of lung cancer among Swedish conscripts has not been previously considered. In addition, previous review articles have generally failed to identify the limitations of available research in regards to a pervasive ignorance of the quantity of cannabis smoked and the importance of the route of administration.

**Funding:** Australian Government Department of Health

**Date commenced:** October 2013

**Expected date of completion:** January 2014

### Childhood physical abuse amongst regular drug users

**NDARC staff:** Prof Shane Darke, Michelle Torok & Dr Sharlene Kaye

**Other investigators:** Dr Fiona Shand (Black Dog Institute, UNSW)

**Aim:** This body of work examines the extent and nature of childhood physical abuse amongst regular drug users, and its relationship to later drug use and violence.

**Design & Method:** Analysis of two cross sectional studies of IDU.

**Progress:** Data collection is complete. A paper on childhood physical abuse, self-harm and attempted suicide among IDU was published in 2013 in *Drug and Alcohol Dependence*. Additional papers are in press in *Addiction* and *Drug and Alcohol Review*.

**Funding:** Australian Government Department of Health

**Date commenced:** 2012

**Expected date of completion:** 2015

### Deficits in behavioural inhibition in substance abuse and addiction: A meta-analysis

**NDARC staff:** Dr Janette Smith, Prof Richard Mattick & Jaimi Iredale

**Other investigators:** Dr Sharna Jamadar (Monash University)

**Project description:** Deficits in behavioural inhibitory control are attracting increasing attention as a factor behind the development and maintenance of substance dependence. However, the evidence for such a deficit is mixed. A meta-analysis of published results indicated that SUDs and addiction-like behavioural disorders are associated with impairments in inhibitory control, although the size of this effect varies between drug classes and inhibitory tasks.

**Rationale:** The results reported in the literature to date are contradictory and suffer from small sample sizes. Previous meta-analyses have either considered only one drug type (e.g. alcohol) or collapsed across several types of drug. We conducted a meta-analysis to find the overall effect for several classes of drugs, as well as for addiction-like behavioural disorders.

**Aims:** To provide a weighted mean effect size estimate for several classes of drugs, for inhibitory measures as well as general performance measures.

**Design & Method:** A literature search revealed 94 papers suitable for inclusion in the meta-analysis. We considered two measures of behavioural inhibition and three other general performance measures.

**Progress:** Inhibitory deficits were small-to-medium on the whole, and stronger for stimulants (cocaine, methamphetamine, ecstasy, and to a lesser extent, tobacco). Small deficits were observed for alcohol dependence and non-dependent heavy drinking. Opioid users, cannabis users and internet addicts showed no deficit in inhibition, while gamblers displayed a strong deficit. For the most part, these performance deficits were specific to inhibition, and not displayed for general performance measures.

**Output:** A paper will be submitted to *Drug and Alcohol Dependence* in 2014.

**Benefits:** The project has found solid support for the concept of a behavioural control deficit in abusers of some but not all substances. This will contribute to a narrowing of theory concerning the importance of inhibitory control to the development and maintenance of substance abuse disorders.

**Funding:** The work was supported by a UNSW Vice-Chancellor's Postdoctoral Research Fellowship

**Date commenced:** January 2012

**Expected date of completion:** April 2014

### Developing and validating an online cannabis use quantifier

**NDARC staff:** Dr Sally Rooke, Prof Jan Copeland & Dr Melissa Norberg

**Project summary:** The aim of this project is to develop an online tool that enables cannabis users to roll a virtual joint or pack a virtual cone to the specific size and tobacco/cannabis ratio that generally applies to them. Once developed, the program will be validated by examining relationships between quantities in real cones/joints with quantities estimated through using the program. This online tool will aid in more accurate assessments of cannabis consumption among research participants.

**Rationale:** There is currently a lack of reliable and convenient cannabis quantification measures. This online tool, which allows cannabis users to roll a virtual joint or pack a virtual cone to the size and tobacco/cannabis ratio they usually consume, will aid in more accurate assessments of cannabis consumption among research participants.

**Aim:** To develop and validate an online tool that enables cannabis users to roll a virtual joint or pack a virtual cone to the specific size and tobacco/cannabis ratio that generally applies to them.

**Design & Method:** NCPIC will work with web designers to develop and refine the program, then attempt to validate it with cannabis users as participants. Further refinements may be required if the validity is insufficient.

**Progress:** The program has been developed and ethics approval for participant recruitment obtained. Participant recruitment commenced in October-December 2013. Fifteen participants were recruited during that quarter. From their data, researchers were able to identify needed modifications to the program. These will get underway in January 2014.

**Benefits:** This project may result in of an online tool that cannabis researchers can use to more accurately assess the quantities of cannabis consumed by their research participants.

**Funding:** Australian Government Department of Health

**Date Commenced:** April 2013

**Expected Date of Completion:** June 2014

### Drugs and New Technologies (DNeT)

**NDARC staff:** Dr Lucy Burns, Joe Van Buskirk & Amanda Roxburgh

**Collaborators:** A/Prof Raimondo Bruno (University of Tasmania) and David Décary-Héту (Université de Lausanne, Switzerland)

**Project summary:** The Drugs and New Technologies (DNeT) project aims to investigate drug marketplaces online and in other emerging technologies. It aims to assess and quantify the online availability of drugs, including both traditional and emerging substances. This is accomplished by active monitoring of marketplaces on the 'surface web', i.e. those accessible via search engines, and the 'dark web', i.e. those accessible only by specially routed connections, such as the Silk Road. It also aims to monitor new drugs as they emerge, as well as internet forum discussion of these drugs. Findings are then placed within the context of other available indicators, such as the EDRS, to assess the impact of online availability on the Australian drug market.

#### Aims:

- provide a timely and accurate description of online availability of illicit and emerging substances
- quantify the extent and diversity of this availability across multiple online platforms
- contextualise online marketplaces within the greater Australian and international drug markets.

**Design & Method:** DNeT currently consists of regularly accessing online marketplaces and quantifying the range of substances available, as well as the price of common quantities of illicit substances and the countries of origin of retailers. These data are collected over time and assessed for changes that may arise due to policy and legislation changes, as well as high profile media stories involving emerging substances and online marketplaces.

**Progress:** Monitoring of online marketplaces was consistent through 2013. Following the FBI's seizure and closure of the largest dark web marketplace, the Silk Road, in October 2013, monitoring turned to three alternate marketplaces, and frequency of monitoring was increased to weekly. In addition to this, the emergence of new marketplaces was also tracked, so that these marketplaces may similarly be monitored as they appear. Currently, six different active

dark web marketplaces are actively monitored weekly for changes in the availability of illicit and emerging substances.

**Output:** Issue one of NDARC publication *Drugs and the Internet*.

**Funding:** Australian Government Department of Health

**Date commenced:** September 2012

**Expected date of completion:** Ongoing

### Ecstasy and related Drugs Reporting System (EDRS)

**NDARC staff:** Dr Lucy Burns, Natasha Sindich, Jenny Stafford, Kerryn Butler, Rachel Sutherland, Elizabeth Whittaker & Gavin Entwistle

**Other investigators:** Prof Paul Dietze (Burnet Institute), Cerissa Papanastasiou (Burnet Institute), A/Prof Raimondo Bruno (University of Tasmania), Dr Allison Matthews (University of Tasmania), A/Prof Rosa Alati (University of Queensland), Dr Fairlie McIlwraith (University of Queensland), Sophie Hickey (University of Queensland), Prof Simon Lenton (Curtin University) & Jodie Grigg (Curtin University)

**Project description:** The EDRS is a national monitoring system for ecstasy and related drugs that is intended to serve as a strategic early warning system, identifying emerging trends of local and national interest in the markets for these drugs. The EDRS is based on the Illicit Drug Reporting System (IDRS) methodology and consists of three components: interviews with regular ecstasy and psychostimulant users (REU); interviews with key experts (KEs - professionals who have regular contact with regular recreational users through their work); and analysis and examination of indicator data sources related to ecstasy and other related drugs. The EDRS monitors the price, purity, availability and patterns of use of ecstasy, methamphetamine, cocaine, ketamine, GHB, MDA and LSD. The EDRS is designed to be sensitive to trends, providing data in a timely manner, rather than describing issues in extensive detail.

**Aims:** The aims of this project are:

- to describe the characteristics of a sample of current regular ecstasy and psychostimulant users interviewed in each capital city of Australia
- to examine the patterns of ecstasy and other drug use of these samples
- to document the current price, purity and availability of ecstasy and other party drugs across Australia
- to examine the incidence and nature of harms related to the use of ERDs
- to identify emerging trends in the party drug market that may require further investigation.

**Design and Method:** Previously known as the Party Drug Initiative, the EDRS is coordinated NDARC, and is conducted by different research institutions in each Australian state and territory. The EDRS uses a similar methodology to the IDRS. Regular ecstasy and psychostimulant users are interviewed as they were identified as a group of drug users that are able to provide the required information on patterns of ERD use, the current availability, price and purity of ERDs and perceived drug-related health issues associated with ERD use. A semi-structured survey of experts in the field of ERDs (e.g. party promoters, treatment providers and law enforcement personnel) is also conducted and indicator data (e.g. purity of drug seizures and overdose rates) are analysed. These data

sources are examined together to identify convergent trends in ERD use and markets.

**Progress:** The EDRS was conducted successfully in every state and territory in 2013. Six hundred and eighty-six REUs were interviewed, providing information on their drug use patterns, ERD markets and related issues. KEs from a range of professions provided information on the REUs they had contact with. Indicator data including Australian Customs Service seizures, purity analysis and treatment data were examined.

**Output:** Three peer-reviewed papers were published as was a contract report for the Australian Government on alcohol use among REUs. Staff published 2012 EDRS reports for each state and territory (barring the Northern Territory), as well as a national 2012 EDRS report. Preliminary 2013 EDRS findings were published in the Drug Trends Conference handout. Four EDRS bulletins and once supplement were also published in 2013.

**Funding:** Australian Government Department of Health

**Date commenced:** January 2003

**Expected date of completion:** Ongoing

### Global Burden of Disease: Mental Disorders and Illicit Drug Use Expert Group

**NDARC staff:** Prof Louisa Degenhardt

**Other investigators:** Prof Harvey Whiteford, Amanda Baxter, Fiona Charlson, Alize Ferrari, Holly Erskine, Roman Scheurer (University of Queensland), Prof Christopher Murray, Prof Theo Vos, A/Prof Mohsen Naghavi, A/Prof Haidong Wang & Prof Alan Lopez (GBD core team, Institute for Health Metrics and Evaluation, University of Washington)

**Project description:** Global Burden of Disease (GBD) analysis provides comprehensive and comparable data on mortality and loss of health due to diseases, injuries and risk factors for all regions of the world. The overall burden of disease is calculated using the disability-adjusted life year (DALY), a measure that combines 'years of life lost due to premature mortality' with 'years of life lost due to time lived in less than full health'.

The original GBD Study was commissioned by the World Bank in 1991 and provided burden of disease estimates for 1990. NDARC has been working with the World Health Organisation (WHO) and other bodies to calculate the burden of disease, injuries and risk factors for 1990, 2005 and 2010.

NDARC's main contribution to the international GBD project is to calculate levels of disease, injury and death associated with illicit drug use and dependence.

**Aims:** The GBD study has two major objectives:

- to produce estimates of the burden of diseases and injuries, and to assess risk factors, for the years 1990, 2005 and 2010 organised in 21 regions covering the globe
- to develop a series of tools for use by specific audiences, to standardise and broaden burden of disease research and analysis, and to produce publications tailored to policymakers and a non-research audience.

As part of the first GBD Study objective, the Mental Disorders and Illicit Drug Use Expert Group aims to produce estimates of the burden of disease associated with mental health disorders and illicit drug use and dependence.

**Design & Method:** Systematic reviews of the prevalence, incidence and duration of mental health disorders and associated mortality and disabling sequelae will be conducted by the Mental Disorders and Illicit Drug Use Expert Group. Additionally, exposure and effects of risk factors will be assessed. Expert Groups will communicate their figures at defined intervals with other Expert Groups and with the Core Team to ensure consistency across conditions, and will be subjected to external peer review. NDARC is collecting data on the following drug groups: heroin and other opioids, amphetamine type stimulants, cocaine and cannabis.

**Progress:** The GBD 2010 study is now complete. Papers on mental health and substance use were published in *The Lancet* in 2013. The coordinating centre for the project, the Institute for Health Metrics and Evaluation, has published a protocol and issued a call for experts for GBD 2013 (GBD 2.0). Louisa Degenhardt will be part of the Core Analytic team for GBD 2.0.

**Output:** Seven papers were published in 2013, including three in *The Lancet*, three in *PLOS ONE*, and one in *Current Opinion in Psychiatry*.

**Funding:** NHMRC Fellowship (for Prof Degenhardt)

**Date commenced:** July 2007

**Expected date of completion:** Ongoing

### How is self-monitoring of behaviour affected in heavy drinkers?

**NDARC staff:** Dr Janette Smith & Prof Richard P Mattick

**Other investigators:** Christopher Sufani (School of Psychology, UNSW)

**Project description:** Concerns exist about the harmful effects of alcohol use on the brain. This research builds on previous research which suggests deficits in behaviour and brain function are linked to alcohol use, in particular with awareness of errors in performance, and in trial-by-trial adaptive adjustment of behaviour in line with changing requirements. This study will explore these possibilities further.

**Rationale:** Ongoing research suggests that heavier users of alcohol and other drugs are less aware of errors in performance when they occur, and that heavier users fail to adjust their performance after errors are made. Furthermore, some research suggests that deficits in control of behaviour are more pronounced in female heavy drinkers. In this study, we will examine awareness of errors and trial-to-trial adjustments in performance in more detail.

**Aims:** The study will provide new knowledge on the extent of cognitive deficits associated with alcohol use in young people, as prior research in this area focuses on users of other substances. In particular, we will examine whether male and female heavy drinkers are as aware of errors in performance as low-level drinkers, and if subsequent performance is adequately adjusted when errors are likely.

**Design & Method:** An equal number of male and female heavy drinkers and low-level drinkers, aged 18-25, will be recruited. All participants complete two computerised tasks assessing both the frequency of errors and awareness of errors, and trial-to-trial adaptations in performance and brain electrical activity measures.

**Progress:** We have recruited 66 of a required 70 participants and will finish recruitment in early May 2014. Although final results are pending, it appears that heavy drinkers indeed make more errors in task performance, and are less aware of these errors; this may relate to an increased likelihood of exceeding alcohol consumption limits, and being less aware of when these limits have been exceeded. Heavy drinkers also displayed increased trial-to-trial adjustments in performance when errors are excluded, suggesting that they require increased monitoring in order to maintain correct performance. No sex differences were apparent.

**Output:** Preliminary results were presented at the Australasian Society for Psychophysiology Conference, Nov 20-22, 2013, Wollongong.

**Benefits:** The project will provide new information about the nature and extent of cognitive deficits in heavy drinkers.

**Funding:** The work was supported by a UNSW Vice-Chancellor's Postdoctoral Research Fellowship

**Date commenced:** May 2013

**Expected date of completion:** November 2014

### Illicit Drug Reporting System (IDRS)

**NDARC staff:** Dr Lucy Burns, Natasha Sindicich, Jenny Stafford, Joe Van Buskirk, Kerryn Butler, Rachel Sutherland & David McKell

**Other investigators:** Chris Moon (Department of Health and Community Services), A/Prof Rosa Alati (University of Queensland), Dr Fairlie McIlwraith (University of Queensland), A/Prof Raimondo Bruno (University of Tasmania), Barbara de Graaff (University of Tasmania), Prof Simon Lenton (Curtin University), James Fetherston (Curtin University), Prof Paul Dietze (Burnet Institute) & Shelley Cogger (Burnet Institute)

**Project description:** The IDRS is a national illicit drug monitoring system intended to serve as a strategic early warning system, identifying emerging trends of local and national concern in illicit drug markets. The IDRS consists of three components: interviews with people who inject drugs (PWID) regularly; interviews with KEs; and analysis and examination of indicator data sources related to illicit drugs. The IDRS monitors the price, purity, availability and patterns of use of heroin, methamphetamine, cocaine and cannabis. The IDRS is designed to be sensitive to trends, providing data in a timely manner, rather than describing issues in detail.

#### Aims:

- to monitor the price, purity, availability and patterns of use of heroin, methamphetamine, cocaine and cannabis
- to identify emerging trends in illicit drug markets in Australia that require further investigation.

**Design & Method:** The IDRS analyses three main sources of information to document drug trends:

- a quantitative survey of PWID
- a semi-structured interview with KEs
- a collation of existing indicator data on drug-related issues

Data from these three sources are triangulated against each other to determine the convergent validity of trends detected. The data sources complement each other in the nature of the information they provide. Data from each year's IDRS studies are compared to

earlier findings to determine changes in drug trends over time. The strengths of the IDRS are the ability to compare data across jurisdictions as well as over time.

**Progress:** The IDRS is an ongoing project that is conducted annually in all Australian jurisdictions. In 2013, 887 PWID were interviewed across Australia, providing information on their use patterns, drug markets and related issues. KEs from a range of professions provided information on the PWID with whom they had contact. Indicator data including Australian Customs Service seizures, purity analysis, overdose and treatment data were examined.

**Output:** Six peer-reviewed papers were published in 2013 and a seventh was accepted for publication. Staff published the 2012 IDRS reports for each state and territory, as well as a national 2012 IDRS report. Preliminary 2013 IDRS findings were published in the Drug Trends Conference handout. Four IDRS bulletins and once supplement were also published in 2013.

**Funding:** Australian Government Department of Health

**Date commenced:** January 1997

**Expected date of completion:** Ongoing

### International trends over time in the prevalence and harms of alcohol and cannabis use: what is the evidence for the closing gender gap?

**NDARC staff:** A/Prof Tim Slade, Dr Cath Chapman, Zoe Tonks, Dr Wendy Swift & Prof Maree Teesson

**Project summary:** Men have traditionally reported higher rates of alcohol and other substance use than women, but there is emerging evidence that women's levels of substance use may be catching up to men's. This study involves a comprehensive review of the international literature to assess if there is evidence for a closing gender gap in the prevalence and harms of alcohol and cannabis use.

**Rationale:** Men have traditionally reported higher rates of alcohol and other substance use compared to women. This extends to other measures such as prevalence of SUDs in the population and has been reported in many countries. However, there is emerging evidence that patterns of alcohol and substance use are changing, with women reportedly catching up to their male counterparts. Such changes would have implications for research, prevention strategies and treatment models.

**Aims:** To systematically summarise the published literature on sex differences in key indicators of alcohol and cannabis epidemiology, with a particular focus on identifying if sex differences have changed over time.

**Design & Method:** The project comprises three search strategies:

- explicit examination of cohort effects
- explicit examination of gender effects
- gold standard epidemiological studies that report key indicators by sex and age (cohort).

**Progress:** An initial literature search identified 2229 relevant studies. After eliminating duplicates and applying exclusion criteria, 80 studies remained. Preliminary analyses point to a convergence in male to female rates for drinking (and binge drinking). Analyses are ongoing.

**Output:** Early findings were presented at the 2013 NDARC annual symposium.

**Benefits:** This project will provide an understanding of the changing prevalence of alcohol and cannabis use and harms over time. Sex-specific trends will be identified from which strategic recommendations regarding men's and women's drinking will be made.

**Date commenced:** January 2013

**Expected date of completion:** June 2014

### Improving GP prescribing of pharmaceutical opioids

**NDARC staff:** A/Prof Anthony Shakeshaft, Dr Briony Laranca, Toni Hordern & Prof Louisa Degenhardt

**Other investigators:** Dr Simon Holliday (Albert St Medical Centre), Dr Fiona Shand (Black Dog Institute, UNSW), Dr David Gorman (Spine Service, St George Hospital) & Dr Denis Petrie (University of Melbourne)

**Project description:** There has been very little evaluation of the effectiveness of strategies to assist GPs to manage chronic pain patients on prescription opioids, even high-risk patients. Current treatment guidelines recommend GPs establish a time-limited trial period of prescription opioids, although there have been no demonstration or evaluation trials of this approach. It is likely GPs find the routine implementation of such trial periods extremely challenging in practice, given their time and resource constraints. A recent NDARC RCT aimed at improving GP prescribing for alcohol dependence - another chronic, relapsing condition - showed that mailed, tailored feedback to GPs about their prescribing practice is a simple, low-cost strategy that significantly improves patient outcomes and appeared to reduce expensive inpatient hospitalisations for alcohol dependence. This project involves a pilot trial of these two approaches to inform a large scale RCT.

**Rationale:** Chronic pain is a common complaint, and use of prescription opioids for pain has increased an estimated 300% between 1992-2007 in Australia. Although opioids have a well-established place in the treatment of cancer-related pain, reviews have cast doubt on their long-term effectiveness for managing chronic non-malignant pain. They also cause unintended harm: 15,000 US residents die annually from an unintended overdose of prescription opioids and 5% of the US population misuse prescription opioids.

Although treatment guidelines recommend GPs and patients establish a trial period of prescription opioids, there have been no demonstration or evaluation trials. Alternatively, mailed, tailored feedback to GPs was shown in an NDARC RCT to improve GP prescribing for alcohol dependence, resulting in an annual average cost-saving to the health care system of \$21,680/hospital. This study will identify the likely feasibility, acceptability to GPs and patients, costs and effectiveness of these two approaches.

**Aims:** To conduct a pilot trial of the cost-effectiveness of two interventions to improve GPs prescribing of pharmaceutical opioids:

1. Education session describing a GP/patient trial period of prescription opioids; and
2. Mailed, tailored feedback to GPs.

The hypothesis is that the effectiveness of the interventions will be comparable, but mailed, tailored feedback will be more cost-effective because of its lower implementation costs.

**Design & Method:** This study is a pilot RCT. Four communities in NSW will be randomly selected to take part. GPs in each community will receive one of two interventions:

1. Mailed, tailored feedback will be in the form of a brief letter. It will provide concise feedback to GPs on prescribing data and evidence, including:
  - the benefits and risks of pharmaceutical opioids
  - evidence about current rates of over-prescribing of pharmaceutical opioids, modelled to their community
  - evidence-based alternatives to prescribing, including techniques for managing high-risk patients
  - a clear recommendation to reduce their prescribing of pharmaceutical opioids
2. GP Education session. GPs will be provided with a protocol (based on current guidelines) for implementing an opioid trial period with chronic pain patients. Prior to prescribing (and during opioid treatment), GPs/patients will review the likely effectiveness of the opioids against the 5A's criteria: analgesia, affect, activity, aberrant behaviours, and adverse effects. If the decision to prescribe is reached, a written agreement will be negotiated between GPs and patients, and patient progress will be monitored.

**Progress:** Data collection is currently underway: Towns A and C have received mailed interventions, and Town B has received an education session. Post-intervention data on feasibility and acceptability is currently underway.

**Output:** A poster presentation was made at the 2013 Australasian Professional Society on Alcohol and other Drugs (APSAD) conference. A final report will be presented to MHDAO in July 2014.

**Benefits:** GPs will benefit from improved knowledge and confidence in their current prescribing for, and management of, patients using pharmaceutical opioids. Policy makers will benefit from obtaining information about the likely benefits, costs and acceptability of two different approaches to improving GPs management of chronic pain patients. This information would provide them with evidence to inform their decisions about the types of programs they could provide in NSW as the anticipated epidemic of pharmaceutical opioids emerges in Australia over the foreseeable future.

**Funding:** NSW Ministry of Health

**Date commenced:** June 2013

**Expected date of completion:** October 2014

### National Illicit Drug Indicators Project (NIDIP)

**NDARC staff:** Dr Lucy Burns & Amanda Roxburgh

**Project description:** NIDIP was established in recognition of a need for the regular dissemination of trends in the epidemiology of drug-related harms in Australia. It was also established to provide comparable monitoring at an international level as there is increasing recognition among international organisations and countries of the need for evidence-based decision-making in order to respond effectively to drug-related problems, particularly given the transborder issues associated with global drug trafficking. The importance of a national and internationally comparable approach

to illicit drug-related surveillance and monitoring is highlighted by the number of countries with illicit drug data collections in place (e.g. the Community Epidemiology Working Group on Illicit Drugs in the USA and the European Union European Monitoring Centre for Drugs and Drug Addiction) as well as international efforts to coordinate global drug trends. The benefits of NIDIP then, include the enhanced dissemination of information on trends in harms related to opioid and psychostimulant use and use of prescription drugs, and a greater evidence base for the development of policy responses and interventions in relation to these harms. NIDIP also provides comparable monitoring of trends at an international level.

**Aims:** To provide epidemiological data on trends over time in drug-related harms, to complement other Australian monitoring systems such as the IDRS and the EDRS, and to improve the understanding of, and systematically track changes in, drug-related harms for both illicit and prescription drugs.

**Design & Method:** To date NIDIP has identified a comprehensive range of data sources and produced reviews of drug-related data indicators at a national level as well as within New South Wales. These indicators include information on population patterns of drug use from national surveys, data on deaths due to drug overdoses, drug-related morbidity and drug treatment data, indicators of drug purity and seizures, and drug-related crime data. Analyses of these indicators are published on a regular basis. The project currently publishes annual bulletins on drug-related deaths and drug-related hospital separations on the NDARC website, as well as a comprehensive report on trends over time in drug use and related harms across a range of data sources. These bulletins and report, along with peer-reviewed journal articles, aim to provide as comprehensive an overview as possible of trends in drug use and related harms in Australia.

**Progress:** In 2013, the NIDIP continued to access and analyse a comprehensive range of national data collections to produce trends in use and harms associated with illicit drugs in Australia. In addition, the comprehensive report on Australian trends in drug use and related harms, integrating several data sources and analyses across these data, was updated to include 2013 data (where available). Finally, an in-depth analysis of the National Coronial Information System is in progress looking at opioid-related mortality in Australia across all types of opioids.

**Output:** Three bulletins (*Cocaine and methamphetamine induced deaths in Australia 2009; Accidental opioid-induced deaths in Australia 2009; Drug-related hospital stays in Australia 1993-2011*); *Trends in Drug Use and Related Harms in Australia, 2001 to 2013*; and two peer-reviewed papers in *Drug and Alcohol Review* and the *International Journal of Drug Policy*.

**Funding:** Australian Government Department of Health

**Date commenced:** June 2002

**Expected date of completion:** Ongoing

### National Opioid Medications Abuse Deterrence (NOMAD) study

**NDARC Staff:** Prof Louisa Degenhardt, Dr Briony Larence, Prof Michael Farrell, Ivana Kihias, Toni Hordern, Elena Cama, Gabrielle Campbell, Dr Suzanne Nielsen & Prof Richard Mattick

**Other investigators:** A/Prof Raimondo Bruno (University of Tasmania), A/Prof Robert Ali (University of Adelaide), A/Prof Nicholas

Lintzeris (The Langton Centre, SE Sydney Local Health District Drug and Alcohol Services, and University of Sydney), Dr Apo Demirkol (The Langton Centre and University of Sydney), A/Prof Adrian Dunlop (Hunter New England Local Health District), Prof Paul Haber (Royal Prince Alfred Hospital and University of Sydney), Amy Peacock (University of Tasmania), Dr Nghi Phung (South West Sydney Local Health District) & Dr Nancy White (University of Adelaide)

**Advisory committee:** Dr Michael Aufgang, Nicky Bath (NSW Users and AIDS Association), Lesley Brydon (Pain Australia), Dr Malcolm Dobbin (Mental Health, Drugs and Regions Division, VIC Department of Health), Dr Angella Duvnjak (Australian Injecting & Illicit Drug Users League), Dr Marianne Jauncey (Sydney Medically Supervised Injecting Centre), Robert Kemp (Communicable Diseases Unit, QLD Health), Prof Ann Roche (Flinders University) and Dr Hester Wilson (The Langton Centre)

**Project description:** There are growing efforts by pharmaceutical companies to develop opioid formulations less prone to misuse (particularly injection), dependence and diversion to illicit markets. In Australia, the semi-synthetic opioid agonist Oxycodone is available in eight different products, the most frequently prescribed controlled release formulation being OxyContin®. An 'abuse-deterrent' (or tamper-resistant) formulation of OxyContin® tablets will be introduced onto the Australian market in April 2014. This project will examine the level of extra-medical use of oxycodone in Australia and how it compares to extra-medical use of other opioids; whether there is less non-medical use of reformulated Oxycontin®; how pharmaceutical opioid use changes following the introduction of new opioid formulations to the market; and long-term outcomes for regular non-medical users of pharmaceutical opioids.

**Rationale:** Over the past decade, professional and public concern has increased in many countries about pharmaceutical opioid use and related harms. This has been driven by increases in prescribing of these drugs. Over 1992-2007, the number of opioid prescriptions in Australia increased by around 300%. This increase in prescribing has been accompanied by increases in injection of some opioids by people who inject drugs; and increased concern about the appropriateness of prescribing these drugs for chronic non-cancer pain (CNCP). The use of opioids outside the bounds of a doctor's prescription has been cause for concern because of the risk of iatrogenic dependence, and serious adverse events including opioid overdose.

**Aims:** Specific research questions include:

1. What is the level of extra-medical use of oxycodone formulations in Australia?
2. How does extra-medical use of oxycodone compare to that of other opioids?
3. Is there less extra-medical use of abuse-deterrent opioids among regular pharmaceutical opioid users?
4. Do the individual patterns of pharmaceutical opioid use change following the introduction of new opioid formulations to the market?
5. Are tamper-resistant/abuse-deterrent formulation less attractive in the illicit market?
6. What are the long-term clinical outcomes among a group of regular pharmaceutical opioid users who report extra-medical use?

Aside from making comparisons between the old and new formulations of oxycodone, comparisons will also be made between other Schedule 8 opioids (including morphine, fentanyl, buprenorphine, methadone, tramadol, etc).

**Design and Method:**

1. Analyses of existing routine data sources, including sales and prescription data;
2. Analyses of existing data from interviews with people who inject drugs regularly (the IDRS);
3. A longitudinal cohort study of people who regularly misuse or tamper with pharmaceutical opioids who will be interviewed prior to the introduction of the new OxyContin® formulation, then 3 and 12 months post-release; and
4. Data linkage of longitudinal cohort participants (from #3), who will be asked to consent to linkage of their details with routine administrative data to examine outcomes such as opioid substitution therapy (OST) entry, hospital separations, prescriptions, health service utilisation, emergency department attendances, crime and mortality.

**Progress:** Data collection for the baseline assessment of the cohort is currently underway. The first NOMAD advisory committee meeting was held in December 2013.

**Benefits:** This study will provide novel data on the potential impact of formulations of opioids that are designed to deter tampering.

**Funding:** Mundipharma untied educational grant

**Date commenced:** September 2013

**Expected date of completion:** 2016

**Non-medical use of prescription stimulants by Australian university students: Attitudes, prevalence, and motivations for use**

**NDARC staff:** Dr Sharlene Kaye & Prof Michael Farrell

**Other investigators:** Associate Prof Jayne Lucke (University of Queensland), Dr Bradley Partridge (University of Queensland), Dr Matthew Dunn (Deakin University), Prof Wayne Hall (University of Queensland) and Dr Eric Racine (Institut de recherches cliniques de Montréal)

**Project summary:** This project examines non-medical use of prescription stimulant drugs among Australian university students. It will, for the first time in Australia, comprehensively examine attitudes, prevalence, patterns and consequences of use, and motivations for non-medical use. This study will also shed light on the use of stimulants for cognitive-enhancing purposes, whether this is a problematic trend in Australia, and what should be done to protect the health of young people in this regard.

**Rationale:** The use of prescription stimulants by university students for cognitive enhancement has been reported to be increasingly prevalent and acceptable in countries such as the United States of America. By comparison, Australia has very limited knowledge on the non-medical use of prescription stimulants by Australian university students.

**Aims:** In this project, we will:

- examine Australian university students' attitudes towards non-medical uses of prescription stimulants for cognitive enhancement purposes

- examine the prevalence of non-medical use of prescription stimulants among university students for cognitive enhancement
- examine students' motivations for non-medical use of prescription stimulants and patterns and consequences of such use
- provide recommendations about important priorities for Australian research, policy, and practice towards non-medical use of prescription stimulants for cognitive enhancement purposes.

**Design & Method:** This study is a mixed-method design consisting of three stages. The first stage involves individual interviews with university students to explore themes around attitudes, motivations, patterns, consequences, and prevalence of using prescription stimulants in a non-medical fashion. The second stage will use the data obtained from the interviews in stage 1 to inform the design of a more comprehensive survey with university students in Australia. The third and final stage of this project will be to provide recommendations about important priorities for Australian research, policy, and practice on the non-medical use of prescription stimulants for cognitive enhancement.

**Progress:** Recruitment of participants for Stage 1 is currently underway.

**Funding:** Australian Research Council (ARC) Discovery Project Grant

**Date commenced:** March 2013

**Expected date of completion:** March 2016

### Pharmaceutical opioid prescription for chronic pain in Australia: Trajectories of prescribing, risk of adverse events, and predictors of harm (The POINT Study)

**NDARC staff:** Prof Louisa Degenhardt, Prof Michael Farrell, Prof Richard Mattick, Dr Briony Larance, Dr Suzi Nielsen, Gabrielle Campbell, Bianca Hoban, Sarah Freckleton, Kimberley Smith, Ranira Moodley, Lisa Sin, Rachel Urquhart-Secord & Daniel Crook

**Other investigators:** Dr Fiona Shand (Black Dog Institute, UNSW), Prof Wayne Hall (University of Queensland), A/Prof Milton Cohen (St. Vincent's Hospital, Pain Clinic), A/Prof Nick Lintzeris (University of Sydney and South East Sydney and Illawarra Area Health) & Dr Raimondo Bruno (University of Tasmania)

**Collaborators:** A/Prof Fiona Blyth (Sydney University), Lesley Brydon (Pain Australia Limited), Elizabeth Carrigan (Australian Pain Management Association Inc.), Dr Malcolm Dobbin (Senior Medical Advisor (Alcohol and Drugs), Department of Health, Victoria), Prof Julia Fleming (The Professor Tess Cramond Multidisciplinary Pain Centre), Prof Roger Goucke (University of Western Australia), Dr Simon Holliday (Albert St Medical Centre), Denis Leahy (Pharmacy Guild of Australia, NSW Branch), A/Prof Andrea Mant (UNSW), Prof Jake Najman (University of Queensland), Dr Milana Votrubic (Avenue Road Medical Practice), Prof Jason White (University of South Australia)

**Project description:** There has been a recent increase in the prescribing of pharmaceutical opioids in Australia which has led to increasing professional and public concern about the use and harms that may be related to such use. Despite this, there is very little known about the magnitude of risk for adverse events. Previous Australian research has had limited duration (~12 weeks) and/or has not examined aberrant drug use behaviours. This is to be the first Australian study to examine the patterns of prescribing for

individual patients and the outcomes for these patients in the longer term.

**Aims:** This project will:

- examine the rates, patterns and duration of opioid analgesic prescribing across Australia
- estimate the population-level risk of adverse events among those prescribed opioids, including incidence of hospital stays, transfer to opioid substitution treatment, and mortality
- examine the natural history of opioid analgesic use in a cohort of patients prescribed opioids for chronic non-cancer pain (CNCP)
- examine the demographic and clinical predictors of adverse events among a cohort of CNCP patients, including opioid abuse or dependence, medication diversion, other drug use, and overdose
- identify factors which predict poor self-reported pain relief and other indicators of clinical outcomes.

**Design & Method:** The POINT study is a national prospective cohort that aims to follow 1500 chronic pain patients newly prescribed pharmaceutical opioids over a 24-month period. Follow-ups will occur at three months, 12 months and 24 months. The interviews will cover demographics, chronic pain, treatment, physical and mental health, physical functioning, social support and current and lifetime substance use. Participants will be recruited through pharmacies throughout Australia. We will continue to follow patients that discontinue their pharmaceutical opioid in order to examine reasons and effects of discontinuance.

**Progress:** The POINT study was approved by the UNSW ethics committee in May 2012 and National Pharmacy Guild in July 2012. Recruitment for the study began in late August 2012 and to date 1,214 participants have been interviewed for the baseline interview, 710 3-month and 106 12-month surveys have also been completed. Recruitment will finish in early 2014.

**Outputs:** In 2013 papers were published in the *Medical Journal of Australia* and *Drug & Alcohol Review* and a third paper was in press. Staff gave presentations to the NSW Pharmacy Guild Workshop (May), the National Pharmacy Guild Conference (June) and as part of the NDARC seminar series (May). A poster was displayed at the NDARC annual symposium.

**Benefits:** This project will be the first large-scale Australian prospective cohort study to rigorously examine opioid analgesic prescribing patterns amongst chronic pain patients at a population level and their relationship to important health outcomes and to mortality. This study will be the first to comprehensively examine the extent to which opioid therapy for chronic pain is associated with pain reduction, adverse events including side effects, quality of life, and mental and physical health outcomes.

The study will shed light on the extent to which patients experience problematic opioid use, some of the precursors and protective factors to problematic use, and the consequences of problematic opioid use resulting from chronic opioid therapy. It will lead to improved knowledge of dose escalation and the positive and negative outcomes for those who undergo rapid dose escalation and ultimately end up using high doses of opioid analgesics.

Currently, the evidence base for the regulation and monitoring of opioid analgesics is weak. Regulators across jurisdictions currently use different criteria for authorising long-term opioid therapy, and different criteria for identifying at-risk patients. The results of

this study will assist doctors and regulators in Australia to better identify those patients who are at risk of adverse outcomes and who therefore require alternative treatment strategies. Improved understanding of the longer-term outcomes of chronic opioid therapy will direct community-based interventions and health policy in Australia.

Finally, the project will establish a cohort of Australians with chronic health problems, and provide the groundwork for further follow-up of the sample to determine the longer-term outcomes for chronic pain patients.

**Funding:** NHMRC project grant

**Date commenced:** January 2012

**Expected date of completion:** December 2016

### Pulmonary granulomatosis amongst injecting drug users

**NDARC staff:** Prof Shane Darke & Michelle Torok

**Other investigators:** Prof Johan Duflou (Department of Forensic Medicine (DOFM), Sydney South West Area Health Service; School of Medical Sciences, UNSW; and University of Sydney)

**Rationale:** The injection of tablet preparations has increased markedly in recent years. Such behaviours may result in particles of tablet preparations becoming lodged in the pulmonary vasculature, which may result in pulmonary hypertension and heart failure.

#### Aims:

- Determine the number of cases of sudden or unnatural deaths in which pulmonary granulomatosis was diagnosed
- Determine the medical consequences of pulmonary granulomatosis

**Design & Method:** Case series. All cases presenting to the NSW DOFM between 1997-2013 were retrieved in which pulmonary granulomatosis was diagnosed.

**Findings:** Cases have been identified and data collection has commenced.

**Benefits:** Novel data on medical consequences of injecting tablets.

**Funding:** Australian Government Department of Health and NSW Health

**Date commenced:** 2013

**Expected date of completion:** 2015

### Subjective experience of withdrawal from cannabis: bush, hydro and synthetic

**NDARC staff:** Dr John Howard, Prof Jan Copeland, Dr David Allsop & Paul Dillon

**Other investigators:** Bryan Tran (Faculty of Medicine, UNSW)

**Project summary:** Cannabis is the most widely used illicit drug in Australia. There are three forms of cannabis: 'Bush': cannabis grown in an outdoor environment and thought to contain less psychoactive ingredient - THC; 'Hydro': cannabis grown hydroponically and thought to have a higher THC content; and 'Synthetic': Synthetic cannabis is not a 'true' cannabis but rather a cannabinomimetic, a synthetic substance derived to bind human cannabinoid receptors and thus mimic the effects of cannabis.

'Legal highs' first became available for purchase in the early 2000s. At first thought to contain purely herbal products, the active ingredients were subsequently identified as synthetic agonists of the CB1 and sometimes CB2 receptors. In Australia as well as many other countries, possession and sale of cannabinomimetics has been outlawed over the last 1-2 years, but enforcement is problematic due to ever-present variants that may not be captured by legislation. Despite this, the popularity of synthetic cannabis has increased. Currently, in Australia, synthetic cannabis is available for purchase online and 'under the counter', with brand names including Kronic and many others. A recent study shows that the product labels are unreliable, and it is impossible to determine what cannabinomimetic compound each product contains from the name of the brand or blend. Often products will claim to sell newer 'legal' compounds but mass spectrometry reveals that they contain the same illegal compounds as before.

**Aims:** While a quantifiable withdrawal syndrome for 'natural' cannabis has been identified, no such study has been conducted on withdrawal from synthetic cannabis in Australia or elsewhere. To date, isolated withdrawal phenomena have been published in European and American case studies only. Symptoms include drug craving, unrest, sleep disturbance, nightmares, profuse sweating, nausea and headache. Our hypotheses are that:

- a withdrawal syndrome for synthetic cannabis exists
- this syndrome of withdrawal will be symptomatically similar to that experienced by regular users of 'natural' cannabis
- because of higher synthetic THC potency, withdrawal from synthetic cannabis is more severe.

**Design & Method:** It is proposed to survey regular users of cannabis about their use of cannabis and other drugs and their subjective experience of withdrawal from cannabis. The survey includes questions pertaining to demographics, frequency and quantity of drug use and the cannabis withdrawal scale. The survey will be anonymous and will be conducted using an internet survey, hosted at NCPIC. Participants will be recruited via posts on appropriate cannabis user sites and blogs.

**Progress:** Data collection continues. Papers and a NCPIC Bulletin are in preparation.

**Output:** Presentation at 2013 APSAD conference.

**Funding:** NCPIC

**Date commenced:** November 2012

**Expected date of completion:** 2014

### Understanding the health and service needs of diverse populations of pharmaceutical opioid users: Cohort studies of dependent users in treatment, and people who inject drugs

**NDARC staff:** Dr Suzanne Nielsen, Dr Briony Larance, Prof Louisa Degenhardt, Prof Michael Farrell, Prof Richard Mattick, Dr Lucy Burns & Gabrielle Campbell

**Other investigators:** A/Prof Nicholas Lintzeris (South East Sydney and Local Health District), Prof Milton Cohen (St Vincent's Hospital, Sydney), A/Prof Raimondo Bruno (University of Tasmania), Dr Jennifer Johnson (University Centre for Rural Health, Lismore), Amanda Brown (Drug and Alcohol Clinical Services, Hunter New

England Local Health District) & Ian Flaherty (Sydney Medically Supervised Injecting Centre)

**Collaborators:** Dr Apo Demirkol (Drug and Alcohol Services, South East Sydney Local Health District), Dr Glenys Dore (Northern Sydney Drug and Alcohol Service), Prof Paul Haber (University of Sydney, Royal Prince Alfred Hospital Drug Health Services), Dr Mark Hardy (Northern Sydney Drug and Alcohol Service), Dr David Helliwell (Northern New South Wales Local Health District), Dr Simon Holliday (Drug and Alcohol Clinical Services, Hunter New England Local Health District), Jennie Houseman (Northern Sydney Drug and Alcohol Service), Stephen Ling (Drug and Alcohol Clinical Services, Hunter New England Local Health District), Paul McGeown (Northern New South Wales Local Health District), Dr Bridin Murnion (University of Sydney, Royal Prince Alfred Hospital Drug Health Services), Dr Nghi Phung (Drug Health, Western Sydney Local Health District), Dr Craig Sadler (Drug and Alcohol Clinical Services, Hunter New England Local Health District) & Dr Catherin Silsbury (Drug Health, Western Sydney Local Health District)

**Project summary:** This project will provide crucial new data on the nature and trajectories of Pharmaceutical Opioid (PO) use through the study and follow-up of two very different and yet extremely important groups of pharmaceutical opioid users: those attending treatment services for PO dependence, and people who inject drugs (PWID). These two groups are likely to account for a significant proportion of pharmaceutical opioid consumption and a disproportionate amount of harm related to pharmaceutical opioids in Australia.

**Rationale:** Incidence of pharmaceutical opioid-related problems appears to be markedly increasing in Australia, as evidenced by increases in hospital poisoning presentations for pharmaceutical opioids compared to heroin. From 1992-2007, the number of opioid prescriptions in Australia increased by around 300%. This increase in prescribing has been accompanied by an increase problematic use and opioid-related harms including hospital ED presentations. An estimated 10% of hospital AOD clinical services are for patients whose primary substance use is pharmaceutical opioids (e.g. over the counter codeine (Nurofen plus), oxycodone).

Problematic pharmaceutical opioid use is associated with significant public health burden, yet the full extent harms and outcomes amongst different populations of pharmaceutical opioid users has not been quantified in Australia. The identified harms include dependence, overdose, injection-related injuries and diseases, and mortality. Treatment needs for these groups are not well understood; demographic characteristics appear different from traditional AOD samples, there is a limited evidence base as to the effectiveness of current treatments for PO dependence, and illicit PO use may reflect unmet treatment needs. Pharmaceutical opioid users with acute and/or chronic pain present specific clinical challenges with regards to medication selection, monitoring of aberrant behaviours (e.g. poor medication control, dose escalation, diversion) and responses to non-adherence.

**Aim:** To provide the first detailed studies of two diverse groups of pharmaceutical opioid users: people seeking treatment for pharmaceutical opioid dependence, and people who inject drugs (PWID), including a three month follow up to understand outcomes and interventions that are relevant to these distinct populations of pharmaceutical opioid users.

**Design & Method:** We will recruit two cohorts of people at risk of harms from prescribed opioids: the treatment cohort will be recruited from five Local Health Districts (LHDs); the PWID cohort will be recruited through existing studies at NDARC (Illicit Drug Reporting System (IDRS) and the post-marketing surveillance studies of Suboxone Film). Measures will be recorded at baseline and three month follow-up. The assessment will include demographics, substance use including pharmaceutical opioids, alcohol, illicit use of other pharmaceuticals and other illicit drug use, side effects of prescribed opioids, aberrant drug behaviours, physical health (including pain measures), medical conditions, pain, quality of life (WHOQOL), psychosocial functioning (SF12), mental health (depression, anxiety), and health service utilisation. Descriptive statistics will be used to describe baseline characteristics of each of the cohorts. Generalised estimating equations (GEE) and/or latent growth curve modelling (LGCM) will be used to examine predict later outcomes for each cohort.

**Progress:** Baseline sample for both cohorts have been recruited with three month follow-up data now being collected, with follow-up rates above 90% in the treatment cohort, and approximately 70% in the PWID cohort.

**Output:** Conference presentation submitted

**Benefits:** This will be the first study to prospectively follow up two cohorts of PO dependent people in Australia to understand longer term patterns of use and associated outcomes for these groups.

**Funding:** MHDAO

**Date Commenced:** 2012

**Expected Date of Completion:** October 2014

### Young Australians Alcohol Reporting System

**NDARC staff:** Prof Richard Mattick, Dr Lucy Burns and Alexandra Aiken

**Other investigators:** Prof Steve Allsop (Curtin University), Prof Daniel Lubman (Monash University), A/Prof Tanya Chikritzhs (Curtin University), William Gilmore (Curtin University), Dr Belinda Lloyd (Turning Point Alcohol and Drug Centre) and Dr Tina Lam (Curtin University)

**Collaborators:** NDRI (Curtin University), Monash University

**Project description:** There is ongoing public and political concern about alcohol consumption among young people. The Australian Government has committed to preventing and intervening in intoxicated behaviour, especially among people aged under 18. In order to effectively respond to risky drinking among young people, we need enhanced information about the nature, patterns and contexts of use. Engaging with young people and ensuring their input can assist us to direct policy, prevention and treatment efforts.

This project will develop an approach that 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

- timely information on patterns of use and related problems to inform policy, prevention and treatment initiatives.

**Rationale:** Two national surveys collect data about drinking among young people, additional surveys are conducted at a local/jurisdictional level (e.g. The Young Drug Reporting System in Victoria) and other sources provide information on young people's drinking, e.g. alcohol related hospital and emergency department data and police data. However, these data sources have several limitations:

- They are not conducted annually, limiting the ability to detect trends over time and act as an early warning system.
- Much drinking by young people might be considered a 'hidden behaviour' and as such is often excluded or under-represented in mainstream data collection.
- The available data generally provide little insight into the nature/context of, location of and consequences of young people's drinking.
- There is little or no consolidation of the various sources of information about young people's drinking and associated harm.

The establishment of a young Australians alcohol reporting system will overcome these limitations and enable effective responses to and analysis of efforts to tackle risky drinking.

**Aim:** To trial a young Australians alcohol reporting system in Western Australia, Victoria and New South Wales targeting young people (16-19 years old) who are engaged in risky drinking. The project will combine information from existing data sources with annual data gathering 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
- timely information on patterns of use and related problems to inform policy, prevention and treatment initiatives.

#### **Design & Method:**

The project will involve:

- establishment of an advisory group, including young people
- review of all data sources on young people's drinking, both within Australia and overseas
- development of reporting system. The program will collect information on topics such as:
  - patterns of alcohol use
  - what they drink
  - where the alcohol is obtained/from whom
  - risks taken while 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
- recruitment: participants will be recruited using similar methods to the existing IDRS and EDRS. The aim is to target 16-19-year-olds 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. Twenty 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)

- pilot of program: It is proposed the system be implemented using the network of staff involved in the IDRS/EDRS. We plan to gather data during October-February, a potential high-risk period of alcohol consumption for young people
- refinement of system based on pilot
- collation of system information with existing data from other sources to produce final report.

**Progress:** The qualitative and quantitative interviews have been completed. Three hundred and seventy-six quantitative interviews and 70 qualitative interviews were completed across four jurisdictions (Sydney, Perth, Melbourne and Bunbury, WA). To monitor trends in risky drinking amongst young people, the study aimed to collect data on the heaviest drinking 20-25% of 16-19 year olds. The young people interviewed drank at high-risk levels regularly (more than six standard drinks per occasion at least twice a month for females and 16-17 year old males and more than 10 standard drinks per occasion at least twice a month for 18-19 year old males). Data analysis and publication of results is underway.

**Output:** Articles and bulletins are currently in preparation. These will report on high-risk drinking, alcohol-related harms, harm reduction by young people, alcohol advertising and support for policy change.

**Benefits:** This system will provide early warning of risks and changes in alcohol use and related problems that will inform prevention and other interventions targeting young at-risk drinkers. The system will also contribute to evaluation of the impact of prevention and other interventions to reduce risky drinking among young people.

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

**Funding:** Curtin University / Australian National Preventive Health Agency Preventive Health Research Grants Program Shared Grant

**Date commenced:** September 2012

**Expected date of completion:** February 2014

## PREVENTION AND EARLY INTERVENTION

### Alcohol and cannabis effects on young adults' cognitive function

**NDARC staff:** Dr Janette Smith, Prof Richard Mattick & Jaimi Iredale

**Project description:** The project examines the effects of regular alcohol and/or cannabis use on behavioural control, memory and attention processes, and on brain function in young adults.

**Rationale:** Much is known about the brain functional impacts of alcohol and cannabis use in older adults; less is known about the impacts on use among young adults. We combine powerful behavioural tests with sensitive measures of brain electrical activity; research has shown that these may index changes in brain function before they are significant enough to affect behaviour.

**Aims:** The study will provide new knowledge on the extent of cognitive deficits associated with alcohol and cannabis use in

young people, as prior research in this area focused on older, more established/dependent users or memory function alone. Our research will examine a younger cohort with less exposure to alcohol and cannabis, but who are potentially at more risk of damage to their still-developing brains. Secondly, we combine assessment of memory and executive function processes, as these are becoming increasingly important in models of the development and maintenance of substance dependence.

**Design & Method:** Participants aged 18-21 will be recruited into three groups: regular heavy drinkers, regular cannabis users, and low-level/non-drinker and non-cannabis users. All participants complete tests of memory, behavioural control, attentional control and decision-making while brain electrical activity is recorded.

**Progress:** We have recruited 77 of a required 90 participants. Data analysed so far suggests:

- impaired short term memory and impaired long-term memory for the source of information in heavy drinkers
- impaired behavioural control in both heavy drinkers and cannabis users relative to controls
- there appear to be no sex differences in impairments in behavioural control in heavy drinkers, in contrast to some previous research suggesting females were more impaired.

**Output:** Some results from the behavioural control task were published in volume 133 of *Drug and Alcohol Dependence*. Presentations were made in November 2013 to the APSAD conference (Brisbane, Queensland) and the 23<sup>rd</sup> Australasian Society for Psychophysiology conference (Wollongong, NSW). Posters were exhibited at the NDARC research symposium in September and the UNSW Brain Sciences Symposium in October.

**Benefits:** The study will provide up-to-date information about the nature and extent of deficits in non-treatment-seeking young people who have far less experience with drugs and alcohol than many participants in previous studies.

**Funding:** The work was supported by a UNSW Vice-Chancellor's Postdoctoral Research Fellowship.

**Date commenced:** January 2012

**Expected date of completion:** October 2014

### Breaking the ice: Development of an online early intervention program for people using psychostimulants

**NDARC staff:** Dr Frances Kay-Lambkin

**Other investigators:** Dr Rebecca McKetin & Dr Robert Tait (Australian National University)

**Project description:** The increased use of psychostimulants in Australia is a major concern. People using psychostimulants often do not access traditional treatment services, as their need is often greatest outside of regular office hours.

**Aims:** To develop an internet-based, brief, early intervention for psychostimulant use. The intervention will:

- Target light-moderate psychostimulant use (methamphetamine and ecstasy)
- Focus particularly on young adults (but not to the exclusion of older adults)

- Address risk factors for drug problems and provide more in-depth information and support/referral for individuals at risk
- Address the potential synergistic relationship between drug use problems and mental health disorders

**Design & Method:** A small scale evaluation of the website is planned to determine the effectiveness of the program in addressing the needs of light-moderate psychostimulant users.

**Progress:** The project was ongoing in 2013.

**Output:** A paper in BMC Psychiatry and the website [breakingtheice.anu.edu.au](http://breakingtheice.anu.edu.au)

**Funding:** Australian Government Department of Health

**Date commenced:** August 2010

**Expected date of completion:** To be confirmed

### Can parents teach their children to drink alcohol responsibly? Or, is one drop a drop too many? (Drinking and Teens project)

**NDARC staff:** Prof Richard Mattick, A/Prof Tim Slade, Dr Delyse Hutchinson, Monika Wadolowski & Alexandra Aiken

**Other investigators:** Prof Jakob Najman (University of Queensland), Associate Prof Kypros Kypri (University of Newcastle), Dr Nyanda McBride (Curtin University) & Dr Raimondo Bruno (University of Tasmania)

**Project description:** Parents can positively influence their children's alcohol use. One strategy they use is to provide their children with alcohol, believing it is the best way to teach their children how to drink responsibly. The impact of parental supply is not well understood and may be unintentionally harmful. This study will research the consequences of parental supply within the broader context of parent, child and peer relationships. It will help to determine how parental supply influences the different patterns of adolescent alcohol consumption over time, providing essential information to help parents prevent alcohol misuse in their children. Parents can play a pivotal role in prevention of alcohol misuse, but at present we don't know exactly how.

**Rationale:** Binge drinking among adolescents is currently being touted as a recent epidemic, but it is a longstanding problem which needs to be addressed. Australian parents are prepared to make a significant contribution; they believe that it is their role to teach their children when, where and how to drink. The impact of parental supply is not well understood.

**Aims:** To investigate the impact of parental supply of alcohol on drinking trajectories in Australian adolescents, including how parental supply of alcohol relates to the acceleration or deceleration of harmful drinking trajectories, and how other related factors may mediate and moderate the relationship.

**Design & method:** Using a longitudinal design, up to 1,500 parent-child dyads are being recruited from Year 7 in schools across NSW, TAS and WA. Families will be followed up every 12 months for four years, regularly completing surveys online or via mail. Surveys will address areas related to quantity and frequency of alcohol consumption (including supply, supervision and context of supply and consumption), parental modelling of alcohol use, family and peer relationships, family history of alcohol-related problems, alcohol-specific rules and access, and child mental health and

behavioural problems. Latent growth curve modelling will be used to analyse the longitudinal data.

**Progress:** 1977 families were recruited through NSW, TAS and WA schools during 2010 and 2011. Baseline data collection was completed between October 2010 and January 2012, with 97.2% of recruited participants completing a baseline survey. During October 2011 to January 2013 95% of participants completed an initial follow-up survey. The second follow-up commenced in October 2012, continuing through to late 2013. The response rate for the second follow-up is currently 91%, with non-responder follow-up continuing. The first wave of the third follow-up is currently underway, with 85% of questionnaires returned to date. The second wave of follow-up three will begin in March 2014. Preliminary baseline and first follow-up findings have been presented at several academic events and analyses are ongoing with several publications in preparation.

**Output in 2013:** A poster and presentation at the NDARC annual symposium in September.

**Funding:** ARC Discovery Project, Australian Rotary Health Mental Health Research Grant, Australian Rotary Health Whitcroft Family PhD Scholarship, Foundation for Alcohol Research & Education (FARE), Australian Federal Government Australian Postgraduate Award

**Date commenced:** September 2010

**Expected date of completion:** May 2015

### The CAP study: Combining effective universal and targeted approaches to drug prevention

**NDARC staff:** Prof Maree Teesson, Dr Nicola Newton, A/Prof Tim Slade, Katrina Champion, Natasha Nair, Dr Emma Barrett, Erin Kelly, Julia Rosenfeld, Lucie Swaffield & Dr Natacha Carragher

**Other investigators:** A/Prof Patricia Conrod (King's College University, London, UK & Department of Psychiatry, University of Montreal, Canada)

**Affiliates:** Prof Gavin Andrews (Clinical Research Unit for Anxiety and Depression, UNSW), Prof Ron Rapee (Macquarie University) & A/Prof Nick Titov (Macquarie University)

**Project description:** More than one quarter of Australian teenagers put themselves at risk of short-term alcohol-related harm at least once a month and 17% use an illicit drug at least once a year. As such, the need for prevention is clear. Although an array of school-based prevention programs exist, the majority show minimal effects in reducing drug use and related harms, and some research has even reported iatrogenic effects. Given that school-based drug prevention is the primary means by which drug education is delivered, it is essential to focus on increasing program efficacy. Ideally, preventive interventions should aim to delay onset in both adolescents with low-risk profiles who may be influenced to take up substances due to peer influence and social conformity, and adolescents with high-risk profiles whose underlying vulnerability to psychopathology can lead to substance misuse. However, no known well-implemented programs exist. The current proposal addresses this gap by developing and evaluating a comprehensive approach to preventing substance use and related harms in adolescents by combining effective 'universal' and 'targeted' school-based prevention programs. The proposed model, known as the CAP (Climate and Preventure) intervention, builds on our unique success

in this area through developing the effective universal Climate and targeted Preventure programs.

**Aims:** To modify the targeted Preventure program for use in Australia and to evaluate the effects of combining this program with the effective universal Climate Schools program (the CAP intervention) in preventing substance use and related harms in Australian adolescents.

#### Design & Method:

##### Stage 1: Modifying the targeted Preventure program for Australia

The first stage of the research was to modify the Preventure program for Australia. To do this, we conducted focus groups with students, and interviews with teachers and health professionals to ensure the content and scenarios of Preventure were relevant to Australia. They were also conducted to ensure the program was age and context appropriate and fitted within the Australian school curriculum.

##### Stage 2: Evaluation of the CAP intervention

Following the modification of Preventure, we seek to demonstrate the effectiveness of the program when combined with the Climate Schools program to make up the CAP intervention. To do this we are running a cluster RCT in 27 schools in Australia. Schools have been recruited and randomly allocated to one of four groups; the 'Control' condition, the 'Climate Schools only' condition, the 'Preventure only' condition, or the 'Climate Schools and Preventure' condition. All students will be assessed via an online self-report questionnaire at baseline, immediately-post, and 12, 24 and 36 months after baseline on their levels of drug knowledge, drug use, related harms, intentions to use drugs, and mental health.

**Progress:** The CAP study project manager and research assistant were hired in 2011 and the two research psychologists were hired in early 2012. In 2011 ethics approval was obtained from UNSW along with support from both the Catholic Education Office Sydney and the NSW Department of Education and Communities. This was the first time NDARC has obtained approval to invite NSW public schools to take part in research. As a result, over 3000 Year 8 students (aged 13-14 years) from 27 schools in NSW and Victoria (18 private and nine public schools) were recruited to take part in the CAP study.

The comprehensive CAP intervention was successfully implemented in participating schools in 2012. The universal internet-based *Climate Schools* program was delivered to approximately 1200 students by teachers. Very positive evaluations from teachers and students confirm the ease of implementation and acceptability of the program. In addition, our research psychologists delivered a total of 162 90-minute group sessions of the 'targeted' *Preventure* program to over 350 'high-risk' students. These students provided very positive feedback, with 89% reporting they found the skills they learnt were very helpful in their lives.

In 2013 we conducted the 12-month post baseline follow up surveys, and further follow up surveys will occur in 2014 and 2015.

**Output:** In 2013 one peer-review paper was published in *Drug and Alcohol Review* and a second paper accepted by *Early Intervention in Psychiatry*. Papers and posters were presented throughout the year at the APSAD Conference in Brisbane (November), the 43<sup>rd</sup> Annual Congress for the European Association for Behavioural and Cognitive Therapies in Marrakech, Morocco (September), the NDARC annual symposium (September), the 36<sup>th</sup> Annual Research Society on

Alcoholism Meeting in Orlando, United States (June), the 21<sup>st</sup> annual meeting for the Society for Prevention Research in San Francisco, United States (May) and the Australasian Society for Behavioural Health and Medicine 10<sup>th</sup> Annual Scientific Conference, Newcastle (February).

**Benefits:** It is expected that the schools who receive the combined intervention will have significantly greater reductions in substance use uptake than the schools who receive stand-alone programs or their usual health curriculum.

**Funding:** NHMRC Project Grant

**Date commenced:** January 2011

**Expected date of completion:** December 2015

### The Climate Schools Combined (CSC) study: Internet-based prevention for anxiety, depression and substance use in young Australians

**NDARC staff:** Prof Maree Teesson, Dr Nickie Newton, A/Prof Tim Slade, Dr Cath Chapman, Zoe Tonks, Louise Birrell, Dr Emma Barrett & Dr Frances Kay-Lambkin.

**Other investigators:** Prof Gavin Andrews (Clinical Research Unit for Anxiety and Depression, UNSW), Prof Pat McGorry (Orygen Youth Health Research Centre), Prof Steve Allsop (Curtin University), Dr Leanne Hides (Queensland University of Technology), Dr Rebecca McKetin (Australian National University) & Dr Jo Robinson (Orygen Youth Health Research Centre)

**Project description:** Anxiety, depressive and substance use disorders account for three quarters of the disability attributed to mental disorders. Moreover, research indicates that these disorders are often comorbid, share common risk factors and interact. The peak of these disorders occurs in those aged 15-24 years old, which also corresponds with the typical period of onset. It is therefore important that effective preventative interventions begin early, before patterns of mental health and substance use disorder symptoms are established and begin to cause disability, as well as vocational, educational and social harm.

An array of preventative interventions for these disorders currently exists, but the effectiveness of these programs is disputed. Furthermore, interventions are typically designed to target a single disorder at one time and few effective preventive programs concurrently target these common disorders. The current study aims to address this gap by evaluating an integrative approach known as the Climate Schools Combined (CSC) intervention, which includes the evidence-based universal Climate Schools Substance Use course and the universal Climate Schools Mental Health course. It is anticipated that this integrative approach will be more effective in reducing problems and symptoms associated with substance use and mental health disorders than the stand-alone interventions and standard school-based health education. The CSC study will be the first trial, internationally, to develop an integrative model for dissemination in schools across Australia

**Aims:** To evaluate an internet-based, 'universal' prevention model for anxiety, depression and substance misuse in adolescents.

**Design & method:** We seek to demonstrate the effectiveness of the intervention by running a cluster RCT in 84 schools across Australia (NSW, QLD and WA). Schools will be randomly allocated to one of four groups: the 'Control' condition, the 'Climate Schools Mental

Health course' condition, the 'Climate Schools Substance Use course' condition, or the 'Climate Schools Combined' condition. All students will be assessed via self-report questionnaires which will measure drug knowledge, drug use, related harms, intentions to use drugs and mental health related symptoms. The questionnaires will be administered at baseline, as well as six additional time points over the three-year trial.

**Progress:** The two CSC research assistants based at NDARC commenced work on the project in February 2013. Following this, the research assistants in QLD and WA were recruited. Ethics approval was obtained from universities and State and Catholic Education departments in NSW, WA and QLD. To date, we have recruited 79 schools which will commence the interventions in 2014.

**Output:** A paper has been submitted to *BMC Psychiatry*. Four conference presentations and two procedural manuals were also produced in 2013.

**Benefits:** It is hypothesised that the CSC intervention will reduce alcohol and other drug use, and reduce risk factors for anxiety and depression at significantly higher levels than existing strategies or the programs would if delivered alone. If so, this study will make a significant contribution to promoting and maintaining the good health of the community in Australia and reducing the burden of disease, social costs, and disability associated with substance abuse.

**Funding:** NHMRC Targeted mental health grant

**Date commenced:** August 2013

**Expected date of completion:** December 2016

### The CSI Study: A cluster randomised controlled trial of the internet-based Climate Schools: Ecstasy and Emerging Drugs Module

**NDARC staff:** Katrina Champion, Dr Nicola Newton & Prof Maree Teesson

**Project description:** The use of ecstasy is a public health problem associated with a range of social costs and harms. Recently, there has been growing concern about the misuse of new and emerging drugs (NEDs) designed to mimic the effects of illicit drugs, including ecstasy. Given the overlap in the age of use, risk factors and potential harms associated with ecstasy and NED use, as well as the fact that NEDs are often produced to imitate the psychoactive effects of ecstasy, it is logical to deliver prevention for these substances simultaneously. However, at present no evidence-based prevention program specifically targets ecstasy and NED use among young people.

**Aims:** To fill this gap, the CSI Study will evaluate whether an online, school-based prevention program, known as the Climate Schools: Ecstasy and Emerging Drugs Module, can address and prevent the use of ecstasy and NEDs among Australian students.

**Design & method:** We will seek to demonstrate the effectiveness of the Climate Schools program by running a cluster RCT among Year 10 students at 12 Sydney schools in 2014. Schools will be randomised to either the Climate Schools intervention (n=6) or to a control group (n=6). All students will complete a self-report survey at baseline, post-intervention and 6, 12 and 24 months after the intervention. Outcomes measured include ecstasy- and NED-related knowledge, intentions to use these substances, patterns of use of ecstasy and NEDs and a range of secondary outcomes.

**Progress:** The Climate Schools: Ecstasy and Emerging Drugs Module is currently undergoing further development before being trialled in schools in 2014. UNSW Ethics approval was granted in May and 12 secondary schools (approximately 1300 students) will participate in the study. Data collection will begin in February 2014.

**Output:** A poster at the 2013 NDARC annual symposium.

**Benefits:** To our knowledge, this will be the first trial of an internet-based program specifically designed to target ecstasy and NED use among adolescents. If deemed effective, the Climate Schools: Ecstasy and Emerging Drugs Module will provide schools with an interactive and novel prevention program for ecstasy and NEDs that can be readily implemented by teachers.

**Funding:** NHMRC - Postgraduate Research Scholarship; Australian Government Department of Health

**Date commenced:** January 2013

**Expected date of completion:** August 2016

### Development of an online portal of drug education resources for school communities

**NDARC staff:** Dr Lexine Stapinski, Dr Nicola Newton, Daniel Rodriguez & Prof Maree Teesson

**Other Investigators:** Dr Nyanda McBride & Prof Steve Allsop (Curtin University)

**Collaborators:** Australian Government Department of Health & Netfront web developers

**Project description:** Providing young people with accurate, up-to-date information and support is the best way to prevent the harms associated with drug and alcohol use. The Department of Health has identified the need for an online portal to increase school communities' access to evidence-based information and drug prevention programs. With input from teachers, parents and students across Australia, we are compiling drug education resources that are engaging, interactive, and proven to improve student wellbeing.

**Aims:** To develop, evaluate and launch an online portal to deliver information and school-based programs aimed at preventing alcohol and illicit drug use and related harms.

**Design & method:** Literature reviews, user reviews and expert consultation will be conducted to source and screen drug education resources including factsheets, videos, interactive games and apps, and evidence-based prevention programs. Additional educational resources will be developed including teacher and parent guides and training webinars. Content and web development will be evaluated with the target user groups (teachers, parents and students) and revised in response to feedback to ensure the portal is relevant, engaging, user friendly and age appropriate.

**Progress:** Content, web development and user group consultation is underway.

**Output:** The online drug education portal is currently being developed and will be made available to schools communities by the end of 2014.

**Benefits:** The online portal will facilitate access to accurate and up-to-date drug information and resources. It will assist school communities to plan and implement evidence-based drug prevention programs.

**Funding:** Australian Government Department of Health

**Date commenced:** September 2013

**Expected date of completion:** December 2014

### Impact of parental substance use on infant development and family functioning (The Triple B Study: Bumps, Babies and Beyond)

**NDARC staff:** Dr Delyse Hutchinson, Prof Richard Mattick, Dr Lucy Burns, Dr Judy Wilson, Dr Marian Shanahan, A/Prof Tim Slade, Dr Wendy Swift, Sarah Brann, Danya Braunstein, Joanne Cassar, Genevieve Eckstein, Hannah Fiedler, Maria Gomez, Ingrid Honan, Clare McCormack, Stephanie Scott-Smith & Chiara Stone

**Other investigators:** Prof Steve Allsop (Curtin University), Prof Jake Najman (University of Queensland), Prof Elizabeth Elliot (University of Sydney), Dr Craig Olsson (Deakin University), Dr Susan Jacobs (Royal Prince Alfred Hospital), Anne Bartu (Curtin University) & Lee Taylor (Macquarie University)

**Project description:** This project is an innovative Australian study of 1,600 families. The project is a longitudinal pregnancy cohort which examines a wide range of biopsychosocial factors that relate to the health and development of Australian children and families. Importantly, the project has a key focus on examining the impacts of substance use in pregnant women and their partners during the prenatal period on infant development and family functioning. The results of this study will inform public health and treatment initiatives that improve the health and wellbeing of Australian children and families.

**Aims:** This project aims to:

- identify substance use patterns in a cohort of pregnant women and their partners during the prenatal period and the characteristics associated with substance use
- To examine the relationship of maternal and paternal substance use with pregnancy outcomes for mothers and their infants
- To determine the extent to which substance use in pregnant women and their partners predicts problems in infant development (physical, cognitive, behavioural and emotional) and family functioning (marital/intimate partner relationship quality, conflict and violence, parenting behaviour and parent-infant relationship quality).

**Design & method:** This is the first large-scale Australian cohort study of the effects of substance use in pregnant women and their partners during the prenatal period on infant development and family functioning. The impact of other factors such as social support, biological factors, income, parents' emotional wellbeing, exercise, nutrition and infant temperament will also be examined. The research design involves a longitudinal pregnancy cohort study, in which 1,600 pregnant women and their partners will be recruited during the prenatal period (conception to birth). Participants will be recruited through antenatal services attached to major hospitals in NSW and WA. Participants will also be recruited through specialist AOD antenatal services. Multi-method assessments will be used including interview, questionnaire and observational assessment measures in the prenatal period, at eight weeks of age and at 12 months of age. Parents will be provided with the results of their infant's 12-month development assessment (Bayleys Infant Development Scales), which includes feedback and recommendations.

**Progress:** Over 1,600 families have been recruited through antenatal clinics at the Royal Prince Alfred Hospital, the Royal Hospital for Women and Liverpool Hospital (Sydney) and King Edward Memorial Hospital (Perth). One thousand, one hundred and sixty-five families had completed the final 12-month follow-up. This year we also followed-up families in the pilot study whose children turned three years of age (wave III follow-up of preschoolers). This was possible through the award of a Rotary Health Grant.

**Output:** In 2013 preliminary findings from the study were presented at national conferences and two papers were submitted for peer review publication in *Pediatrics* and the *Journal of Human Nutrition and Dietetics*.

**Funding:** NHMRC; Rotary Health Grant

**Date commenced:** January 2010

**Expected date of completion:** December 2014

### Substance use in pregnancy resource development project

**NDARC staff:** Dr Lucy Burns, Dr Courtney Breen & Emilie Awbery

**Rationale:** Substance use among pregnant women is a significant public health issue. A range of adverse effects have been noted including increased risk of miscarriage and still birth, reduction in fetal growth, birth defects, developmental delay, growth retardation and neurological abnormalities.

To date work in Australia has been undertaken describing the prevalence and correlates of substance use in pregnancy. Given the harms associated with substance use in pregnancy largely occur in women who are substance dependent it is timely that work now be undertaken to minimise the harms in this group.

As women are less likely to present in specialist services it is important to detect and manage women who are pregnant and dependent on alcohol and /or other drugs in non-specialist settings.

**Aims:** This project involves the development of a resource for the identification, management and, if appropriate, referral of women who are pregnant and have a substance misuse problem.

#### Design & Method:

- An audit of services currently available for women who are pregnant and substance dependent
- A literature review to identify the elements of an effective evidenced based resource for primary health care practitioners to identify, manage and if appropriate, the referral of those women who are pregnant and have a substance misuse problem
- Development of a mock-up of a resource and refining the resource through stakeholder consultation
- Consulting with stakeholders to establish strategies and settings for dissemination of the resource

**Progress:** An audit of the specialist services has been initiated and a stakeholder network has established. The literature review of effective evidenced based resources has been conducted and we are continuing to collate information on interventions to inform best practice recommendations.

The audit of specialist services has confirmed that there are few specialist services for pregnant women and mainly exist in metropolitan areas.

The literature review of effective evidence based resources has included an evaluation of existing screening tools for use by primary health care professionals. The assessment of brief and other interventions for substance using pregnant women is being collated.

The stakeholder network is scheduled to meet in March 2014 to provide input on the proposed resource.

**Output:** Draft report to be submitted in May 2014

**Benefits:** This project will provide a resource to be used in primary care to guide health professionals on evidence based identification, management and treatment of pregnant women that use alcohol and other drugs.

**Funding:** Australian Government Department of Health

**Date commenced:** July 2013

**Expected date of completion:** September 2014

### Teacher and parent illicit drug resources

**NDARC staff:** Dr Nicola Newton, Prof Maree Teesson, Daniel Rodriguez, Dr Lexine Stapinski, Tim Slade, Dr Wendy Swift, Dr Frances Kay Lambkin & Emma Black

**Other investigators:** Prof Steve Allsop, Dr Nyanda McBride & Candice Rainsford (Curtin University)

**Collaborators:** Australian Government Department of Health

**Rationale:** The Department of Health has identified the need for an illicit drugs resource package for teachers, parents and students.

**Aim:** To develop an illicit drugs resource package for use by teachers, parents and students.

**Design & Method:** NDARC and NDRI are developing an illicit drugs resource package for use by teachers, parents, and students. This includes the development of information booklets for teachers, parents and students as well as an interactive game for young people to teach them about the harms associated with illicit drugs. These resources will be made available on the NDC website and in hard copy to all high schools in Australia.

**Progress:** In 2013 focus groups were conducted with Year 10 students, parents and teachers to obtain feedback on the booklet content and design. This feedback was incorporated and the final booklets are currently in production. Student focus groups were also run to gain feedback and suggestions for the development of the interactive game to teach young people about illicit drugs and related harms. The game was completed at the end of 2013.

**Benefits:** It is envisioned that these illicit drug resources will enable parents and teachers to provide more credible and evidence-based information on illicit drugs to their children and students.

**Output:** The illicit drug resources including booklets for teachers, parents and students, as well as an interactive game for students, are in the final stages of production and will be made available in schools in 2014. A peer-reviewed paper is in press with *Drug and Alcohol Review* and a poster was presented at the NDARC annual symposium in September.

**Funding:** Australian Government Department of Health

**Date commenced:** June 2012

**Expected date of completion:** February 2014

### Update of National Drugs Campaign Website

**NDARC staff:** A/Prof Anthony Shakeshaft, Emma Black, Dr Nicola Newton, Prof Maree Teesson, Daniel Rodriguez & Prof Michael Farrell

**Project Description:** This project involves reviewing and updating the National Drugs Campaign (NDC) website and adding new information on current drug trends. The website primarily targets 15-21 year olds, aiming to increase their awareness about the negative consequences, harms and risks associated with the use of illicit drugs. Parents of 13-17 year olds are the secondary target audience.

**Aims:** To review, update and add new information in the form of factsheets.

#### Design & Method:

- Review existing content.
- Develop a template for consistency of content across factsheets.
- Review relevant documentation, including searches of the peer reviewed and other published literature from reputable sources.
- Write up-to-date factsheets.
- Expert review of all factsheets.
- Team review of factsheets.
- Submission to the Funder.

**Progress:** All factsheets have been developed and reviewed and are awaiting final sign-off from the Department of Health. Following this, the factsheets will be made available on the NDC website in 2014.

**Benefits:** Up-to-date, evidence-based information about drugs will be available to the public.

**Output:** The fifteen factsheets that are awaiting final approval cover:

- |                               |                             |
|-------------------------------|-----------------------------|
| • alcohol                     | • hallucinogens             |
| • benzodiazepines             | • heroin                    |
| • cocaine                     | • inhalants                 |
| • drugs and the law           | • ketamine                  |
| • ecstasy and pills           | • methamphetamine           |
| • emerging psychoactive drugs | • polydrug use              |
| • GHB                         | • tobacco (two factsheets). |

**Funding:** Australian Government Department of Health

**Date commenced:** August 2012

**Expected date of completion:** February 2014

## DRUG POLICY

### Alcohol consumption and health inequalities - the role of alcohol policy

**NDARC staff:** Dr Michael Livingston

**Other investigators:** Prof Robin Room (Monash University)

**Rationale:** Acute and chronic alcohol-related harms contribute substantially to the burden of disease in Australia. The relationship between alcohol and SES is less clear, with overall consumption generally higher among more advantaged sub-groups, but with harm rates often higher for disadvantaged Australians. There has been little research into the complex interplay between alcohol and health inequalities or into whether alcohol policies can contribute to lessening (or increasing) health disparities between the rich and poor in Australia.

**Aims:** To comprehensively investigate the association between alcohol and SES in Australia

**Design & Method:** This project will use existing data sources including the National Drug Strategy Household Survey (NDSHS) and the National Hospital Morbidity Dataset (NHMD) to examine trends and patterns in alcohol consumption and alcohol-related harms based on socio-economic factors. This will include, for example, examining whether the relationship between self-reported consumption levels and self-reported harms from drinking varies across the socio-economic gradient.

**Progress:** Ethics approval and approval to access the NDSHS have been granted. The initial work for the project has focused on trends and changes over time in alcohol consumption and alcohol-related harm and on examining the evidence for effects of alcohol policies on youth consumption.

**Output:** Three published journal articles and a fourth publication in press in *Addiction*. Dr Livingston has presented early work to international conferences in Uganda and Scotland.

**Funding:** NHMRC Early Career Fellowship

**Date Commenced:** February 2013

**Expected Date of Completion:** February 2017

### Centre of Research Excellence into Injecting Drug Use (CREIDU): Reducing the health, social and economic burden of injecting drug use in Australia

**NDARC staff:** Prof Alison Ritter

**Other investigators:** Prof Paul Dietze (Burnet Institute), Prof Gregory Dore (The Kirby Institute, UNSW), A/Prof Margaret Hellard (Burnet Institute), Dr Stuart Kinner (University of Melbourne), Prof Dan Lubman (Monash University), Prof Lisa Maher (The Kirby Institute, UNSW), Prof David Moore (Curtin University), Prof Robert Power (Burnet Institute) and Prof Gail Williams (University of Queensland)

**Project description:** Injecting drug use is a behaviour strongly associated with other highly marginalised characteristics such as imprisonment, blood-borne virus infections, homelessness and mental illness. This CRE draws together innovative studies about injecting drug use and provides seed funds for new projects. The Centre provides a mechanism for research translation to key stakeholders including consumers, policymakers and practitioners.

**Aims:** The aims of the CREIDU are to:

- improve understanding of injecting drug users (IDU) by building on existing studies to develop innovative research designs
- explore IDUs' use of health services, the factors that place them at risk of harm and structural and functional barriers to improved health
- identify and test new interventions
- investigate the link between reduced recidivism and health outcomes after release from prison
- determine the types and structures of services to improve IDUs' access to hepatitis C treatment, sexually transmitted infections, mental illness and drug use
- to translate research findings from the CRE into new and more effective policy and practice
- train and support promising new researchers to take on the challenges of the field.

**Design & Method:** This CRE involves a network of outstanding Australian researchers. Led by the Burnet Institute, it includes researchers from UNSW, the University of Melbourne, UQ and Curtin University. The CRE provides opportunities for postgraduate and postdoctoral students to engage in research on IDU, funds the collaborative network amongst researchers in this area and concentrates on translation of research into policy and practice. This last function is led by DPMP.

**Output to date:** New seed funded projects, policy briefs and submissions; collaborative research-practitioner networks, annual symposium.

**Funding:** Burnet Institute / NHMRC Centres of Excellence shared grant

**Benefits:** The CRE will improve the health of people who inject drugs via generating new evidence and informing public health policy and practice.

**Date commenced:** October 2010

**Expected date of completion:** September 2015

### Ongoing surveillance of the diversion and injection of the medications used in opioid substitution treatment

**NDARC staff:** Prof Richard Mattick, Prof Louisa Degenhardt & Dr Briony Laranca

**Other investigators:** A/Prof Nick Lintzeris (Sydney South West Area Health Service), A/Prof Robert Ali (Drug and Alcohol Services South Australia and Adelaide University), Dr Rebecca Jenkinson & A/Prof Paul Dietze (Burnet Institute)

**Project description:** Minimising the extent of diversion and injection of the pharmaceutical opioids used in OST reduces harms to the individual (such as dependence, injection-related injuries and diseases, and overdose) and protects the integrity of the OST program. Reports of buprenorphine or methadone injection can undermine public support for OST. This in turn may limit future investment and development, and hinder efforts to make OST more attractive and accessible.

The ongoing surveillance of the diversion and injection of the pharmaceutical opioids used in OST will build on the post-marketing studies of buprenorphine-naloxone (Suboxone® sublingual *tablets*) conducted by NDARC over the period 2006-2008. The diversion of methadone, buprenorphine and buprenorphine-naloxone (Suboxone® sublingual *film*) will be monitored using a comparable methodology.

#### Aims:

- To monitor the extent of diversion and injection of the pharmaceutical opioids used in OST
- To monitor the harms associated with the diversion and injection of the pharmaceutical opioids used in OST

**Design & Method:** The following data sources (utilised by the original post-marketing surveillance studies) will continue to be collected by the ongoing surveillance studies:

- indicators of availability of OST medications (sales/prescription data)
- interviews with regular IDU (via IDRS);
- interviews with OST clients
- interviews with key experts
- population-level indicators of injection (NSP data)

**Progress:** The project has completed its main data collections, including research interviews. Further peer-reviewed papers are currently being prepared for submission or under review.

**Output:** In 2013 a paper was accepted by *Drug and Alcohol Dependence* and presentations delivered to the Albatros Conference in Paris, APSAD, the Pharmacy Guild Workshop and as part of the NDARC in-house seminar series. Posters were presented at the CPDD Conference in San Diego and NDARC symposium.

**Benefits:** The project will allow policy makers to determine the extent of diversion and injection of pharmaceutical opioids used in OST, and therefore to make decisions to minimise these problems and the harms associated with them.

**Funding:** Reckitt Benckiser (Singapore)

**Date commenced:** October 2011

**Expected date of completion:** 2014

### Review of the drug and alcohol prevention and treatment sector

**NDARC staff:** Prof Alison Ritter, Dr Jenny Chalmers, Dr Lynda Berends, Phillip Hull, Maria Gomez & Kari Lancaster

**Project description:** This project will clarify Australian drug and alcohol treatment funding; current and future service needs; the gap between met and unmet demand; and planning and funding processes for the future. This project will deliver:

- a shared understanding of current drug and alcohol treatment funding
- a set of planned and coordinated funding processes for future Commonwealth AOD funding rounds
- documentation to inform future Commonwealth funding processes that match state/territory approaches and respond to the needs of individuals, families and their communities.

**Rationale:** The former Minister for Mental Health and Ageing, the Hon. Mark Butler MP, requested that the Department of Health (formerly Department of Health and Ageing) undertake a review of the drug and alcohol prevention and treatment services sector following the Substance Misuse Service Delivery Grants Fund and Non-Government Organisation Treatment Grants Program funding rounds that were finalised in early 2012. The department conducted an open tender process to engage a consultant to undertake the review, with a team from the Drug Policy Modelling Program (DPMP) at the UNSW, headed by Prof Alison Ritter, being the successful tenderer.

**Aim:** The Review aims to achieve:

- clarity as to the range of services currently funded by governments, their distribution and the demographic groups targeted by these services
- a common understanding amongst governments and the AOD sector of current and future service needs and where there may be service gaps, either in relation to service type, geographic area and/or demographic groups
- clarity as to the type and timing of drug and alcohol funding activities undertaken by governments
- the development of a resource/tools to help focus future government funding activities to ensure existing levels of resources (and any growth funding) are used as efficiently and

effectively as possible to deliver quality, sustainable drug and alcohol services that respond to the needs of individuals, families and communities.

**Design & Method:** Primary data collection will use rapid assessment methodology. This is a highly consultative and engaged approach to obtaining and analysing large amounts of data (both quantitative and qualitative) over a relatively brief period of time. Each state/territory health department, and NGO AOD peak bodies across the jurisdictions, will participate in the rapid assessments. The research team will source quantitative and qualitative data, analyse records, discuss and review data with the provider, and seek the perspectives of the various stakeholders and their interpretations of the data.

The rapid assessment approach provides for wide consultation as the core team is in situ with stakeholders, collecting and analysing, discussing and reviewing data as it comes to hand. Stakeholders will be contacted during the rapid assessments, including the local consumer representative bodies. Through the work with the peaks we will engage service providers. Likewise, during the rapid assessments with government, we will engage key government service providers.

In addition to documenting service types and funding sources, we will document the types of treatment provided and who receives them; we refer to this as 'met demand'. This is best completed by secondary analysis of treatment data. The datasets we are using include the Alcohol and Other Drug Treatment Services National Minimum Data Set, the National opioid pharmacotherapy statistical annual data collection, the National Hospital Morbidity Database (NHMD), and Bettering the Evaluation and Care of Health data.

We will conduct a gap analysis (difference between met and unmet demand) using the National Drug and Alcohol Clinical Care and Prevention (DA-CCP) model (NSW Ministry of Health). The DA-CCP national planning model will be invaluable in making some estimates of the unmet demand for treatment across the five drug types covered by DA-CCP (alcohol, opiates, amphetamines, benzodiazepines and cannabis).

Aboriginal services are included within the review scope. NDRI at Curtin University is undertaking this work. They will be collecting and analysing data from stakeholders across Aboriginal and Torres Strait Islander communities. The data will cover identification of gaps in current service provision, areas of unmet need, priority groups, service planning processes, and funding models/funding arrangements and contracting issues. Strengths, weaknesses and challenges across these areas will be covered. Prof Dennis Gray is leading this work.

The final report will be an analysis across all the components drawing on:

- the working papers
- the Review Advisory Committee input
- consultations throughout with governments and peak bodies, including consumer representatives
- our further analysis after all data collection is complete.

The final output will be a confidential report delivered to the Department of Health. Its release will be determined by the Department of Health.

**Progress:** Three working papers were published in 2013, enabling stakeholder input: *Working Paper No. 1: Estimating need and demand*

*for treatment, Working Paper No. 2: Planning alcohol and other drug services in rural and remote areas, and Working Paper No. 3: Alcohol and other drug treatment financing in Australia: Funding flows.*

**Output:** A final report for review and acceptance by the Commonwealth Department of Health is due mid-2014.

**Benefits:** The review provides an opportunity to detail what is occurring and establish principles for future planning, useful for all levels of government, service providers and, ultimately, the broader community.

**Funding:** Commonwealth Department of Health

**Date commenced:** July 2013

**Expected date of completion:** June 2014

### Social construction and the evidence-based drug policy endeavour

**NDARC staff:** Kari Lancaster

**Collaborators:** Supervisors – Prof Alison Ritter (DPMP, UNSW) and Prof Carla Treloar (Centre for Social Research in Health, UNSW)

**Project description:** 'Evidence-based policy' has become the catchcry of the drug policy field. A growing literature is dedicated to better realising the goal of evidence-based drug policy: to maximise the use of the best quality research to inform policy decision-making and help answer the question 'what works?' Alternative accounts in the policy processes literature conceptualise policy activity as an ambiguous and contested process, and the role of evidence as being only marginally influential. Multiple participants jostle for influence and seek to define what may be regarded as a policy problem, how it may be appropriately addressed, which participants may speak authoritatively, and what knowledge(s) may be brought to bear. The question posited within this project is whether the conceptual shift offered by thinking about policy activity as a process of social construction may be valuable for beginning to explore different perspectives of the evidence-based drug policy endeavour. Within a constructionist account of policy, what counts as valid 'evidence' will always be a constructed notion within a dynamic system, based on the privileging and silencing of participants and discourse, and the contestation of those many positions and perspectives. The social construction account shifts our focus from the inherent value of 'evidence' for addressing 'problems' to the ways in which policy knowledge is made valid, by whom and in what contexts. As such, social construction provides a framework for critically analysing the ways in which 'policy-relevant knowledge' may not be a stable concept but rather one which is constructed through the policy process, and, through a process of validation, is rendered useful. We have limited knowledge in the drug policy field about how this happens; how ambiguity about the problems to be addressed, which voices should be heard, and what activities may be appropriate are contested and managed.

**Aims:** This project will explore the following research questions:

- What is the nature of 'evidence' and how is policy knowledge validated within drug policy processes?
- How do a multiplicity of knowledge(s) and voices come to bear on drug policy processes?
- To what extent does the construction and representation of drug policy problems affect the choice of and privilege given to different types of knowledge and voices in drug policy processes

(and to what extent does this privileging in turn contribute to the construction and representation of drug policy problems)?

**Design & Method:** An empirical multiple-case study design with multiple qualitative data analysis methods will be utilised to compare the development of three drug policy issues (opioid overdose prevention and management strategy, 'New Recovery' and drug treatment, and approaches to extend distribution of injecting equipment through peer networks). This research design allows for extensive analysis of drug policy development processes within individual cases, as well as across cases. The multiple-case study approach will follow a replication logic, whereby conclusions will be drawn from each individual case and then subsequently compared and analysed across the other cases.

**Benefits:** By unpicking the values and assumptions which underlie drug policy processes, how problems are constructed and represented, and the ways in which different voices and knowledge(s) come to bear on that process, we may begin to see avenues for reform which are not yet obvious.

**Funding:** Kari Lancaster is a recipient of an Australian Postgraduate Award.

**Date commenced:** March 2013

**Expected date of completion:** 2016

### Trafficking in multiple commodities: Exposing Australia's poly-drug and poly-crime networks

**NDARC staff:** Dr Caitlin Hughes & Dr Jenny Chalmers

**Other investigators:** Dr David Bright (Faculty of Arts and Social Sciences, UNSW) & Dr Michael McFadden (McFadden Consultancy)

**Rationale:** It has been long recognised that illicit drug traffickers can and do trade in multiple drugs. For example, more than 10 years ago, Australian law enforcement agencies highlighted the "convergence of criminal networks and, concomitant to this, poly-drug trafficking" and the challenges this might bring to drug law enforcement and the broader community (Gordon, 2001, p. 22). Nevertheless, research and policy tend to focus on single illicit drug markets alone, and the extent, nature and implications of an inter-connected marketplace remain poorly understood. In light of increasing evidence that poly-drug traffickers are more resilient, adaptable and harmful than their mono-drug counterparts, this project will examine Australia's poly-drug and poly-crime traffickers.

**Aims:** In this project we aim to:

- explore how product diversification is managed in high-level Australian multi-commodity drug trafficking networks, including inter-sections between drugs (heroin, methamphetamine, cocaine, precursors etc) and between crimes (drugs, money laundering, illegal firearms etc)
- estimate the proportion of Australian traffickers connected with high level importation of more than one drug, and any changes in the extent and nature of Australian poly-drug importations over the past 14 years
- generate and compare profiles of Australian poly-drug traffickers and mono-drug traffickers, including their potential harmfulness to the Australian community
- build research and law enforcement expertise to tackle Australian poly-drug commodity traffickers.

**Design & method:** Three distinct but complementary approaches will be used to examine these issues:

- Social network analysis of national high-level poly-drug and poly-crime trafficking networks
- Trend analysis of Australian Federal Police (AFP) aggregate data on illicit drug/precursor importations from 1999-2012
- Quantitative and qualitative analysis of AFP unit record data to examine differences between Australian poly-drug and mono-drug trafficking networks, including network size, value of imports and extent of links with organised crime.

**Progress:** Three different Australian poly-drug and poly-crime networks have been selected in consultation with our law enforcement advisors. A series of network maps has been constructed, covering the entire network and sub-networks within each (by drug/crime). Each map has been analysed to locate key nodes in poly-drug and poly-crime networks and the level of overlap in players across sub-networks.

AFP data covering all high-level drug importations from 1999-2012 have been extracted and are subject to ongoing analysis. Analysis will be completed in 2014, at which point a report will be submitted to the National Drug Law Enforcement Research Fund (NDLERF).

**Benefits:** This study will provide the first systematic examination of the extent and nature of poly-drug and poly-crime trafficking in Australia and the implications for policing this form of trafficking.

**Funding:** NDLERF

**Date commenced:** April 2013

**Expected date of completion:** June 2014

### 'Trafficking' or 'personal use': Do regular drug users understand Australian drug trafficking laws?

**NDARC staff:** Dr Caitlin Hughes & Prof Alison Ritter

**Other investigators:** Nicholas Cowdery (Faculty of Law, UNSW)

**Rationale:** Most Australian states and territories have adopted legal thresholds for drug trafficking, over which possession of an illicit drug is deemed 'trafficking' as opposed to 'personal use'. Yet the extent to which regular drug users understand the laws and their implications has been subject to limited academic scrutiny.

**Aims:** This project will explore regular drug users' levels of awareness and accuracy of knowledge about drug trafficking laws across Australia, taking into account different populations of users and different legal contexts.

**Design & Method:** User perceptions about legal thresholds for trafficking will be assessed amongst two national samples of Australian regular drug users - participants in the 2012 EDRS and 2012 IDRS. Perceptions will then be compared against the current drug trafficking laws and drug use behaviour. We will then assess perceptions about legal thresholds amongst a broader population of Australian police detainees, using the 2013 Drug Use and Monitoring in Australia (DUMA) survey.

**Progress:** Analysis of the IDRS and EDRS samples is complete. This revealed some clear gaps in knowledge. For example, amongst the IDRS sample of people who inject drugs regularly, most were aware that the quantity possessed would affect the charge received, but many either failed to nominate any specific quantity that would constitute an offence of supply or nominated a quantity that was

larger than the actual quantity for a supply offence. Our analysis revealed levels of knowledge were higher in the EDRS sample. Across both samples, poor legal knowledge was associated with higher risk purchasing patterns.

Analysis of the DUMA sample will occur in 2014.

**Benefits:** This work will provide insight into the extent to which there is a need to increase awareness of drug trafficking laws amongst all/particular populations of regular drug users.

**Output:** Dr Hughes presented preliminary findings at the NDARC annual symposium (September 2013). Papers are under review.

**Funding:** Colonial Foundation Trust

**Date commenced:** October 2012

**Expected date of completion:** December 2014

### Trends and predictors of public opinion towards drug policy in Australia 2001-2010

**NDARC staff:** Dr Francis Matthew-Simmons, Dr Matthew Sunderland, Prof Alison Ritter

**Project description:** This project seeks to provide an evidence-based understanding of public opinion towards drug policy in Australia by analysing empirical survey data. This review is designed as an update and extension to a previously published work: Matthew-Simmons, F., Love, S. and Ritter, A. (2008). Monograph No. 17: A review of Australian public opinion surveys on illicit drugs. *DPMP Monograph Series*. Sydney: National Drug and Alcohol Research Centre.

**Aims:** The aims of this review are to:

- identify the current state of public opinion in relation to alcohol, tobacco, and illicit drugs
- determine how public attitudes have changed over time
- reveal the most significant intra-individual predictors of attitudes towards drug policy.

**Design & Method:** The project analyses four waves of the NDSHS, examining a range of attitudinal questions relating to concern over drug use, drug law reform, and a range of different policy interventions. Trends over time are examined, as well as demographic predictors in the 2010 survey.

**Progress:** Findings show that:

- There has been a notable increase in public concern over alcohol use between 2001 and 2010. However, this has not been reflected in any large-scale changes in attitudes towards alcohol policy; there has been increased support for regulations that already exist (e.g. increased penalties for drink driving), but little support for an increase in alcohol price/taxation.
- attitudes towards cannabis use and cannabis policy are largely stable over this time frame, with a minority supporting cannabis legalisation but a majority opposing criminal penalties for cannabis possession.
- Public support for harm reduction interventions such as needle & syringe programs and regulated injecting rooms remains high.

**Output:** Interim results were published in DPMP Monograph 21: What does the research evidence tell us about what Australians think about the legal status of drugs?

**Funding:** Colonial Foundation Trust

**Benefit:** The project will provide accurate information regarding Australian public opinion towards AOD policy, and how opinions have changed during the past decade. This will give policymakers an evidence-based understanding of the public's views.

**Date commenced:** March 2012

**Expected date of completion:** December 2014

## INDIGENOUS

### Intervention trial to reduce alcohol related harms among high-risk young Indigenous Australians

**NDARC staff:** A/Prof Anthony Shakeshaft & Alice Knight

**Other investigators:** Dr Anton Clifford (University of Queensland), Prof Komla Tsey (James Cook University), Prof Christopher Doran (University of Newcastle), A/Prof Melissa Haswell-Elkins (School of Public Health and Community Medicine, UNSW), A/Prof Myfanwy Maple (University of New England) & Dr Kathy McKay (University of New England)

**Collaborators:** Bernie Shakeshaft (BackTrack, Armidale), Jen Kealey (BackTrack, Armidale), Ailsa Lively (Gindaja Treatment and Healing Centre, Yarrabah) & Michelle Singleton (Gindaja Beat da Binge project, Yarrabah)

**Project description:** Indigenous Australians experience disproportionately high rates of AOD harms and young people are particularly vulnerable: over 50% of 10-17 year old juvenile detainees are Indigenous, despite comprising only 2% of the population. There is no reliable evidence about which interventions might reduce these harms. This study investigates the outcomes, and quantifies the benefit-cost, of a complex, multi-component intervention that combines cognitive-behaviour therapy with a community-reinforcement strategy to reduce substance-related harms among high risk young Indigenous Australians.

**Rationale:** Despite the disproportionately high burden of physical, social and psychological drug and alcohol harms borne by young Indigenous Australians, there is very little evidence from rigorous intervention trials as to which strategies are most beneficial for reducing them. However, early findings from overseas studies suggest that complex, multi-component interventions that focus on different aspects of complexity in a young person's life at the individual, family and community levels are most effective in reducing risk behaviours in high-risk young people. Information resulting from an evaluation of a complex, multi-component intervention that combines aspects of cognitive behavioural therapy (individual focus) and an Aboriginal-specific community empowerment program for reducing alcohol and drug related harms in high risk young Indigenous Australians (family and community focus) will make an invaluable contribution to the development of an effective intervention model for high-risk young Indigenous Australians.

**Aims:** This study aims to determine the outcomes, and estimate the benefit-cost of a complex, multi-component intervention that combines cognitive behavioural therapy and an Aboriginal-specific community empowerment program for high risk young Indigenous Australians. It is hypothesised that the benefits of this multi-component intervention will outweigh the costs.

**Design & Method:** An existing complex, multi-component intervention (BackTrack) which combines components of the Adolescent Community Reinforcement Approach and Family Well Being therapy will be examined and evaluated. Baseline data will be collected in the communities of Tamworth (NSW) and Yarrabah (QLD), followed by implementation of the BackTrack intervention and post-test data analyses. The implementation of the intervention will be staggered across the communities by six months and the order of implementation determined randomly. Qualitative data will also be collected to assist with understanding participant perceptions of the intervention and to investigate the contextual issues that are most pertinent to its impact.

**Progress:** To date, baseline and three-month follow-up surveys have been completed in Tamworth, and analysis of the data is in progress. Six-month follow-up surveys will be implemented in February 2014. To assist with implementation of the survey, an electronic version has been designed which can be completed by program participants on laptop, tablet or mobile phone. Qualitative interviews with program graduates have been conducted, and further interviews are planned with current program participants within the next six months. Consultation and planning for implementation of the program in Yarrabah has commenced.

**Output:** Alice Knight is in the process of drafting several papers for submission to peer-reviewed journals later in 2014. These will present the results from the self-reported data. She is also collaborating on a paper with BackTrack staff and University of New England academics that will describe the BackTrack program.

**Benefits:** Through the development of a more effective and acceptable intervention model for high-risk young Indigenous Australians, this research has the potential to not only prevent risks and harms amongst young people but to promote positive developmental outcomes. It also promises high returns to communities across the life trajectory of the young person through improved productivity and reduced costs, primarily from reduced welfare payments, health and legal costs.

**Funding:** NHMRC

**Date commenced:** January 2013

**Expected date of completion:** December 2015

## CRIMINAL JUSTICE SYSTEM

### Attitudes of injecting drug users towards threshold quantities for drug trafficking in NSW and SA

**NDARC staff:** Dr Caitlin Hughes & Prof Alison Ritter

**Other investigators:** Nicholas Cowdery (Faculty of Law, UNSW)

**Collaborators:** NSW Users and AIDS Association (NUAA)

**Project description:** Legal threshold quantities for drug trafficking are used in most Australian jurisdictions to define the quantity over which possession of an illicit drug is deemed 'trafficking' versus 'personal use' (Hughes, 2011). Forthcoming research (Hughes, Ritter, Cowdery, & Phillips, in press) evaluated trafficable threshold quantities across six Australian states and concluded that some threshold quantities may need to be elevated as existing trafficable thresholds place particular groups of people who inject drugs (PWID) at risk of unjustified sanction. Discussions with policymakers have highlighted concerns that any reform may lead to adverse

effects. There has been no research on this topic to date. This research involves conducting focus groups with PWID (and people who both inject and deal drugs) in the two states that were found most in need of reform (NSW and SA) in order to explore their perceptions of existing laws and anticipated effects (if any) of reforming threshold quantities.

**Aims:** The specific objectives of this project are to explore:

- attitudes towards existing threshold limits in NSW and SA amongst two populations who inject drugs (PWID and people who both inject and deal drugs), and perceptions of the benefits, costs and impacts of thresholds (e.g. on use, purchasing and dealing behaviour)
- perceptions of likely effects if threshold quantities were modified in NSW and SA, including impacts (if any) on use, purchasing and dealing behaviour
- differences (if any) in anticipated effects by state (NSW vs SA) and population (PWID and people who both inject and deal drugs).

**Design & Method:** Focus groups will be conducted with PWID in NSW and SA. We will conduct two to three focus groups per state, including one or two with PWID and one with people who both inject and deal drugs in each state (recruitment permitting).

**Progress:** Focus groups will take place at the end of 2013 and early 2014.

**Benefits:** This research will provide the first evidence about the likely effects of reforming current drug trafficking thresholds. If our hypotheses are supported, this should negate or mitigate a feared outcome from reform. As such, this project affords the unique opportunity to feed into the policy processes surrounding drug trafficking thresholds and increase the likelihood of evidence-informed policy translation.

**Funding:** CREIDU

**Date Commenced:** September 2013

**Expected Date of Completion:** April 2014

### Determining the impact of opioid substitution therapy upon mortality and recidivism among prisoners: A 22-year data linkage study

**NDARC staff:** Prof Louisa Degenhardt, Prof Michael Farrell, Prof Richard Mattick, Dr Lucy Burns, Dr Natasa Gisev, Dr Jo Kimber, Dr Sarah Larney & Dr Marian Shanahan

**Other Investigators:** Dr Don Weatherburn (NSW Bureau of Crime Statistics and Research), Prof Tony Butler (The Kirby Institute, UNSW), Prof Christopher Doran (University of Newcastle), Dr Amy Gibson (University of Western Sydney) & Dr Timothy Dobbins (Australian National University)

**Collaborators:** NSW Aboriginal Health and Medical Research Council, Australian Institute of Health and Welfare, NSW Bureau of Crime Statistics and Research, NSW Corrective Services, NSW Health

**Rationale:** Prisoners experience very high rates of drug dependence, health problems and premature mortality. Without intervention they are highly likely to come into further contact with the criminal justice system, creating further health risk. Opioid dependence is a common problem among prisoners, and OST (with methadone and buprenorphine) for opioid dependence may be an effective intervention in preventing this morbidity/mortality and re-offending.

This research will quantify, for the first time, the population-level impact of OST (methadone or buprenorphine) on two important outcomes for opioid-dependent prisoners: (a) mortality, particularly in the post-release period; and (b) subsequent criminal activity. This work builds on our successful previous research project (NHMRC 455451) examining overall mortality among OST recipients. Although successful in determining the association between mortality and OST overall, we were unable to examine (a) and (b) among prisoners in our previous work because admission, retention and discharge from prison could not be ascertained from the databases examined.

**Aims:** To examine:

- the impact of OST provision in prison, and following release, upon prisoner mortality
- the extent to which OST reduces incidence and time to re-offence among opioid dependent persons, stratified by crime type
- potential differences in the impacts of buprenorphine and methadone upon the extent and timing of re-incarceration
- differences in duration of OST, and its impact on crime and mortality, among vulnerable subgroups including Aboriginal and Torres Strait Islanders and women
- estimated years of life lost (YLL) to prison in the cohort, and potential impact of OST in reducing YLL
- cost savings of OST provision in reducing crime and imprisonment among this group
- circumstances of deaths occurring in prison or immediately post-release.

**Design and method:** This study uses a retrospective cohort design with data linkage.

The base cohort comprises all NSW OST registrants between 1985 and 2010, an estimated 47,500 people and 580,000 person-years (py) of follow-up. Information on treatment, prison and re-offending histories and deaths in the cohort during this period will be ascertained via linkage of the following databases:

- Pharmaceutical Drugs of Addiction System (PHDAS) - Pharmaceutical Services, NSW Health
- Offender Integrated Management System (OIMS) - NSW Department of Corrective Services
- Reoffending Database (ROD) - NSW Bureau of Crime Statistics and Research (BOCSAR)
- National Death Index (NDI) - Australian Institute of Health and Welfare (AIHW).

The linkage will be undertaken by two third-party agencies: AIHW (linking PHDAS and NDI) and the Bureau of Crime Statistics and Research (linking PHDAS, OIMS and ROD). NDARC receives de-identified datasets for analysis.

Established bio-statistical techniques will be used to calculate:

- crude offending/mortality rates and standardised offending/mortality ratios
- survival and mortality risk factors in and out of prison
- time-to-event and risk factors for OST drop-out with prison duration as a time-dependent covariate
- time to event and risk factors for re-offending with OST duration as a time-dependent covariate
- cost savings of OST in prison through reduced recidivism.

**Progress:** All data for this project has been linked and we are currently undertaking the various analyses outlined above.

The first of our analyses described the rates of the offending and estimated the costs of court appearances using a cohort of 48,069 opioid-dependent people in contact with the criminal justice system in NSW between 1993 and 2011. A total of 638,545 charges were laid against cohort members over the study period. Eight in 10 males (79.7%) and 67.9% of females had at least one charge; rates were 94.15 per 100 py (95% confidence interval (CI) = 93.8994.41) among males, and 53.19 per 100 py (95% CI = 52.91-53.46) among females, and highest at 15-19 years (175.74/100 py males (95% CI = 174.45-177.03), 75.60/100 py females (95% CI = 74.46-76.76)) and 20-24 years (144.61/100 PY males (95% CI = 143.70-145.53), 84.50/100 py females (95% CI = 83.53-85.48)). The most frequent charges were theft (24.5% of charges), traffic/vehicle (16.3%), offences against justice (10.5%), illicit drug (10.0%), intentional injury (9.9%) and public order offences (8.9%). Overall, 20.8% of the cohort accounted for 67.4% of charges. The most frequently appearing 5.6% of the cohort accounted for 24.3% of costs (\$75.5 million).

Following on from this, we also examined episodes of incarceration and time spent in custody among opioid-dependent people between 2000 and 2012 (n=47,196). Among the cohort, 37% (43% of men and 24% of women) had at least one episode of incarceration lasting one or more days. Men had a median of three (ranging between 1 and 47) incarcerations, and women, two (ranging between 1 and 35). Indigenous men spent 23% of follow-up time incarcerated, compared with 8% for non-Indigenous men; similarly, Indigenous women spent a substantially greater proportion of time incarcerated than non-Indigenous women (8% vs. 2%). Costs of incarceration of this cohort between 2000 and 2012 totalled nearly AUD\$3 billion.

**Output:** Two peer-reviewed papers were published in 2013, in *Addiction* and the *Australian and New Zealand Journal of Public Health*. In addition, the team presented five papers and three posters throughout the year.

**Benefits:** This project will fill a critically important gap in the literature with respect to identifying strategies to improve the health and welfare of Australian prisoners - a marginalised group that places considerable costs on society. Specifically, use of linked data over a 22-year period, with almost 600,000 person years of follow-up, presents a unique opportunity to determine the effectiveness of OST in reducing premature mortality and criminal behaviour among opioid-dependent prisoners. This evidence cannot be obtained with accuracy from small studies or RCTs. This study results will have clear implications for the health of this population and will provide evidence of potential health and crime reduction gains and the cost savings that might result.

**Funding:** NHMRC Project Grant; Australian Institute of Criminology through the Criminology Research Grants Program

**Date Commenced:** January 2011

**Expected Date of Completion:** December 2014

### Illicit drug trafficking: the structure of illicit networks and implications for resilience and vulnerability

**NDARC staff:** Prof Alison Ritter

**Other investigators:** Dr David Bright (School of Social Sciences, UNSW), Dr Catherine Greenhill (School of Mathematics and Statistics, UNSW) and Prof Carlo Morselli (University of Montreal)

**Project description:** The overall aim is to examine the structure of illicit networks (drug trafficking networks) to determine areas of vulnerability and resilience. The project aims to improve existing knowledge and empirical accounts of criminal networks by employing an innovative multi-level analytic approach which incorporates structural factors, node positing effects, links between nodes, and node-level or individual factors.

**Design & Method:** There are two phases to this research: social network analysis to describe and map the criminal network, and simulation modelling to test the impact of a range of law enforcement interventions.

**Progress:** Data collection and analysis are complete. Law enforcement simulations are in progress.

**Output:** Papers were presented at five conferences in 2013.

**Funding:** ARC Discovery Project

**Benefit:** The results will shed light on poorly understood drug trafficking network phenomena using intersecting methodologies from the social sciences and mathematics, and have the potential to lead to enhanced law enforcement capacities for detecting and dismantling these networks.

**Date commenced:** January 2012

**Expected date of completion:** TBC

### Maximising treatment participation among heroin users released from prison

**NDARC staff:** Dr Sarah Larney

**Other investigators:** Prof Josiah Rich (Brown University, United States)

**Collaborators:** Rhode Island Department of Corrections (United States)

**Rationale:** Inadequate research attention has been given to the issue of continuity of OST as an individual moves between prison and the community. Heroin users are typically released from prison multiple times over a heroin use career, and the post-release period is a time of significant morbidity and mortality. Dr Larney's PhD research demonstrated that positive impacts of prison OST are seen only as long as an individual remains in treatment in the community. However, post-release treatment entry and retention is usually poor. Increasing rates of post-release treatment entry and retention should reduce the risk of relapse to regular heroin use and associated morbidity and mortality.

**Aims:** To determine how best to deliver OST in prisons so as to maximise post-release treatment entry and retention.

**Design & Method:** Data will be sourced from Prof Josiah Rich's existing research projects and administrative datasets. Groups receiving OST under different service delivery models will be compared on post-release treatment entry and retention, heroin and other drug use, reincarceration and mortality.

**Progress:** Data collection has been completed and a paper describing the main outcomes is being prepared.

**Funding:** NHMRC Early Career Fellowship (1035149); United States National Institutes of Health project grants (Prof Rich)

**Date commenced:** March 2012

**Expected date of completion:** March 2014

### Patient motivations, perceptions and experiences of opioid substitution treatment in prison

**NDARC staff:** Prof Kate Dolan, Dr Sarah Larney & Natasha Sindicich

**Other investigators:** Dr Deborah Zador & Dr Sandra Sunjic (Justice Health and Forensic Mental Health Network)

**Project description:** How prisoners view and experience OST is poorly understood; this project was designed to fill that gap through an investigation in NSW prisons.

**Rationale:** An improved understanding of patient motivations and experiences of OST will provide information to improve clinical service delivery.

**Aims:** We aim to describe:

- opioid treatment program activity in NSW correctional centres
- patient experiences of being in OST while in prison.

**Design & Method:** This study is using a combination of qualitative (patient interviews) and quantitative (analysis of program data) methods.

**Progress:** Qualitative interviews are underway and program data have been obtained.

**Funding:** Justice Health and Forensic Mental Health Network

**Date commenced:** January 2012

**Expected date of completion:** December 2014

### Review of HIV in Prison: prevalence, incidence, mortality and service provision

**NDARC staff:** Prof Kate Dolan

**Collaborators:** Babak Moazen, Atefeh Noori, Shadi Rahimzadeh and Farshad Farzadfar (Tehran University of Medical Sciences, Iran) & Fabienne Hariga (United Nations Office on Drugs and Crime, Austria)

**Aims:** To collate data for all countries on the following variables: imprisonment rates, HIV prevalence among male, female, PWIDs, MSM, sex workers and transgender prisoners, HIV incidence and transmission in prison, AIDS mortality in prison, and the provision of eight HIV programs and seven HIV related services for prison inmates.

**Design and Method:** Information was obtained from a comprehensive systematic review of published and grey literature and from a survey of key experts in UN agencies. Data from the period January 2008 to April 2013 were included. Drug dependence treatment was recorded for OST only.

**Progress:** A report is being finalised.

**Funding:** UNODC

**Date commenced:** 2013

**Expected date of completion:** December 2013

## INTERNATIONAL

### Epidemiology of hepatitis C virus in Pennsylvania state prisons

**NDARC staff:** Dr Sarah Larney

**Other investigators:** Dr Timothy P Flanigan and Madeline Mahowald (Brown University and The Miriam Hospital) & Dr Nicholas Scharff (Pennsylvania Department of Corrections)

**Project description:** This project will use HCV surveillance data to describe the epidemiology of the hepatitis C virus (HCV) among people incarcerated in state prisons in Pennsylvania, United States.

**Rationale:** HCV is endemic amongst prisoners, but there are few recent epidemiological data on HCV among prisoners in the USA. Such data are urgently needed to inform prevention and treatment efforts in correctional settings.

**Aim:** To describe the epidemiology of HCV among Pennsylvania state prisoners.

**Design & Method:** Pennsylvania is one of few states to undertake routine HCV antibody (anti-HCV) testing of all people entering state prisons. Data for the years 2004-2012 will be analysed to identify epidemiological trends in anti-HCV prevalence in this population.

**Progress:** 18% of Pennsylvanian state prisoners were anti-HCV positive. Women were nearly twice as likely as men to be anti-HCV positive. Although anti-HCV prevalence was highest in prisoners born prior to 1960, most anti-HCV positive prisoners were younger. Anti-HCV prevalence in prisoners is decreasing with time.

**Output:** A paper has been submitted to the *American Journal of Public Health*, and abstracts have been accepted for presentation at two 2014 conferences: the Conference on Retroviruses and Opportunistic Infections, Boston, and the Academic and Health Policy Conference on Correctional Health, Houston.

**Benefits:** The findings of this project will inform prison HCV screening and treatment policies and clinical practices.

**Funding:** Sarah Larney is supported by a NHMRC Early Career Fellowship.

**Date commenced:** June 2013

**Expected date of completion:** December 2014

### Program of International Research and Training (PIRT)

**NDARC staff:** Prof Kate Dolan, Prof Michael Farrell & Dr David Allsop

**Other investigators:** Dr Alex Wodak (Australian Drug Law Reform Foundation)

**Project description & aims:** To facilitate research and training to minimise the harms from drug use and to increase the effectiveness of drug treatment internationally.

#### Design and Method:

- Build capacity into research in drug treatment within developing countries
- Build capacity for monitoring drug use and drug problems in developing countries
- Build alliances between Australia and developing countries in terms of understanding drug trends and law enforcement
- Encourage policy relevant research consistent with national strategies and cultures.

**Progress:** PIRT has undertaken a review of HIV in prisons for the UNODC.

**Output:** Report on HIV in prisons.

**Funding:** UNODC Vietnam, UNODC Myanmar and UNODC Head Office

**Date commenced:** 2003

**Expected date of completion:** Ongoing

## HEALTH ECONOMICS

### The cost-effectiveness of antiretroviral treatment expansion strategies in Vietnam

**NDARC staff:** Dam Anh Tran & A/Prof Anthony Shakeshaft

**Other investigators:** Prof Chris Doran (University of Newcastle), Prof Peter Hill (University of Queensland), Dr Anh Duc Ngo (University of South Australia), A/Prof David Wilson (UNSW) & Dr Lei Zhang (UNSW)

**Rationale:** In 2000, a national commitment was made to expand access to antiretroviral HIV treatment (ARVs) in Vietnam. However, the number of patients infected with HIV in need of ARVs has far exceeded the supply. Little work has been done on the cost and effectiveness of ARV treatment in Vietnam.

**Aim:** This PhD research examines the costs and benefits of providing ARV treatment in Vietnam. It covers structural determinants of access to treatment, the cost-effectiveness of commencing ARV treatment at different thresholds and the characteristics of patients who are lost to follow up.

**Design & Method:** The research uses a series of economic models to explore different aspects of the cost-effectiveness of treatment.

**Output:** To date, three papers have been accepted for publication in international peer-reviewed journals. Dam Anh Tran presented her work at the International AIDS Conference in Washington DC in 2012, and International AIDS Society Conference in Kuala Lumpur in 2013. A further two papers will be submitted in early 2014.

**Benefits:** The findings of the project will strengthen the evidence base required to develop appropriate and effective ARV treatment in Vietnam.

**Funding:** AusAID International Postgraduate Award, VINE project

**Date commenced:** February 2011

**Expected date of completion:** March 2014

### Economic evaluation comparing centre-based compulsory drug rehabilitation with community-based methadone maintenance treatment in Hai Phong City, Vietnam

**NDARC staff:** Thu Vuong (PhD Candidate), Prof Alison Ritter & Dr Marian Shanahan (advisors)

**Other advisors:** A/Prof Robert Ali (University of Adelaide), Dr Gian Le (Hanoi Medical University) & Dr Nhu Nguyen (FHI360 Vietnam)

**Rationale:** Vietnam has two dominant and competing drug addiction treatment modalities. The first one is centre-based compulsory treatment (CCT) which has been implemented for 20 years. If someone in the community is identified as using heroin (current drug of choice in Vietnam), they will be encouraged by the community leaders to go through community-based detoxification. If they fail to stop heroin use after several attempts, they will be forced into CCT for up to two years. The services in these centres include education on the dangers of illicit drug use, moral teaching,

labour therapy and limited one-size-fits-all vocational training activities. This modality is common in many countries in Southeast Asia. The UN publicly criticises this modality because it violates human rights principles. Currently, about 35% of Vietnam's 170,000 registered dependent drug users are kept in these centres. Funding for this modality is solely from the Government.

The other treatment modality is MMT, which has been available in Vietnam for five years. MMT is voluntary. It provides a legal and safe maintenance opioid for the duration of a person's life where required. MMT is recommended by WHO/UNAIDS/UNODC as the most effective treatment for heroin addiction. Currently, 10% of people who need MMT treatment are in treatment with funding mainly from international donors.

Vietnam became a middle income country in 2010. This means funding from international donors for the existing community-based drug addiction treatment service will decline in the next few years (2012-2016). The Government of Vietnam wants evidence of the cost-effectiveness of the two dominant drug addiction treatment modalities in Vietnam for more evidence-informed decision-making in drug treatment and resource allocation.

**Aims:** To compare the cost-effectiveness of CCT for substance abuse with community-based MMT in Hai Phong City, Vietnam.

The key comparison parameters are:

- proportion of people free from drug use
- number of drug-free days
- number of days free from criminal behaviours
- number of drug-use related HIV risk behaviours reduced
- number of overdose incidents reduced
- number of QALYs gained for heroin users.

**Design & Method:** The research will follow internationally recognised guidelines for costing substance use treatment interventions and standard economic principles for cost estimation and analysis of cost-effectiveness of the two drug addiction treatment modalities. For this study a societal perspective will be adopted so that all effects of an intervention on cost will be included: patient-incurred costs as well as costs to Government agencies. Societal perspective is the most inclusive perspective in healthcare economic evaluation. The design and methods for costing and measurement of effectiveness of CCT (Part A) and MMT (Part B) are described below.

**Part A (focuses on measuring the costs and effectiveness of CCT):**

Primary data will be collected to measure the effectiveness of CCT. A combined retrospective and prospective longitudinal cohort design will be used. A total of 220 CCT released participants (sample size based on power analysis) will be enrolled as soon as they are released from CCT centres. Interviews will be conducted using a structured questionnaire. Data will be collected to determine drug use behaviours and other related behaviours of the study participants for the three months prior to entry into the centres. Follow-up interviews after three, six and 12 months will focus on the same questions. At baseline and follow-up interviews, urine drug screening will also be conducted and compared to participants' self-report drug use. Although urine drug screening will be performed throughout this study, the use of self-reported data will allow us to measure reductions in illicit opioid use, not abstinence only.

**Part B (focuses on measuring the costs and effectiveness of MMT):**

Secondary data from two studies (2009 MMT costing study and 2009 MMT cohort study) will be used. In order to ensure a societal perspective to costing, additional data on MMT costing will be collected. These will include opportunity costs of participating in MMT treatment (on 144 MMT patients) and costing of buildings and land for MMT clinics.

Comparing CCT with MMT represents an inequivalence in time horizon because CCT is defined as a two-year rehabilitation process (time-limited) whereas MMT can be a lifetime treatment for many people (ongoing). In order to minimise this inequivalence, a two-year plus 12 month time horizon will be framed for both modalities to fit with the timeframe of this research. For CCT, it is the two years of rehabilitation plus the 12 months follow-up in the community. For MMT, it is the 2 years of previous cohort study follow-up (secondary data) plus an additional nine months follow-up (primary data).

**Progress:**

- Six-month follow-up interviews for MMT participants are complete.
- Data entry and cleaning for six-month follow-up interviews with MMT participants is complete.
- Baseline interviews for CCT-released participants are complete.
- Collection of all costs data is complete.
- three-month interviews for CCT-released participants have commenced.

**Funding:** NDARC PhD scholarship, Endeavour PhD scholarship, Atlantic Philanthropies through FHI 360 in Vietnam

**Date commenced:** February 2012

**Expected date of completion:** March 2015

**Economic evaluation of two alcohol interventions in an Indigenous community**

**NDARC staff:** Ansari Abudeen & A/Prof Anthony Shakeshaft

**Other investigators:** Prof Chris Doran (University of Newcastle), Prof Komla Tsey, Dr Janya McCalman & Dr Roxanne Bainbridge (James Cook University)

**Project description:** This PhD research will be jointly conducted with a current NHMRC-funded Access the Cost Effectiveness (ACE) Alcohol Indigenous project. Indigenous people have considerably shorter life expectancy than non-Indigenous Australians and alcohol is one of the contributing factors. Governments spend millions each year trying to close this health gap but there is little evidence to demonstrate this money is being spent appropriately. Assessing the economic efficiency of Indigenous alcohol policy requires examination of the effectiveness and cost-effectiveness of interventions; this will provide much-needed evidence about appropriate and effective policy.

**Aims:** This research will estimate the cost-effectiveness of a community-based program to reduce binge drinking among young indigenous Australians, as well as the cost-effectiveness and cost-benefit of providing treatment in an Indigenous-specific residential rehabilitation facility.

**Design & Method:** We will take a healthcare perspective to study a range of interventions currently targeted at Indigenous Australians. The ACE-Alcohol model will be used; this model was built on a broader body of priority-setting research that focused on

cost-effectiveness analysis. Intervention cost-effectiveness will be evaluated over the lifetime of the Indigenous Australian population eligible for each intervention in a selected baseline year. All the costs for each intervention will be estimated using a combination of top-down and bottom-up methods. All costs of interventions will be adjusted to base year and discounted accordingly. For each intervention, an incremental cost-effectiveness ratio will be evaluated and compared to a threshold level. We will use current practice and partial null as comparators to aid in the comparative analysis and marginal analysis; this will identify how the interventions can be ordered in the most efficient package.

**Progress:** PhD candidate Ansari Abudeen collected nearly all his data in 2012. The cost-effectiveness analysis of the youth-focused community prevention program was completed in 2013, as were the cost-effectiveness and cost-benefit evaluations of residential rehabilitation.

**Output:** Ansari has written substantial drafts of three papers for publication in the peer-reviewed literature. He has presented his early findings to the communities with which he is working.

**Benefits:** The findings of the project will strengthen the evidence base required to develop appropriate and effective Indigenous health policy in Australia. It will also provide policymakers with evidence about a suitable mix of policies for a given set of budget constraints.

**Funding:** UNSW University International Postgraduate Award, FARE (2011-2012)

**Date commenced:** February 2011

**Expected date of completion:** June 2014

### The value of providing health interventions for heroin use: a cost-benefit analysis

**NDARC staff:** Prof Alison Ritter; Prof Michael Farrell, Dr Marian Shanahan & Dr Phoung van Hoang

**Other investigators:** Prof Pascal Perez, Dr Nagesh Shukla & Vu Lam Cao (University of Wollongong)

**Project description:** Heroin use and associated harms can be reduced through effective treatment. Past research has shown that treatment for heroin dependence can be relatively cost-effective, but not whether heroin treatment overall is a good investment. This study will estimate the net social benefit of heroin treatment, taking into account health, crime but importantly also social and family consequences.

**Rationale:** Heroin use creates a significant burden. Treatment for heroin focuses on reducing both heroin use and the associated harms. Previous research on heroin treatment, such as pharmacotherapy maintenance, has demonstrated cost-effectiveness for specific interventions, but a comprehensive cost benefit analysis across all heroin treatments has never been undertaken. There are benefits over and above health and crime, such as improved social and family functioning, and despite acknowledgement that these are important outcomes they have not been included in previous economic evaluations. The benefits of heroin treatment accrue over a lifetime, requiring a long-term perspective for valuing costs and consequences. Thus, there are three aspects to this study:

- using a cost-benefit analysis framework that provides a summative analysis across treatment types
- valuing social and family consequences along with health and crime outcomes
- taking a lifetime perspective.

**Aims:** The research questions are:

- does the current set of health interventions for responding to heroin use result in positive Net Social Benefit (NSB)?
- under what assumptions does the total NSB change to greater or less than zero (i.e. indicate that this is an efficient/inefficient use of resources)?

**Design & Method:** The study will take place in NSW. The choice of a single jurisdiction over a national analysis is due to the diversity of jurisdictional differences in drug use, types of interventions provided, and how they are funded (personal versus government). As we are interested in the relationship between inputs, outcomes and consequences, the decision was made to construct the model with data for one jurisdiction.

We will:

- Document and value the health interventions for heroin use/dependence. A list of interventions will be developed in conjunction with an Expert Group established for this project.
- Quantify and value the outcomes/benefits of heroin use. A combination of data sources will be used. For example, overdose (both fatal and non-fatal) will be quantified through administrative data from coronial systems, the NSW Registry of Births Deaths and Marriages, hospital data, and the literature. The resource implications will be determined using data such as hospital cost data, diagnoses-related groups case weights/costs, emergency department data and their cost weights, and ambulance data. The value of life lost will be estimated based on previously estimated values of a statistical life.
- Match outcomes/benefits and consequences to interventions. This involves establishing causal relationships between consequences and interventions over time and accommodating interactions. We will map this in a lifetime model.
- Explore the efficiency of the health interventions. We will calculate the NSB by summing all the benefits and costs - as derived from the lifetime model described above.

**Funding:** NHMRC Project Grant

**Date commenced:** January 2013

**Expected date of completion:** December 2015

# COMPLETED PROJECTS

## TREATMENT AND INTERVENTION

### A double-blind, randomised, placebo controlled trial of Sativex® for the management of cannabis withdrawal

**NDARC staff:** Prof Jan Copeland, Dr David Allsop & Dr Melissa Norberg

**Other investigators:** A/Prof Nicholas Lintzeris (Drug & Alcohol Services, South East Sydney Local Health Network & University of Sydney), Prof Iain McGregor (University of Sydney), A/Prof Adrian Dunlop (Drug and Alcohol Clinical Services, Hunter New England Local Health Network, Belmont Hospital), Dr Mark Montebello (School of Psychiatry, UNSW & The Langton Centre), Dr Craig Sadler (Calvary Mater Hospital; Drug and Alcohol Clinical Services, HNEAH; University of Newcastle)

**Affiliates:** Dr Raimondo Bruno (University of Tasmania)

**Project description:** Treatment admissions for cannabis use disorders have risen considerably over the last few years, globally and within Australia. There is currently no effective pharmacotherapy for cannabis dependence, and very low abstinence rates reported from psychotherapy alone. A defined cannabis withdrawal syndrome has been identified, and while it is not life threatening, the discomfort it causes is reported to contribute to the high incidence of relapse amongst the cannabis-using population. As such cannabis withdrawal may be an important intervention target for dependence on the drug. This study represents the world's first safety and efficacy trial of a novel agonist medication (Sativex®) for alleviating the symptoms of cannabis withdrawal.

**Aims:** In this project, we aimed to:

- assess the effectiveness of Sativex® (nabiximols) compared to a placebo control for alleviating the number, severity and duration of cannabis withdrawal symptoms, as well as the overall withdrawal score measured using the Cannabis Withdrawal Scale.
- assess the effect of nabiximols on detoxification completion rates and length of stay in treatment compared with placebo.
- compare reports of adverse events during detoxification treatment between the two groups.

**Design and Method:** This study was a phase II, multi-site, double-blind, randomised, placebo-controlled inpatient trial.

**Findings:** Nabiximols treatment significantly reduced the overall severity of cannabis withdrawal relative to placebo ( $F_{9,377.97}=2.39$ ,  $P=0.01$ ), including effects on withdrawal-related irritability, depression and cannabis cravings. Nabiximols had a more limited, but still positive, therapeutic benefit on sleep disturbances, anxiety, loss of appetite, physical symptoms and restlessness. Participants given nabiximols remained in treatment longer during medication (Unadjusted HR: 3.66 [95% CI 1.18-11.37],  $P=0.02$ ) with the numbers needed to treat to achieve successful retention in treatment of 2.84. Participants could not reliably differentiate between nabiximols and placebo treatment ( $D^2=0.79$ ,  $P=0.67$ ) and those receiving nabiximols did not report greater intoxication ( $F_{1,50}=0.22$ ,  $P=0.97$ ). The number ( $F_{1,50}=0.3$ ,  $P=0.59$ ) and severity ( $F_{1,50}=2.69$ ,  $P=0.1$ ) of AEs did not differ between groups. Both groups showed reduced cannabis use at 28-day follow-up, with no advantage of nabiximols over placebo for self-reported use ( $F_{1,50}=0.1$ ,  $P=0.75$ ), cannabis-related

problems ( $F_{1,50}=2.27$ ,  $P=0.14$ ), or cannabis dependence ( $F_{1,50}=0.006$ ,  $p=0.9$ ).

**Output:** A paper is in press with *JAMA Psychiatry*. Dr David Allsop presented papers, posters and invited lectures at numerous conferences and workshops:

- New Zealand Drug Foundation International Drug Policy Symposium, Auckland, New Zealand (November)
- Australasian Professional Society on Alcohol and other Drugs Conference, Brisbane, Queensland (November)
- 11th World Congress of Biological Psychiatry, Kyoto, Japan (June)
- College on Problems of Drug Dependence Conference, San Diego, California (June)
- International Cannabinoid Research Society Conference, Vancouver, Canada (June)
- National Institute on Drug Abuse (NIDA) International Forum (June)
- 1st Australasian Mental Health and Addiction Nursing Conference, Auckland, New Zealand (June)
- University of Wollongong Psychology Colloquium, Wollongong, NSW (May)
- Medicine in Addiction Conference, Sydney, NSW (March)
- South Eastern Sydney Local Health Network In Service Training Day, Sydney, NSW (August)
- Hunter New England Local Health Network In Service Training Day, Newcastle, NSW (July)
- Langton Centre In Service training day, Sydney, NSW (June)
- UNSW Masters in Public Health course, Sydney, NSW (June)

**Funding:** National Health and Medical Research Council (NHMRC) Project Grant

**Date commenced:** October 2011

**Date completed:** June 2013

### Characteristics of methamphetamine users entering treatment in therapeutic communities

**NDARC staff:** Prof Jan Copeland & Dr John Howard

**Other investigators:** Lynne Magor-Blatch (PhD student)

**Project summary:** This project explored the characteristics of methamphetamine users entering treatment in therapeutic communities (TCs), and assessed the effectiveness of a specialist amphetamine-type substance (ATS) intervention in therapeutic communities.

**Aims:** The major focus of the study was to ascertain whether there is a difference in outcomes between clients who undertake a treatment intervention in a TC setting and those who receive 'treatment as usual.'

**Design & Method:** A quasi-experiment comparing process and outcomes of treatment for clients with ATS as a principal or secondary drug of concern in a TC setting receiving an additional focused ATS intervention compared with treatment as usual.

**Findings:** Participants were interviewed and completed self-report questionnaires of psychosocial measures at entry to the study and at two follow-up points over 18 months. Results for both groups

showed statistically significant and clinical improvement over baseline on several measures, however; there was no difference between groups. Overall, results showed reduced substance use and criminal offending, as well as improvement on a range of psychosocial measures, including mental and physical health, psychopathology and executive function. These findings provide evidence supporting the effectiveness of the group intervention. Aspects considered to be most beneficial included activities based on acceptance commitment therapy and mindfulness.

**Output:** A peer-reviewed paper in *Mental Health and Substance Use* and Lynne Magor-Blatch's PhD thesis, titled *Intervention for amphetamine-type stimulant (ATS) use in the therapeutic community*.

**Benefits:** Enhanced capacity of TCs and other residential and non-residential treatment to address ATS-related harms.

**Funding:** Nil

**Date commenced:** 2010

**Date completed:** November 2013

### Impacts of legal mandates to enter treatment, perceived coercion, and motivation on treatment engagement and retention in alcohol and other drug treatment programs

**NDARC staff:** Dr John Howard

**Other investigators:** Poppy Rourke (UNSW Master's student) & Dr Kristy Martire (School of Psychology, UNSW)

**Aims:** To examine whether a legal mandate to enter residential AOD treatment and related factors such as motivation and perceived coercion from legal as well as other sources impact upon AOD treatment engagement and retention.

**Design & method:** Survey of participants in TCs.

**Output:** Masters thesis submitted and passed.

**Benefits:** Better understanding of coercion into treatment, and possible modifications to programs.

**Funding:** Nil

**Date commenced:** November 2012

**Date completed:** November 2013

### Improving services to women who are pregnant and alcohol dependent

**NDARC staff:** Dr Lucy Burns, Dr Delyse Hutchinson & Dr Courtney Breen

**Other investigators:** Dr Deborah Loxton and Jennifer Powers (University of Newcastle), Sue Miers (National Organisation for Fetal Alcohol Syndrome and Related Disorders) & Dr Adrian Dunlop (Hunter New England Drug and Alcohol Services)

**Project description:** Alcohol exposure in utero can cause a range of abnormalities in the fetus which are included under the umbrella term Fetal Alcohol Spectrum Disorders (FASD). Identification and treatment of problem drinking prior to and during pregnancy is recognised as an effective strategy for prevention of FASD. However, only a small proportion of pregnant women who drink at problematic levels are identified and treated. There are a variety

of reasons for women not to access treatment including a lack of services, attributing their problems to mental health rather than alcohol use and issues relating to their children or partner. Given the changing patterns of alcohol consumption and harm by women, attention must be paid to the way gender stereotypes influence the prevention and treatment of alcohol related problems.

#### Aims:

- To gain information from alcohol dependent women and clinicians who care for such women on barriers to treatment
- To produce a resource for clinicians about the management of alcohol dependence in pregnancy

#### Design & Method:

- a literature review of alcohol use in pregnancy
- a qualitative survey of clinicians who work with alcohol dependent women
- a qualitative survey of alcohol dependent pregnant women

**Findings:** The final project report put forward the gold standard for the treatment of alcohol dependence in pregnancy. The gold standard incorporates the following principles:

- That standardised screening be undertaken of all pregnant women on their alcohol use. This should be undertaken by health professionals who see pregnant women and should be accompanied by the provision of education, brief intervention, and continued monitoring where appropriate
- That all pregnant women who screen positively for alcohol-use disorders be offered access to treatment and that this treatment be matched to the severity of the disorder. Treatment should include inpatient admission for detoxification if necessary
- That all pregnant women who are alcohol dependent be offered extended hospitalisation after their child's birth for additional help and support. Women and children should also be followed-up through the child's formative years. This follow-up should provide assistance in healthcare, social services, housing and parenting support
- That treatment of pregnant women who are alcohol dependent be undertaken by a multidisciplinary team. This includes alcohol and other drug services, obstetric care and a GP

**Output:** The final report, *It's time to have the conversation: Understanding the treatment needs of women who are pregnant and alcohol dependent*, was published in November 2013. Findings were also presented at the Australasian Fetal Alcohol Use Disorders Conference and First International Conference on the Prevention of FASD.

**Benefits:** Improved detection and treatment for alcohol dependent women will reduce preventable FASD.

**Funding:** Foundation for Alcohol Research & Education (FARE)

**Date commenced:** June 2011

**Date of completion:** November 2013

**Literature review for National Mental Health Commission's Report Card on Mental Health and Suicide Prevention: *One person, diverse needs: living with mental health and alcohol and drug difficulties – A review of best practice***

**NDARC staff:** Mark Deady, Dr Katherine Mills, Prof Maree Teesson & Dr Frances Kay Lambkin

**Collaborators:** Prof Amanda Baker (University of Newcastle), Prof Paul Haber (University of Sydney), A/Prof Andrew Baillie (Macquarie University), Prof Helen Christensen (Black Dog Institute, UNSW), Leonie Manns & Dr Fiona Shand (Black Dog Institute, UNSW)

**Project summary:** The National Mental Health Commission writes an annual Report Card on Mental Health and Suicide Prevention and this work is supported by commissioned reports, including a literature review. In 2013 the chapter 'Thriving Not Just Surviving' had as its topic as 'One person diverse needs: living with a mental illness as well as the challenges from difficulties with alcohol and drug use.' It canvassed the areas in which co-existing mental health and SUDs affect the individual, the service pathways and responses available and what is different for this group of people. It looked at what is evidence-based best practice, what works for particular communities (such as the Aboriginal and Torres Strait Islander community) and what is happening at the national level.

**Rationale:** Comorbidity is a significant issue facing many Australians.

**Aims:** The Literature Review was to support the considered development of the Report Card by addressing the following key questions:

- What is the national and international evidence based good practice in the area?
- What are the elements of a good practice service/support/policy/approach?
- Is the evidence applied and found in the Australian context?
- What are the Australian examples of good practice services polices or approaches?
- What are the current areas of debate or contention indicated in the literature?
- What are (if any) the contentious or debated areas for various stakeholders?
- Where are the gaps in our knowledge, data, perspective or services?
- Does the literature indicate where enhanced effort, or scaling up, would yield the greatest impact and improvement, in terms of system change, individual outcomes or experience of care, treatment or services?

**Design & method:** The literature review was conducted by Prof Teesson, Dr Mills and Mark Deady. The completed literature review was reviewed by Chief Investigators on the NHMRC Centre of Research Excellence in Mental Health and Substance Use (Profs Baker, Haber, Baillie, Christensen and Dr Kay Lambkin).

**Findings:** Available online at: <http://www.mentalhealthcommission.gov.au/our-report-card/>

**Output:** The review was submitted to the Commission for incorporation into the National Report Card.

**Benefits:** The Report Card casts an independent eye over how we as a nation support the estimated 3.2 million Australians each year who live with a mental health difficulty (and substance use issues), their families and support people, and how we provide and co-ordinate the services they need.

**Funding:** National Mental Health Commission / Commonwealth Government Contract

**Date commenced:** July 2013

**Date completed:** August 2013

**Pharmacy-based interventions for cannabis use-related difficulties**

**NDARC staff:** Dr John Howard, Prof Jan Copeland & Morag Millington

**Collaborators:** Denis Leahy (Pharmacy Guild of Australia - NSW Branch), Carlene Smith (Pharmacy Guild of Australia - NSW Branch), A/Prof Timothy Chen (University of Sydney), A/Prof Janie Sheridan (University of Auckland), Jennie Houseman (Northern Sydney Area Drug and Alcohol Services, NSW Health)

**Project summary:** This project aimed to ascertain the attitudes of pharmacists to cannabis and its use, their potential role in health promotion and provision of brief, opportunistic interventions (i.e. information provision - health promotion, clinical advice and referral), their willingness to do so, any barriers to such provision, and resources that could assist. The project aim was to expand the potential for the dissemination of cannabis prevention information, and the provision of opportunistic brief interventions to address potential cannabis use-related harms in pharmacy settings.

Pharmacists hold a unique position in healthcare, especially in rural areas where a medical practitioner may only be available on a sessional basis. In order to engage with pharmacists and equip them to provide appropriate assistance to cannabis users, a better understanding of their views on and attitudes towards cannabis and people who use cannabis is warranted, as is their perceptions of any barriers in providing the interventions being developed. In addition, their view on useful resources to assist them and their clients is essential for resource development.

**Aims:** To ascertain the attitudes of pharmacists to cannabis and its use, their potential role in health promotion and provision of brief, opportunistic interventions, their willingness to do so, any barriers to such provision, and resources that could assist.

**Design & Method:**

Practice component:

- Selected NCPIC factsheets were adapted for use by pharmacists and their customers. These, together with the Severity of Dependence Scale and various NCPIC resources, formed a pack for use by pharmacists in community settings.
- An information session was provided to 35 pharmacists from the Hunter/New England area at the School of Biomedical Sciences and Pharmacy at the University of Newcastle on 31 October 2012 by Dr John Howard and Dr Adrian Dunlop, Director of Drug and Alcohol Services, Hunter and New England Health Service, and Pharmacy Guild personnel.
- A proposal was developed for funding by the Pharmacy Guild for a pilot in a health area of brief opportunistic interventions.

The research component had qualitative and quantitative arms.

- A qualitative study involving 11 pharmacists was completed. This arm of the research was guided by the aims outlined above, and the results were used to develop the quantitative instrument and the process for recruiting pharmacists and pharmacy staff to complete the survey.
- For the quantitative arm, the survey instrument was modelled on the NCPIC survey of general practitioners in relation to provision of interventions for cannabis-related difficulties in patients presenting in a GP setting, and is consistent with that used by Sheridan (2008) in New Zealand, where she explored NZ pharmacists' view of providing expanded services related to alcohol-related difficulties. The invitation to complete the survey was circulated via email to Pharmacy Guild members, and was anonymous. Participants were asked to indicate willingness to repeat the survey 12 months later.

**Outcome:** The survey is now complete and the results were presented at an APSAD meeting in November 2013. An NCPIC Bulletin has been prepared.

**Output:** A paper was published in *Retail Pharmacy* in June.

**Funding:** NCPIC; Pharmacy Guild of Australia - NSW Branch

**Date commenced:** June 2012

**Date completed:** November 2013 (ongoing capacity building to deliver interventions by pharmacists continues)

### Review, update and develop a dissemination strategy for the *National Clinical Guidelines for the Management of Drug Use During Pregnancy, Birth and the Early Development Years of the Newborn* for NSW

**NDARC staff:** Dr Lucy Burns, Sarah Goodsell & Elizabeth Whittaker

**Project summary:** The Ministerial Council on Drug Strategy commissioned the *National Clinical Guidelines for the Management of Drug Use During Pregnancy, Birth and the Early Development Years of the Newborn* (the Guidelines), and they were published in March 2006. The aim of the Guidelines was to develop a comprehensive, coherent and consistent approach to the clinical care of women with problematic drug or alcohol use during pregnancy and to the care of mother and child in the early developmental stages of the child's life. The Guidelines are intended for use by all healthcare practitioners working with pregnant women experiencing a drug or alcohol problem. NSW Health disseminated the Guidelines to all AHSs across the State in 2006.

As part of the response to Recommendation 9 of the NSW Ombudsman's *Report of Reviewable Deaths in 2005: Child Deaths*, NSW Health was required to investigate the issue of promoting and ensuring compliance with the Guidelines. A study of levels of awareness, knowledge and compliance with the Guidelines across NSW indicated that further work was required. Most notably, the Guidelines required updating to align them with changes to the National Health and Medical Research Council Guidelines regarding alcohol use in pregnancy, recent research findings with respect to the safety of buprenorphine use in pregnancy, and to ensure that the Guidelines were suitable for the NSW context.

**Aims:** The purposes of this project were to:

- review and update the Guidelines for use in the NSW context

- develop a dissemination strategy for the revised Guidelines.

**Design & Method:** The process used a similar method (a consensus model) adopted in the development of the Guidelines to revise and update the Guidelines. International and Australian research literature was reviewed by experts. A collaborative group of colleagues working within the drug and alcohol program of their respective AHSs along with key experts in the area were brought together in a face-to-face consensus meeting to comment on the Guidelines.

**Outcome:** The revised guidelines were sent to the funders in 2012, who are preparing to publish the final version in 2014.

**Benefits:** An up-to-date evidence base on the impact of substance use in pregnancy.

**Output:** In addition to the revised guidelines, output over the course of the project included a poster and presentation at APSAD conferences; a poster at the 2011 NDARC annual symposium; and a consultative workshop with Indigenous women to develop a flipchart that health professionals can use with Aboriginal and Torres Strait Islander women and their families to educate them on the effects of substance use in pregnancy.

**Funding:** NSW Health Department

**Date commenced:** June 2010

**Date completed:** 2013

## PATTERNS OF ALCOHOL AND DRUG USE

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

**NDARC staff:** Prof Shane Darke & A/Prof Anthony Shakeshaft

**Other investigators:** Prof Chris Doran (University of Newcastle)

**Rationale:** Alcohol consumption is strongly linked with premature mortality. The current study 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.

**Aims:**

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

**Design & Method:** Times series analyses of national homicide and suicide rates with annual per capita consumption of beer, wine and spirits.

**Findings:** 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 ( $r=0.64$ ).

**Output:** Findings were published in NDARC technical report 324.

**Benefits:** First Australian data on these associations.

**Funding:** Australian Government Department of Health

**Date commenced:** 2012

**Date completed:** 2013

### Cannabis and the workforce

**NDARC staff:** Dr Peter Gates, Prof Jan Copeland & Rachel Grove

**Project summary:** Workplace substance use incurs substantial costs to society and employers through decreased productivity as well as increased employee turnover, absenteeism and stress. This study examined workplace substance use and substance-related problems in Australia using two waves of NDSHS data.

**Aims:** To detail workplace substance use and workplace problems (including absenteeism, going to work under the influence of a substance and workplace abuse) by industry and occupation using two waves of the NDSHS, and to identify any statistically significant changes in the prevalence of workplace problems over time.

**Design & method:** Data from the 2007 and 2010 NDSHS were merged and analysed with descriptives and simple chi-square analyses conducted.

**Findings:** Among the total workforce, work problems relating to substance use either remained stable (drug-related absence, going to work under the influence of an illicit drug) or reduced significantly (reports of workplace abuse). Importantly, the prevalence of substance-related workplace problems was not seen to increase despite increases in substance use at a population level. However, this finding needs to be considered in the context of the worker's age, gender, industry and occupation. For example, substance use is known to be elevated among young males while older females report much lower use. Similarly, those in the hospitality and construction industries reported an increased prevalence of workplace problems. In contrast, those in education and training and agriculture industries were at less risk of workplace problems. In addition, with the exception of workplace abuse, those in the healthcare industry and in professional occupations were at less risk of workplace problems than other groups.

In regards to substance use, in 2007 and 2010, a lower proportion of those employed in healthcare and education and training industries reported recent cannabis and other illicit substance use compared to those who were not in the workforce. Further analysis of the 2007 and 2010 NDSHS data also suggests that the substance use gap between the workforce and those not in the workforce is decreasing for illicit substance use and increasing for alcohol use. That is, between 2007 and 2010, cannabis and other illicit substance use increased significantly and alcohol use decreased significantly, but only among those not in the workforce.

**Output:** A paper on the findings, titled 'Substance use in the Australian workforce', has been published in the *Journal of Addiction Prevention*. A second paper has been accepted for publication by the *Journal of Occupational Health and Safety*.

**Benefits:** The ability of Australian workplaces to make an informed response to workplace drug use is impeded by a lack of information on workplace substance use, which itself is unevenly delineated across different industries and social and demographic factors. This project provides an update on workplace problems (including absenteeism, going to work under the influence of a substance and workplace abuse) by industry and occupation and identifies statistically significant changes in the prevalence of workplace problems using the most recent NDSHS data.

**Funding:** Australian Government Department of Health

**Date commenced:** July 2012

**Date completed:** October 2013

### Characteristics, circumstances and toxicology of sudden or unnatural deaths involving very high range alcohol concentrations

**NDARC staff:** Prof Shane Darke & Michelle Torok

**Other investigators:** Prof Johan Dufou (Department of Forensic Medicine, Sydney South West Area Health Service; UNSW; University of Sydney); Tatiana Prolov (NSW Forensic Analytical Science Service, Western Sydney Local Health District)

**Rationale:** Alcohol consumption is strongly linked to premature mortality. Whilst many studies have examined the proportions of alcohol positive cases associated with cause of death, no study to date has characterised the nature and circumstances of sudden or unnatural deaths presenting with very high alcohol concentrations.

**Aim:** To characterise sudden or unnatural deaths with very high range blood alcohol concentrations (BACs) presenting to the Department of Forensic Medicine (DOFM) in Sydney between 1/1/1997-31/12/2011.

**Design & Method:** Case series of 264 cases of sudden or unnatural death with a BAC of  $\geq 0.300\text{g}/100\text{ml}$ .

**Findings:** The mean age of decedents was 46.7yrs and 74.5% were male. Pre-existing alcohol problems were noted in 78.7%. Deaths were due to alcohol toxicity/chronic alcoholism (34.6%), combined alcohol/other drug toxicity (14.8%), accidents (18.7%), natural disease (13.4%), suicide (11.0%), homicide (6.9%) and one case was undetermined. Alcohol was a direct, or contributory, cause of death in 84.4% of cases. The overwhelming majority (81.4%) occurred in a home environment, and deaths did not vary by day or month. The mean BAC was  $0.371\text{g}/100\text{ml}$  (range  $0.300\text{--}0.820\text{g}/100\text{ml}$ ), being highest in alcohol toxicity/chronic alcoholism cases ( $0.410\text{g}/100\text{ml}$ ). The most frequently detected substances, other than alcohol, were benzodiazepines (31.9%) and opioids (12.9%). Alcohol-related disease was diagnosed in 62.9% of cases. Alcohol-related pathology was prevalent across all categories of death: severe steatosis (35.3%), cirrhosis (22.5%), chronic pancreatitis (15.3%), cardiomyopathy (9.4%), cerebellar atrophy (9.0%).

**Benefits:** Unnatural deaths with very high range alcohol concentrations extend well beyond direct toxicity, and alcohol is causal in most cases. Those at greatest risk are middle aged males, with long histories of alcohol problems. The provision of treatment, and especially of early treatment, might well have prevented many of these deaths.

**Output:** Findings were published in *Addiction* and the *Journal of Forensic and Legal Medicine*

**Funding:** Australian Government Department of Health and NSW Health

**Date commenced:** 2011

**Date completed:** 2013

### Circumstances and toxicology of sudden or unnatural deaths involving alprazolam

**NDARC staff:** Prof Shane Darke & Michelle Torok

**Other investigators:** Prof Johan Dufflou (Department of Forensic Medicine, Sydney South West Area Health Service; UNSW; University of Sydney)

**Rationale:** There has been a great deal of clinical concern regarding alprazolam abuse.

**Aims:**

- To determine the characteristics, circumstances and causes of sudden or unnatural deaths involving alprazolam
- To determine the toxicology of sudden or unnatural deaths involving alprazolam

**Design & Method:** Case series. All cases presenting to the NSW DOFM between 1995-2012 in which alprazolam were detected were retrieved.

**Findings:** 412 cases were identified. There was a large increase in the annual number of cases, from three in 1997 to 86 in 2012. By 2012, 4.5% of all DOFM case presentations involved alprazolam. The mean age was 41.3 years and 66.5% were male. Circumstances of death were accidental drug toxicity (57.0%), deliberate drug toxicity (10.4%), suicide by means other than drug overdose (12.6%), disease (10.0%), accident (5.1%) and homicide (2.4%). The major factor driving the increase in cases was accidental drug toxicity involving alprazolam, rising from zero cases in 1997 to 58 in 2012. A history of alcohol/drug problems was noted in 80.4% of cases and 56.6% were IDU. The median alprazolam concentration was 0.08 mg/L (range 0.005-2.10 mg/L), with 37.4% of cases having concentrations of  $\pm 0.1$  mg/L. In 94.9% of cases, drugs other than alprazolam and its metabolites were present, including all accidental overdoses. The most commonly detected drugs were opioids (64.6%), other benzodiazepines (44.4%) and alcohol (34.5%). A third (31.8%) of cases were HCV positive.

**Benefits:** Novel data on harms associated with alprazolam use.

**Output:** A paper is in press with the *Journal of Forensic Sciences*.

**Funding:** Australian Government Department of Health and NSW Health

**Date commenced:** 2012

**Date completed:** 2013

### Circumstances and toxicology of unnatural deaths involving steroids

**NDARC staff:** Prof Shane Darke & Michelle Torok

**Other investigators:** Prof Johan Dufflou (Department of Forensic Medicine, Sydney South West Area Health Service; UNSW; University of Sydney)

**Rationale:** There is emerging evidence that the use of anabolic-androgenic steroids (AAS) is associated with increased risk of premature mortality. The study aimed to provide novel data on Australian fatalities involving steroids.

**Aims:** The study aimed to determine the circumstances of death, demographic characteristics, toxicology and major organ pathology of cases presenting to DOFM, Sydney, over the period 1 January 1996-31 December 2012 in which anabolic steroids were detected during quantitative toxicological investigations.

**Design & Method:** Case series. All cases presenting to the NSW DOFM between 1995-2012 were retrieved in which AAS were detected.

**Findings:** A total of 24 cases were identified. All were male with a mean age of 31.7 years. Most commonly, deaths were due to accidental drug toxicity (62.5%), followed by suicide (16.7%) and homicide (12.5%). The most commonly detected steroids were nandrolone (58.3%), stanozolol (33.3%) and methandienol (20.8%). In all but one case substances other than steroids were detected, most commonly psychostimulants (66.7%). In nearly half testicular atrophy was noted, as was testicular fibrosis and arrested spermatogenesis. Left ventricular hypertrophy was noted in 30.4% of cases and there was moderate to severe occlusion of the coronary arteries in 26.1%. The typical case was thus a male polydrug user in their early thirties, with drug toxicity the most common cause of death. Extensive cardiovascular disease was particularly notable.

**Benefits:** Novel data on harms associated with steroid use.

**Output:** A paper is in press with the *Journal of Forensic Sciences*.

**Funding:** Australian Government Department of Health and NSW Health

**Date commenced:** 2012

**Date completed:** 2013

### Examining the prevalence of ADHD among those with SUD

**NDARC staff:** Dr Sharlene Kaye, Prof Louisa Degenhardt & Joanne Cassar

**Other investigators:** Prof Steve Allsop, Dr Susan Carruthers, Prof David Hay, Dr Neilson Martin & A/Prof David Groth (Curtin University)

**Affiliates:** Geurt van de Glind (Trimbos Institute, Utrecht; Amsterdam Institute for Addiction Research, Amsterdam), Wim van den Brink (Amsterdam Institute for Addiction Research, Amsterdam), Arvid Skutle, Eva Karin Lovaas and Kari Lossius (Bergen Clinics Foundation, Bergen), Johan Franck and Maija Konstenius (Karolinska University Hospital, Stockholm), Csaba Barta (Semmelweis University, Budapest), Antoni Ramos Quiroga (Vall d'Hebron University Hospital, Barcelona), Brian Johnson (SUNY Upstate Medical University Hospital, Syracuse) and Marc Auriacombe (University of Bordeaux, Bordeaux).

**Project description:** Limited research suggests a strong association between adult ADHD and SUDs, with adult ADHD over-represented among people with substance use problems (20-40% prevalence). ADHD complicates the course of SUD, such that substance dependence is likely to have an earlier onset and

greater severity among those with ADHD, and be more difficult to treat, with higher rates of relapse. The harms associated with alcohol and other drug use may be increased when ADHD is present, due to the inattention, carelessness, and impulsive risk-taking that are associated with ADHD. The increased risk of alcohol and other drug-related harm is of particular concern among younger people with ADHD, who already engage in more high-risk behaviour than their non-ADHD and older counterparts. Risk behaviours that are likely to compound the harms already inherent in drug and alcohol use per se include engaging in high-frequency substance use, harmful routes of drug administration, blood-borne virus risk behaviours, and high-risk driving behaviours. This study was part of an international multi-site study, known as the International ADHD in Substance use disorders Prevalence (IASP) study, coordinated by the International Collaboration on ADHD and Substance Abuse. The IASP study was conducted in Australia, Belgium, France, Hungary, Norway, Spain, Sweden, Switzerland, The Netherlands and the USA.

**Aims:** To:

- assess current ADHD symptomatology among adults entering treatment for drug or alcohol dependence
- test the performance of internationally used screening instruments for adult ADHD among this specific clinical population
- investigate the relationship between ADHD symptoms and the onset and course of SUD, by comparing psychiatric comorbidity, onset of SUD, and health and social functioning of patients with and without symptoms of ADHD
- assess the nature and level of risk-taking behaviour associated with ADHD symptomatology.

**Design & Method:** This study employed a cross-sectional survey design. Adult alcohol and/or illicit drug users entering a new episode of treatment for drug and/or alcohol dependence in Perth and Sydney were administered a structured interview designed to screen for adult ADHD and examine SUD, psychiatric history, and drug-related, sexual and driving risk behaviours.

**Outcome:** Recruitment of study participants, coordinated by Joanne Cassar (NDARC), Dr Susan Carruthers (NDRI) and Jesse Young (NDRI), continued until August 31, 2011, at which time 303 interviews in Sydney and 185 interviews in Perth had been conducted. Recruitment in other participating countries ceased on August 31, 2011. A total sample of 3,558 cases, from 47 inpatient and outpatient treatment sites, was obtained. Data analysis is complete.

**Output:** Four papers based on the international findings have been published in *Addiction*, the *International Journal of Methods in Psychiatric Research* and *Drug and Alcohol Dependence*. Papers based on the Australian findings are under review.

**Benefits:** This was the first Australian study to contribute to internationally comparable estimates of adult ADHD among people with SUD and the largest study of adult ADHD among substance-dependent populations in Australia to date. It was also the first Australian study to examine risk behaviours associated with ADHD among SUD populations. Improved identification of adult ADHD among people with SUD will assist in the tailoring of substance dependence treatment to the specific needs of those with ADHD and in the management of ADHD treatment, leading to a better treatment outcome for the patient. This research also has

important implications for children and adolescents with ADHD, who are at greater risk of developing problematic substance use and comorbid psychiatric disorders and engaging in harmful risk-taking behaviours. Alcohol and other drug use prevention and intervention strategies specifically targeted toward young people with ADHD will be of critical importance in reducing the harm and public health burden associated with SUD complicated by ADHD. Moreover, the findings will inform the development of future trials of ADHD treatment among substance-dependent populations. The study will, therefore, guide the development of programs to detect, diagnose and manage ADHD in people with SUD, contribute to improved and effective treatment of SUD in patients with comorbid ADHD, and inform strategies for prevention and monitoring of SUD in children and adolescents with ADHD.

**Funding:** Curtin University - Contract Research. The funding period for this project was September 2010 - March 2012.

**Date commenced:** September 2010

**Date completed:** April 2013

### Literature review of cannabis and sleep

**NDARC staff:** Dr Peter Gates, Lucy Albertella & Prof Jan Copeland

**Project summary:** Individuals often report using cannabis to sleep, experiencing sleep problems as a symptom of withdrawal, and relapsing due to sleep problems. This project endeavoured to integrate research on cannabis and sleep so that gaps in the literature can be identified and improvements in cannabis use interventions can be achieved.

**Rationale:** Research to develop a better understanding of how cannabis use impacts on sleep and the extent to which cannabis use is associated with changes to sleep architecture is rarely conducted. Measurement of the proportion of cannabis users who have sleeping problems or who use cannabis to assist their sleep may be clinically helpful when assisting individuals interested in abstaining from cannabis use.

**Aims:** This study addressed the research gap on cannabis and sleep by identifying:

- how many people report sleep disturbances before, during and after cannabis use
- the nature, severity and impact of these sleep disturbances
- the characteristics of people who report sleep disturbances before, during and after cannabis use.

**Design & Method:** All English-language articles that include specific measures of cannabis use and sleep in human participants were located and reviewed. In addition, each study was assigned a quality rating. The project aimed to produce a systematic review.

**Findings:** After removing duplications and applying exclusion criteria, 127 relevant articles remained. These articles fell into six different categories: 15 papers on the effects on sleep of administering cannabis; 27 on the effects on sleep of removing access to cannabis (forced withdrawal); 29 on associations between cannabis use and sleeping difficulty; three on the effects on infant sleep by smoking during pregnancy; 11 on the prevalence of medicinal cannabis use for sleep; 28 on the effects of medicinal cannabis on sleep; and 17 on the prevalence of sleep problems as part of cannabis withdrawal.

The acute effects of cannabis use on sleep appear to be a disruption to the sleep cycle, reflecting a reduction in time spent in slow wave sleep, and an increase in time spent in random eye movement sleep. Withdrawal from cannabis produces an opposite trend. A secondary impact on sleep latency may be present, as both use and withdrawal appear to increase the time taken to fall asleep. Other measures such as sleep time, body movements, awakenings and sleep quality were not consistently influenced. Sleep problems during cannabis withdrawal were reported by approximately half of the samples reviewed and did not appear to be a consistent cause for relapse. Paradoxically, cannabis use tended to improve sleep among populations using cannabis medicinally, although this may reflect an improvement in condition-related symptoms which reduce sleep.

Several limitations to the research prevent any definitive conclusions regarding the influence of cannabis on sleep. First, the included articles were typically of low quality (overall average quality rating was 49.5%), meaning that risk of bias was high. Second, over half of the studies were conducted in the USA and Canada, so the findings presented may not be representative of the Australian population or other countries with a more or less restrictive social and/or law enforcement approach to cannabis use. Third, most studies were short term, looking at the influence of cannabis use on sleep over periods of weeks, so the longer-term impact of cannabis use remains poorly understood. Studies describing sleep problems among long-term users showed mixed results.

**Output:** An article for an online bulletin has been accepted for publication and is being formatted for presentation on the NCPIC website as a Bulletin. Two further systematic review articles will be submitted to *Sleep Medicine Reviews* in early 2014.

**Benefits:** Recognising the effects of cannabis use on sleep is important for both the cannabis user and for health providers tasked with assisting behavioural change. That is, this knowledge may act as a motivational tool for those deciding whether or not to use cannabis. In addition, this knowledge may assist clinicians to reduce the risk of relapse to cannabis use among their clients by assessing and addressing sleep problems as necessary.

**Funding:** Australian Government Department of Health

**Date commenced:** December 2012

**Date completed:** January 2014

### The relationship between alcohol use and mental disorders from adolescence to young adulthood – longitudinal analyses from a large Australian cohort study

**NDARC staff:** Prof Louisa Degenhardt, Dr Wendy Swift & A/Prof Tim Slade

**Other investigators:** Prof George Patton (University of Melbourne & Murdoch Childrens Research Institute), Prof Wayne Hall (University of Queensland), Dr Christina O’Loughlin (Murdoch Childrens Research Institute), Dr Helena Romanuik (Murdoch Childrens Research Institute) & Prof John Carlin (University of Melbourne & Murdoch Childrens Research Institute)

**Project summary:** This study was part of the long-running and ongoing ‘2000 stories’ project.

Few longitudinal data exist on the relationship between alcohol use, mental health, and outcomes in young adulthood. This study aimed to uncover the contribution that alcohol use and misuse make to mental health in adolescents and young adults by undertaking analyses of data from a major Australian longitudinal study. Outcomes focused on in this study included the development and persistence of risky drinking, alcohol abuse and dependence; the development of anxiety and depressive disorders; life outcomes, such as educational and occupational attainment and social functioning, among those with depressive and anxiety disorders; and life outcomes in those with personality disorders.

**Rationale:** There is a pressing need to understand the longer-term impacts of processes that manifest during adolescence. One particularly significant area is the link between alcohol use, common mental health problems and life-course outcomes. Despite this need, few longitudinal data exist on the relationship between alcohol use, mental health and outcomes in young adulthood. We have little understanding of the longer-term impact of the co-occurrence of disorders in adolescence upon: alcohol use and disorders in adulthood; mental disorders in young adulthood; and life outcomes such as employment, education and social relationships. This study contributes some of the best available information on the natural history and social contexts relevant to alcohol and its relationship to common mental health disorders across young adulthood in Australia.

**Aim:** To understand the contribution that alcohol use and misuse make to mental health in adolescents and young adults by undertaking analyses of data from a major Australian longitudinal study.

Specifically, we wanted to discover:

- What patterns of drinking in adolescence predict the development and persistence of risky drinking and alcohol abuse and dependence through young adulthood?
- Does adolescent alcohol use or misuse predict the persistence of adolescent anxiety and depressive disorders into young adulthood?
- Does adolescent alcohol use or misuse increase the risk of adverse life outcomes among those with adolescent anxiety and depressive disorders, in areas such as educational and occupational attainment, welfare dependence, relationships and social functioning?
- Does problematic alcohol use in young adulthood exacerbate unfavourable life outcomes in those with personality disorders?

**Design & method:** We used data from a major Australian longitudinal study, the VAHCS, which has collected data on almost 2,000 participants, on nine occasions, since the age of 14 years. We conducted a range of cross-sectional and prospective analyses examining the associations between alcohol use, alcohol use problems and mental health during adolescence and young adulthood.

**Output:** Findings related to the persistence of adolescent binge drinking into adulthood were published in *BMJ Open* in August 2013. Other papers are under review and in preparation.

**Benefits:** The analyses in this project are all novel questions that have never been answered in any Australian cohort of young people. The analyses have enormous potential to clarify the

longer-term impacts of adolescent drinking on mental health and related outcomes and thereby to inform the design of public policies to reduce these disorders. These data are of considerable importance to policymakers in health and social services and inform clinical practice.

**Funding:** Australian Rotary Health Research Fund

**Date commenced:** January 2012

**Date completed:** December 2013

## PREVENTION AND EARLY INTERVENTION

**Investigating the relationships between cannabis and other drug use, mental health, early-life factors and life-course outcomes: Integrative analyses of data from four Australasian cohort studies**

**NDARC staff:** Prof Richard Mattick, Prof Louisa Degenhardt, Dr Delyse Hutchinson, Dr Wendy Swift, Prof Jan Copeland, A/Prof Tim Slade & Dr Edmund Silins

**Other investigators:** Prof Steve Allsop (Curtin University), Carolyn Coffey (Murdoch Childrens Research Institute, University of Melbourne), Dr David Ferguson (University of Otago), Prof Wayne Hall (University of Queensland), Dr Mohammad Hayatbakhsh (University of Queensland), A/Prof John Horwood (University of Otago), Dr Primrose Letcher (Royal Children's Hospital, Deakin University), Prof Jake Najman (University of Queensland), Dr Craig Olsson (Murdoch Childrens Research Institute, University of Melbourne), Prof George Patton (Murdoch Childrens Research Institute, University of Melbourne), Dr Rachel Skinner (Children's Hospital Westmead, University of Sydney), Elizabeth Spry (Murdoch Childrens Research Institute, University of Melbourne), Dr Robert Tait (Australian National University) and Prof John Toumbourou (Deakin University)

**Project description:** This study was the first of its kind to use integrative data analyses - a highly innovative approach - to pool data from four large and long-running Australasian cohort studies to better understand the link between cannabis use and later-life outcomes. Dramatically improved knowledge of these relationships has created a clearer picture of the interventions required to reduce the harms associated with cannabis use.

**Aims:** This study had the broad aim of producing more comparable and robust findings about the linkages between cannabis use, mental health, other substance use and social development in young people. Specifically, the study aimed to:

- develop integrative analyses across four large and long-running Australasian cohorts of the linkages between the use of cannabis and secondary school completion, university degree attainment, depression, self harm, other illicit drug use, welfare and dependence
- obtain pooled estimates of the effect of cannabis use on other drug use, mental health and social development in young people to provide better estimates of the relationships between cannabis use and particular life-course outcomes
- more fully utilise existing cohort data.

**Design & Method:** The study used an integrative data analysis framework. Data were harmonised from four long-running

Australasian cohort studies which span early childhood, adolescence and young adulthood (the ATP, the CHDS, the MUSP, and the VAHCS). Combined, the studies involve over 12,000 young people.

**Outcome:** A consistent metric for the exposure variables and outcomes of interest were established across the cohort studies involved and data harmonised into a single dataset.

**Output:** Two papers have been completed and prepared for publication. An additional paper describing our investigation of the genetic prediction of early onset cannabis use and young adult outcomes is underway. Two additional papers will address child behaviour problems in the prediction of age of cannabis onset and the course of cannabis dependence in young adulthood.

Study findings were presented at the APSAD Conference (Brisbane, Queensland) and at the NIDA International Forum and the College of Problems of Drug Dependence Annual Meeting (San Diego, California). Further NHMRC funding has been received to extend the study to investigate adolescent binge-drinking using data from multiple sources.

**Benefits:** This study produced comparable analyses and better estimates of the relationships between early cannabis use and adverse life-course outcomes. The study extends previous research on the link between adolescent cannabis use and problems later in life by integrating data from multiple sources and providing control for a broader range of covariates than possible in traditional meta-analyses. The findings provide stronger evidence of the potential harms of adolescent cannabis use across multiple domains. The prevention or delay of cannabis use in adolescence may have broad health and social benefits. The findings suggest that efforts to reform cannabis legislation should be carefully evaluated to ensure they reduce adolescent cannabis use and prevent potentially adverse developmental effects.

**Funding:** NHMRC Project Grant. Conference presentations funded by NDARC and travel scholarships.

**Date commenced:** 2011

**Date completed:** 2013

## Triple B (Bumps, Babies and Beyond) - Wave III pilot follow-up of preschoolers

**NDARC staff:** Dr Delyse Hutchinson, Prof Richard Mattick, Dr Lucy Burns, Dr Judy Wilson, Chiara Stone, Sarah Brann, Danya Braunstein, Joanne Cassar, Genevieve Eckstein, Hannah Fiedler, Maria Gomez, Ingrid Honan, Clare McCormack & Stephanie Scott-Smith

**Other investigators:** Prof Stephen Allsop (Curtin University), Prof Ann Sanson (University of Melbourne), Prof Jake Najman (University of Queensland), A/Prof Craig Olsson (Deakin University), Dr Susan Jacobs (Royal Prince Alfred Hospital) & Dr Fiona Shand (Black Dog Institute, UNSW)

**Project description:** The Triple B study (Bumps, Babies and Beyond) is an ongoing large NHMRC-funded pregnancy cohort study. The study examines the effects of substance use in pregnant women and their partners during the prenatal period on infant development and family functioning. The study follows families from pregnancy through to infants aged 12 months. The objective of Wave III was to examine family functioning and child development when the children reach preschool age. The Triple B study presents

a unique and important opportunity to follow the longer-term health and development of 1,600 families as the children enter the preschool years - a critical time for development.

**Aims:** The overall objective of this project was to pilot a third wave of the Triple B birth cohort study to examine family functioning and child development in families of preschool age children.

Specifically, the aims of the project were to:

- pilot the research methodology for a new assessment wave of the Triple B study when the children reach three years of age
- examine the outcomes for an existing cohort of families participating in the Triple B study over a longer timeframe, via interview, survey and developmental assessment
- pilot an attachment component of the study to learn more about factors which influence the development of healthy relationships
- test the feasibility of following up families affected by substance use in a longitudinal study
- establish a protocol for applying for additional Category One funding from NHMRC to follow up the larger pregnancy cohort.

**Design & Method:** Mothers and their partners were interviewed and surveyed, and the children took part in a gold standard developmental assessment battery. Mothers and partners were also asked to participate in a well-established observational procedure measuring child attachment security. Data on child health and wellbeing were also collected from external sources, such as teachers and carers where relevant.

**Outcomes:** Seventy-two families participated in the pilot study.

**Output:** Data have been presented at the APSAD conference and the NDARC Annual Symposium. A paper is in preparation for submission to a peer review journal. The pilot also provided the groundwork for developing a project grant application to the NHMRC to continue the work in the full sample of 1,600 families.

**Benefits:** Extension of the Triple B study to preschool age will improve knowledge of the longitudinal course of the effects of substance use exposure in utero and during early childhood. The results will inform the NHMRC guidelines for the use of alcohol and other drugs pre-conception, in pregnancy and while breastfeeding. This will guide public health policy and education for substance use in Australia.

**Funding:** Australian Rotary Health Research Fund/Mental Health of Young Australian Research

**Date commenced:** 2012

**Date completed:** 2013

## DRUG POLICY

### Attitudes of injecting drug users towards the legal status of the major illicit drugs

**NDARC staff:** Prof Shane Darke & Michelle Torok

**Rationale:** IDU are frequently interviewed regarding drug use, risk behaviours and criminality. Users are far less frequently asked about their attitudes towards drug-related issues.

**Aim:** To determine IDU attitudes, and correlates of attitudes, towards continued prohibition, decriminalisation or legalisation of the major illicit drugs.

**Design & Method:** Structured interviews with 300 IDU who had injected on at least a weekly basis over the preceding 12 months.

**Findings:** 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.

**Output:** Findings were published in 2013 in *Drug and Alcohol Review*.

**Benefits:** IDU expressed nuanced views on different substances. In policy debates, care should be taken not to speak for IDU by imputing their beliefs. It is clear that the fact that a group uses illegal drugs does not necessarily imply that they support changes to their legal status.

**Funding:** Australian Government Department of Health

**Date Commenced:** 2012

**Date Completed:** 2013

### Australian government spending on drugs (drug budgets)

**NDARC staff:** Prof Alison Ritter & Dr Marian Shanahan

**Other investigators:** Dr Ross McLeod (Consultant, eSYS Development)

**Project description:** The aim of this project was to update and further develop Moore's (2005) Australian drug budget. As in the earlier Moore project, our study examined federal, state and territory government spending in response to illicit drugs but only included proactive spending (the amount government spent directly on illicit drug policy). The expenditures were broken down into the areas of prevention, treatment, harm reduction and law enforcement.

**Aims:** This study aimed to:

- update Moore's (2005) expenditure framework for classifying and measuring government drug spending in Australia
- develop a framework for identifying which drug-specific interventions are included in the cost analysis, along with the assumptions underpinning calculations
- calculate Australian federal and state/territory governments' annual drug expenditure for the year 2009/10.

**Design & Method:** It is important that each spending estimate is calculated using the same method. To this end, we used a top-down rather than bottom-up accounting method to estimate total spending within each category. The actual amounts calculated are less important than the relative distribution among policy pillars.

The steps involved were:

- identify all types of interventions and areas of spending. define those that are 'direct' spending
- categorise interventions into prevention, treatment, law enforcement and harm reduction
- using top-down accounting methods, access and review multiple data sources to ascertain spending estimates and calculate spending, applying adjustments as required.

**Findings:** Australian governments spent approximately \$1.7 billion in 2009/10 on illicit drug initiatives. This included programs to prevent or delay the commencement of drug use in young people, drug treatment services (including counselling and pharmacotherapy maintenance), harm reduction programs such as the needle & syringe program, police detection and arrest in relation to drug crimes, and policing the borders of Australia for illegal importation of drugs and their precursors.

\$1.7 billion equates to 0.13% of gross domestic product and 0.8% of all government spending. This translates to expenditure of \$76.28 per head in 2009/10.

The relative allocations to the four policy domains were as follows:

- Prevention: \$156.8m (9.2%)
- Treatment: \$361.8m (21.3%)
- Harm reduction: \$36.1 (2.1%)
- Law enforcement: \$1123.3m (66.0%)
- Other: \$23.1m (1.4%)
- TOTAL = \$1701.1m

**Output:** *DPMP Monograph No. 24: Government drug policy expenditure in Australia 2009/10* (published June 2013).

**Funding:** Colonial Foundation Trust

**Benefit:** This study provided information on the funding mix in illicit drug policy. Illicit drugs cause significant health, social and economic burdens to Australian society. Australian governments' investment in this area represents a tiny component of all government spending (0.8%). The extent to which the policy mix of spending across domains identified here represents efficient spending cannot be ascertained from this study; new research examining the relative cost-efficiencies for each of the four policy domains is now required.

**Date commenced:** 2010

**Date completed:** June 2013

### Drunk, high or sober: How do alcohol and illicit drug prices affect young Australians' plans for Saturday night?

**NDARC staff:** Dr Jenny Chalmers

**Other investigators:** Dr David Bright (UNSW) & Dr Rebecca McKetin (Australian National University)

**Project description:** Many young people regard alcohol and illicit drugs as part of the repertoire of products that facilitate socialising through intoxication. This has become a pressing public policy issue because the practice costs society dearly. Economic research supports increasing the price of alcohol to reduce harmful drinking, largely ignoring the possibility that alcohol will be replaced with illicit drugs. This project used an innovative internet tool to canvass young Australians' responses to hypothetical changes in prices of alcoholic beverages, cannabis and ecstasy, to improve our understanding of policies designed to minimise harmful alcohol and illicit drug use.

**Rationale:** Widespread concerns about the dangers of binge drinking by young Australians led to the National Binge Drinking Strategy in March 2008 and a 70% increase in the excise accruing to RTDs (Ready-to-Drink alcoholic beverages) a month later. Missing from debates about the use of pricing policy to reduce binge drinking was recognition of the possibility that young Australians will replace their alcohol consumption with illicit drugs. Nor was there evidence of a clear understanding of the implications of alcohol price for alcohol consumption in subgroups of the Australian population.

**Aims:** To identify how young Australians will respond to price increases in particular types of alcohol (e.g. will they drink cheaper forms of alcohol, increase their use of illicit drugs or reduce their alcohol/drug consumption) and to determine which alcohol pricing policies would minimise excessive consumption of alcohol and illicit drugs on a typical night out.

**Design & method:** This project used the internet to access a representative sample of 2,400 young Australians. It asked, using an experimental behavioural economics approach, how they would adjust their alcohol and illicit drug use over a night out in response to hypothetical changes in the prices of alcohol, cannabis and ecstasy.

**Outcome:** The BOCSAR report on alcohol pricing and taxation reform achieved its aim of positioning the empirical arm of the project in the policy debate. It has been cited in an article in *Addiction* and grey literature, including ANPHA's Draft Report *Exploring the Public Interest Case for a Minimum (floor) Price for Alcohol* (published in November 2012).

We also made two submissions to ANPHA's Draft Report: one based on the findings of the internet survey on the implications of minimum pricing for binge drinking, and another about the perceived impediments to adopting minimum pricing in Australia. The latter submission was published as a Commentary in the *International Journal of Drug Policy*.

Analysis of the rich internet survey data continue. They have been presented in a range of forums and are gradually being published.

**Output:** Papers have been published in the *International Journal of Drug Policy* and *Drug and Alcohol Review*, and a bulletin published by the NSW BOCSAR. Sixteen presentations have been made on the project thus far.

**Funding:** Australian Research Council

**Date commenced:** January 2011

**Date completed:** June 2013

### Public opinion and drug policy: Engaging the 'affected community'

**NDARC staff:** Kari Lancaster & Prof Alison Ritter

**Other investigators:** Annie Madden and Laura Liebelt (AIVL)

**Project description:** Public opinion can play an important role in determining policy and informing political processes. However, the majority of public opinion data regarding attitudes to drug policy in Australia is collected at the broader population level, and the voices of people who use illicit drugs have traditionally been marginalised within policy debate and remain under-explored. The 'affected community' notion suggests that policy should be informed by the people it most directly affects; however, we do not know, for example, if people who use drugs have similar or different views to the broader population about fundamental drug policy questions such as the role of needle & syringe programs, treatment and drug legalisation. This stymies opportunities for policy-making to be informed by those it most directly affects.

**Aims:** This project explored the attitudes and opinions of people who use drugs towards drug policy in Australia.

**Design & Method:** The project used a mixed-methods design, analysing quantitative survey and qualitative focus group data. The quantitative survey formed a supplement to the 2011 IDRS and the 2012 EDRS questionnaires, with the inclusion of drug-related policy questions drawn from the NDSHS. A sentinel sample of almost 1,000 PWID and 600 psychostimulant users in Australia were asked about their levels of support for various drug policy measures, drug legalisation, and penalties for the supply of illicit drugs. Responses were compared to the 2010 NDSHS. Qualitative focus groups with PWID were undertaken in collaboration with AIVL in Sydney and Canberra. The quantitative results were used as the springboard for detailed focus group discussions. The qualitative data were analysed in collaboration with AIVL to ensure consumer participation in all stages of the study and to access AIVL's expertise in understanding the views and perspectives of PWID.

**Findings:** There was a high level of support among IDRS participants for measures to reduce the problems associated with heroin, but heterogeneity in levels of support for legalisation and penalties for sale/supply across different drug types. Differences between the opinions of the IDRS sample and the NDSHS sample were identified regarding support for harm reduction, treatment, legalisation and penalties for sale/supply.

Qualitative focus groups were undertaken in 2012, and analysed in collaboration with AIVL. The findings of the qualitative component of the study were presented at the 2013 Dangerous Consumptions Colloquium and are planned for publication in 2014.

**Output:** 2013 output included a paper in *Drug and Alcohol Review*, a presentation at the NUAA 'Drug Policy and You' symposium (October), and presentation at the 11<sup>th</sup> Dangerous Consumptions Colloquium (December).

**Funding:** Colonial Foundation Trust; CREIDU

**Benefit:** The research may be used to inform future submissions to government and dialogue with policymakers, and help to identify key policy issues of concern to the affected community. As previous public opinion research about drug policy has focused on the attitudes of the general community, these findings will be

an essential resource for researchers, policymakers and advocacy groups alike. The findings enable rethinking of the role played by the affected community in drug policy processes, and generate better understandings of how these voices can and should be included in drug policy debate. This project also afforded the opportunity for AIVL to engage in mutually beneficial collaborative research with DPMP.

**Date commenced:** April 2011

**Date completed:** June 2013

### Strategic advocacy and drug policy: a case study of the ACT overdose management program

**NDARC staff:** Kari Lancaster & Prof Alison Ritter

**Collaborators:** Members of the Expanding Naloxone Availability in the ACT Committee (ENAACT)

**Project description:** Researchers, health professionals, consumer groups and advocates in the field have repeatedly called for widespread availability of naloxone for PWID and potential overdose witnesses, to reduce the incidence of fatal overdose. This is just one example of where Australia has (in recent years) lagged behind other countries in implementing evidence-informed harm reduction programs. By documenting and analysing the successful establishment of a recently introduced policy to make naloxone available to potential overdose witnesses in the ACT (the ENAACT program), we aimed to illuminate the mechanisms and conditions for successful strategic advocacy processes which can be applied not only to naloxone provision in other jurisdictions but to other important IDU drug policy issues.

**Aims:** The aim of this project was to document and analyse advocacy processes using a case study of the ENAACT program. This unique initiative is an example of successful policy advocacy by a circumscribed group (the ENAACT Committee) guided by the Canberra Alliance for Harm Minimisation and Advocacy (a consumer group), and therefore as a case study has the potential to provide a rich source of new knowledge about policy advocacy.

The process leading to the program's establishment was the subject of the case study analysis. This case provides an example of how drug policy development occurs in a time of 'non-emergency' (that is, in the absence of a crisis or heightened political and media concern, which is not to say that overdoses were not occurring). The case study analysis aimed to demonstrate the ways in which a collective process was used to achieve successful outcomes.

**Design & Method:** Within the single case study design (Yin, 2009) qualitative data were collected using semi-structured interviews with key individuals associated with the initiative (primarily members of the ENAACT Committee). Nine key informant interviews were conducted (via telephone or in person) with participants from across the different professional organisations who contributed their expertise to the initiative, including researchers, clinicians, policymakers, consumer advocates and peak body representatives. Interviews ranged in length from 30 minutes to over two hours, and were audio-recorded and transcribed verbatim. Participants were given the opportunity to review their transcripts for the purposes of verifying accuracy, correcting errors and providing clarification. Preliminary data analysis was undertaken by the authors using qualitative data analysis techniques to identify, analyse and

report patterns within the data (Braun & Clarke, 2006; Coffey & Atkinson, 1996). More comprehensive analysis was then undertaken collaboratively. All participants were invited to attend a face-to-face meeting to discuss the data, review the authors' preliminary interpretation and generate new insights.

**Findings:** We found that the formation of a committee structure to provide expert guidance and support was central to policy development in this case. The collective, collaborative and relational features of this group (who was involved, how they worked together, and what strategic actions were undertaken to successfully produce and enact the policy) became the focus of the final paper arising from this project. The analysis demonstrates that the Committee served more than a merely consultative role, instead actively facilitating the policy process of stakeholder engagement, communication strategy, program development and implementation planning, which led to the enactment of the naloxone program.

This analysis of the process leading to the successful establishment of Australia's first peer-administered naloxone program adds to the literature which has sought to describe and better understand the mechanisms and conditions which facilitate the implementation of new drug policy initiatives. Such analysis of how policy processes happen in real-world contemporary settings is essential for generating new and timely learning which can be interpreted and applied to inform approaches across jurisdictions and other drug policy issues.

**Funding:** Colonial Foundation Trust; CREIDU

**Benefits:** This project made a valuable addition to the literature on advocacy processes, which will be of benefit to researchers, public health professionals, consumer groups and advocates alike. The collaborative approach to analysis and dissemination will also ensure the results are translated and used in advocacy practice. In addition, we hope that the shared process of data analysis, interpretation and reporting will be a useful demonstration project for further collaborative research. The research process supported the Canberra Collaboration, which is seeking to expand and strengthen alcohol, tobacco and other drug (ATOD) research in the ACT and region, and enhance ATOD policy and its implementation through establishing a structured collaboration such as a Centre for ATOD Research, Policy and Practice in the ACT.

**Date commenced:** 2012

**Date completed:** 2013

### Tracking cocaine trends in Australia

**NDARC staff:** Dr Jenny Chalmers, Dr Caitlin Hughes & Dr Francis Matthew-Simmons

**Rationale:** There is growing law enforcement evidence that, in comparison with the period spanning 2002-03 to 2006-07, the supply of cocaine to Australia is relatively high (Hughes, Chalmers et al., 2011). This expansion in supply appears to have coincided with diversification in the trafficking routes to and through Australia (beyond Sydney, the traditional site of entry). Comparison of 2007 and 2004 NDSHS data and analyses of data from the more timely and targeted IDRS and EDRS surveys suggests parallel shifts in the geographical distribution of use. It also appears that the recent expansion in supply has been absorbed by the non-injecting population of cocaine users. This project used NDSHS data to

determine the public health implications of the perceived expansion in the supply of cocaine in Australia since 2002-03 to 2006-07.

**Aims:** To determine whether the patterns of cocaine use in the general population in 2010 were consistent with patterns in 2007 and how the patterns have evolved over the past decade.

**Design & Method:** We examined general population trends in cocaine use and harmful practices and use of related stimulants between 1998 and 2010, and conducted age-period-cohort analyses using five repeated cross-sections of the NDSHS.

**Findings:** Past-year cocaine use prevalence has increased significantly since 2004 to 2.1% in 2010 - its highest point in the past 12 years, but frequency of cocaine use has not increased. Moreover, most harmful practices (injecting, high-quantity use) have remained stable. Changes in the cocaine market appear to be related to changes in the Australian methamphetamine and ecstasy markets, including declining purity of ecstasy. For example, the cohorts of people most likely to exhibit recent cocaine use were also most likely to have used ecstasy and methamphetamine (those born from 1976 to 1984). These findings indicate that an increase in cocaine demand does not necessarily lead to substantial increases in public health harm, and indeed that the public health implications from the recent increase are likely to be negligible. Moreover, the findings suggest changes to either ecstasy or methamphetamine supply may lead to more shifts in demand for Australia's cocaine market.

**Output:** Findings were published in 2013 in *Current Drug Abuse Reviews*.

**Funding:** Colonial Foundation Trust

**Date commenced:** October 2012

**Date completed:** March 2013

### Treatment pathways from the client's perspective: informing a better match between service provision and service need

**NDARC staff:** Dr Jenny Chalmers & Prof Alison Ritter

**Project description:** The NSW Ministry of Health is leading a project to develop a national population-based model for AOD service planning, known as the National Drug and Alcohol Clinical Care and Prevention Modelling Project (DA-CCP). Central to the project is the establishment of a set of ideal treatment pathways, which represent the services that a typical client (categorised by age, severity of dependence and drug type) receives over the course of a typical year.

**Aims:** The goal of this project was to generate empirical data showing the treatment pathways taken by people before they enter the Opioid Treatment Program (OTP) in NSW. The project aimed to make service system development recommendations for policymakers based on the documented treatment pathways and an assessment of the implications of inaccessibility of treatment for the pathways taken.

**Design & Method:** The centrepiece of the project was a census of people who entered OTP in NSW during September and October 2012, using a self-complete instrument mailed to their dispensing point.

**Outcome:** The survey was completed in 2012 and a report presented to the NSW Ministry of Health in January 2013.

**Output:** A report for the NSW Ministry of Health and a presentation to the NSW Health Drug and Alcohol Program Council in April 2013.

**Funding:** NSW Ministry of Health

**Date commenced:** March 2012

**Date completed:** February 2013

### Using evidence to evaluate Australian drug trafficking thresholds: Proportionate, equitable and just?

**NDARC staff:** Dr Caitlin Hughes & Prof Alison Ritter

**Other investigators:** Nicholas Cowdery (Faculty of Law, UNSW)

**Project description:** Most Australian states and territories have adopted drug trafficking thresholds which specify quantities of drugs, over which it is *presumed* an offender has committed an offence of 'drug trafficking', rather than 'possession for personal use'. Yet, in spite of known risks from adopting such thresholds, particularly of an unjustified conviction of a user as a trafficker, the capacity to deliver proportional sanctioning has been subject to little research to date. In this study we evaluated the capacity of trafficking thresholds for five drug types (heroin, methamphetamine, cocaine, MDMA and cannabis) in all six Australian states (NSW, Victoria, Queensland, SA, Tasmania and WA) to deliver proportional, fair and just sanctioning of drug offenders.

**Aims:** The purposes of this study were to:

- evaluate whether the trafficable thresholds for five different drugs allow the prosecution and the judiciary to properly distinguish drug users from traffickers and to enable sanctions based on the relative seriousness of a drug trafficking offence
- compare and contrast threshold design across Australia, taking into account inter-state differences in current legal thresholds and drug markets
- determine whether the problems identified with the Australian Capital Territory's drug trafficking thresholds are common across state systems.

**Design & Method:** For each state we evaluated the applicable trafficable threshold quantity against two metrics of the quantity of a drug that a user is likely to possess for personal use alone (typical patterns of use and purchasing) and three metrics of the actual/potential seriousness of a drug trafficking offence to the Australian community (retail value, harm and social cost). Data for each of the five metrics were derived from an array of sources. For example, data on typical patterns of drug use were sourced from three different national surveys: two of regular drug users (the 2011 IDRS and the 2011 EDRS) and one from the general population (the 2010 NDSHS).

**Findings:** The project revealed that regardless of the drug or state, most median and mean quantities that Australian drug users report consuming or purchasing are lower than the trafficable thresholds. This indicates that most users are at minimal risk of exceeding the trafficable thresholds when they follow typical use and purchase patterns. On the other hand, the maximum consumed or purchased is often higher than the trafficable thresholds. This indicates that particular groups of users are at risk of an erroneous charge as a trafficker (most notably users of MDMA and users in NSW and

SA), particularly when they purchase in bulk or have a session of high use (a binge). We show that the risks in such circumstances are exacerbated by the idiosyncratic Australian criminal justice response to drug traffickers. We outline a number of ways to reduce risks to users, including legislative reforms to elevate threshold quantities for some drugs/states.

**Output:** Two reports were submitted and released in early 2014. Three presentations were made throughout 2013.

**Funding:** Australian Institute of Criminology - Criminology Research Grants

**Benefit:** This project's results will enable Australian policymakers and legislators to re-assess the current design of Australian drug trafficking thresholds.

**Date commenced:** January 2012

**Date completed:** January 2013

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

**NDARC staff:** Prof Alison Ritter, Dr Francis Matthew Simmons & Kari Lancaster

**Other investigators:** Jozica Kutin & Andrew Bruun (Youth Support and Advocacy Service)

**Rationale:** Research has largely focussed on young people's alcohol and drug use. However the investigation of young people's opinions and ideas about policies, programs and control measures aimed at reducing the harms caused by alcohol and other drugs has, to date, been limited. As in all policy areas, consultation with the relevant stakeholders is an important part of the process of effective AOD policymaking. The voices of young people are thus critical in helping to develop successful responses to AOD issues in Australia.

**Aims:** To describe and better understand young people's opinions about AOD policy.

**Design & method:** An online survey was designed which aimed to elicit opinions about a comprehensive array of AOD policies, programs and control measures. This included prevention measures such as drug education in schools and mass media campaigns; alcohol regulation including alcohol pricing, monitoring of licensed premises and restrictions on late night trading; law enforcement activities such as police presence and sniffer dogs; treatment services including withdrawal, residential rehabilitation and pharmacotherapies; and harm reduction activities such as pill testing services and needle & syringe programs. The survey was administered via the internet and young Australians aged between 16 and 25 years were eligible to participate (anonymously).

**Outcome:** Recruitment is complete, with over 2,000 respondents surveyed. Quantitative and qualitative data analysis is complete and the final report will be published by the Australian National Council on Drugs (ANCD).

**Output:** A report is due to be published by the ANCD in 2014.

**Funding:** ANCD

**Date commenced:** April 2012

**Date completed:** April 2013

## INDIGENOUS

### The feasibility and effectiveness of a family-based intervention for Indigenous Australians with alcohol dependence

**NDARC staff:** Anthony Shakeshaft, Bianca Calabria & Chiara Stone

**Other Investigators:** Dr Anton Clifford (University of Queensland), Prof Christopher Doran (University of Newcastle), Prof Komla Tsey (James Cook University), Miranda Rose (University of Technology, Sydney), Dr Julaine Allan and Dr Rod MacQueen (The Lyndon Community) & Ms Donna Bliss (Yoorana Gunya).

**Project description:** Indigenous Australians experience a disproportionately high burden of alcohol-related harm relative to the general population. These alcohol-related harms are typically cumulative, extending beyond the individual to the family and community. Too few Indigenous-specific intervention programs address these harms, and few rigorous evaluations of Indigenous-specific alcohol interventions exist.

Empirical studies show that family-based approaches can be effective for reducing alcohol-related harms among high-risk drinkers and the negative effects of alcohol misuse on other family members. Family relationships have always been vital to the cohesion and wellbeing of Indigenous communities. What happens at the family level shapes the social functioning of Indigenous Australian communities and the wellbeing of individuals. The strength of relationships between Indigenous individuals, their families and communities suggests that family-based approaches are likely to be effective for reducing alcohol-related harm among Indigenous Australians.

**Aims:** This study aimed to assess the acceptability, feasibility and likely cost-effectiveness of an individually-focused Community Reinforcement Approach (CRA) and family-focused Community Reinforcement and Family Training (CRAFT) for Indigenous individuals with alcohol use problems, delivered in the context of routine Indigenous-specific health-care services.

**Design & Method:** A demonstration project, using a pre/post intervention study design, to evaluate the feasibility, acceptability and likely cost-effectiveness of CRA and CRAFT for individuals who use alcohol problematically, delivered by a rural drug and alcohol treatment agency.

**Outcomes:** A survey to assess the acceptability of CRA and CRAFT for delivery to Aboriginal Australians was completed. Survey findings have been used to identify specific components of CRA and CRAFT that required modification to optimise their uptake during the intervention phase of the project.

A training package (combining two clinical manuals and a program of training and outreach support) to support healthcare providers to deliver the CRA and CRAFT programs to their clients in routine health care has been developed by researchers in collaboration with healthcare providers from an Aboriginal Community Controlled Health Service and an AOD treatment agency.

Healthcare providers who deliver the interventions have completed an internationally recognised certified program for CRA and CRAFT. Two healthcare providers have also completed a CRAFT supervisor certification program and will provide ongoing supervision for health care providers delivering CRA and CRAFT.

Recruitment into CRA and CRAFT began in March 2013 and was completed in December 2013. Follow-up assessments continue until mid-2014.

**Output:** Output in 2013 included two papers (under review), presentations at the Global Addiction Conference in Italy (May) and the UNSW School of Public Health and Community Medicine Research Symposium (September), and posters at two UNSW research symposiums.

**Funding:** NHMRC

**Date commenced:** March 2010

**Date completed:** December 2013

## CRIMINAL JUSTICE SYSTEM

### Exploring the relationship between cannabis use and crime among adolescents

**NDARC staff:** Melanie Simpson, Prof Jan Copeland & Dr John Howard

**Project description:** Within both the Australian and international literature, the association between substance use and criminal activity is well established. The nature of the relationship, however, is still widely debated, with no overall consensus on how crime and substance use influence each other. The evidence linking cannabis to crime is no exception.

Among those who come into contact with the criminal justice system in Australia, cannabis remains the most widely used and most commonly detected drug. Young offenders who go on to spend time in custody, in particular, continue to use cannabis at very high rates despite an overall decline in use among the general population of the same age.

Despite the acknowledged association between substance use and offending, little research has focused specifically on the role of social factors, situations and the environment on first cannabis use, first involvement in crime and the initial and ongoing relationship between the two. This study therefore aimed to explore further the complex relationship between cannabis use and offending through the use of three smaller studies: a secondary analysis of DUMA data collected between 2006 and 2010, a prospective follow-up study of 300 young people with varying levels of involvement with the criminal justice system, and a qualitative study of 20 young people with a history of regular cannabis use and involvement in the criminal justice system.

**Aims:** This study aimed to increase understanding of the complex relationship between substance use and criminal offending, focusing specifically on cannabis use and crime among adolescents. A primary aim of the study was to examine the social factors and situations that contribute to first cannabis use and first involvement in crime and how the two relate.

**Design & Method:** The project was comprised of three smaller studies:

- a secondary analysis of DUMA data to compare the prevalence, trends and patterns of substance use and criminal offending among cannabis-using adult and adolescent police detainees

- a prospective follow-up study of 300 young people who report varying levels of involvement with the criminal justice system in NSW
- an in-depth qualitative study of 20 young people who reported a history of contact with the criminal justice system and cannabis use.

**Findings:** A total of 302 baseline and 134 follow-up interviews were collected. An additional 15 qualitative interviews were conducted with 20 participants. Results from study one showed younger participants were more likely to have recently used cannabis, initiated at a younger age and to have recently received more criminal charges. A mental health diagnosis was a significant predictor of recent charges among detainees whose past year illicit drug use was limited to cannabis. Results from the second study showed that use of cannabis prior to involvement in crime was found to influence the speed of progression from first to regular offending. In the final study, the immediate social environment was found to play a strong role in the initiation, acceptance and normalisation of cannabis use and offending.

**Output:** Findings were reported in Melanie Simpson's PhD thesis, *Caught red-eyed and red-handed: An exploration of cannabis use and criminal offending*.

**Benefits:** The findings of this study will prove useful in the development of targeted cannabis intervention programs, particularly among individuals whose immediate social environment place them at increased risk for early involvement in cannabis use and crime.

**Funding:** Australian Government Department of Health

**Date commenced:** July 2008

**Date completed:** November 2013

### Promoting compliance, 'recovery' and 'desistance': Comparative case studies of pre-sentence diversion schemes for drug misusing arrestees in Australia and England

**NDARC staff:** Tim McSweeney, Dr Caitlin Hughes & Prof Alison Ritter

**Other investigators:** Paul Turnbull (Institute for Criminal Policy Research, University of London)

**Project description:** A growing body of research evidence demonstrates the impact of a range of pre-sentence diversion options at engaging substance misusing defendants in treatment, and reducing illicit drug use and related offending in both Australian and British contexts. However, given their main focus on measuring and quantifying impacts, this work tends to be atheoretical and is virtually silent when it comes to explaining the dynamic and interactive processes which might facilitate or hinder these positive outcomes. The broader justifications for and potential value of the research conducted during this project centre on its uniquely comparative and multidisciplinary nature, bringing together public health, criminological and socio-legal perspectives on the processes and outcomes of attempts to facilitate both engagement and behaviour change amongst drug misusers coming into contact with the criminal justice system in different jurisdictions and settings.

**Aims:** Using two models of pre-sentence diversion as case studies, one 'voluntary' scheme in Australia, the other a 'compulsory' model in England known as Tough Choices, this research sought to better understand (in broad terms):

- how different participants in these settings define and measure 'success'
- to what extent the schemes deliver on their intended outputs and outcomes
- how aspects of policy, program design and delivery impact on outcomes
- how processes might be refined and adapted in order to further improve outcomes.

More specifically, the research aimed to assess, using various administrative datasets, the extent to which these two pre-sentence diversion schemes:

- secure 'formal' compliance (as measured by program engagement and completion rates)
- promote 'recovery' from dependent drug use (defined as the absence of, or a progressive reduction in, the number and intensity of substance use related problems)
- encourage 'desistance' from crime (defined as a cessation in offending or a significant reduction in the frequency and seriousness of offending).

The next phase of the research involved in-depth interviews with various purposively sampled participants to identify and understand the mechanisms through which these outputs and outcomes are achieved. For example, what strategies do these schemes employ to engage and retain different types of participant, such as narcotic and stimulant users, in treatment long enough for them to derive any benefit? How do these interventions affect behavioural change with an intractable group, often within a short period of time?

**Design & Method:** The research utilised both quantitative and qualitative methods and made use of a range of primary and secondary data sources. The main methodological approaches adopted in each site in order to answer the key research questions posed by this thesis were:

- content analysis of existing documentation (e.g. in order to explore the extent of adherence to established best practice principles, and consistency between stated policy and actual practice between sites)
- linkage of existing administrative datasets to assess the extent of formal compliance, recovery and desistance (e.g. in NSW this involved utilising data from the MERIT Information Management System, the BOCSAR Re-Offending Database (ROD) and, for the purposes of assembling a comparison group, NSW Correctional Services OIMS data)
- in-depth qualitative interviews with 30 defendants and 30 professional stakeholders to illuminate and better understand related processes and mechanisms in each setting.

The research had two goals: firstly, to examine the extent to which each program was effective in promoting compliance, recovery and desistance from crime; secondly, to better understand how and why aspects of program theory, implementation and delivery aided or impeded the achievement of each objective. Secondary

analysis of eight linked administrative datasets and primary data from semi-structured interviews with respondents in England) and Australia were subjected to theoretically driven analysis in order to test the relevance and application of three existing typologies of compliance, recovery and desistance processes to a diversionary context.

**Findings:** We conducted 65 semi-structured interviews with 29 respondents in England and 36 in Australia. Rates of formal compliance across the two approaches were moderate, and not in the direction anticipated. While there was evidence of reductions in illicit drug use and related problems, there were equivocal findings on the ability of these approaches to tackle drug dependency or facilitate behavioural change via engagement with treatment. Most importantly, while there were significant reductions in the rate, volume and seriousness of re-offending among those exposed to both programs, equivalent reductions were observed for matched drug misusers not engaging with these interventions.

The two approaches encountered challenges in applying concepts of compliance, recovery and desistance into practice due to factors linked to policy, implementation and delivery. Key implications for drug-related diversion include the need for theoretically and empirically informed adaptations to the type of offenders targeted by these programs, and a sharper focus on addressing structural and environmental factors which may inhibit behaviour change.

**Output:** In 2013 Tim McSweeney submitted his PhD thesis based on this research and presented preliminary findings at the NDARC annual symposium (September) and the 6<sup>th</sup> Australasian Drug and Alcohol Strategy Conference (March).

**Funding:** Colonial Foundation Trust

**Date commenced:** August 2009

**Date completed:** August 2013

# STAFF AND STUDENT LIST

## Office of the director

<b>Michael Farrell</b>	Professor, Director NDARC
<b>Alison Ritter</b>	Professor, Deputy Director NDARC, Director DPMP
<b>Anthony Shakeshaft</b>	Associate Professor, Deputy Director NDARC
<b>Karen Hill</b>	Centre Operations Manager
<b>Gemma Nevin</b>	Centre Operation Manager - Acting
<b>Marion Downey</b>	Communications and Media Manager

## Academic staff

<b>David Allsop</b>	Lecturer, NCPIC
<b>Emma Barrett</b>	Post-Doctoral Research Fellow
<b>Lynda Berends</b>	Senior Research Fellow
<b>Deborah Bradford</b>	Post Doctoral Research Fellow
<b>Courtney Breen</b>	Post Doctoral Research Fellow
<b>Heather Buchan</b>	Research Associate
<b>Lucy Burns</b>	Senior Lecturer
<b>Natacha Carragher</b>	Research Fellow
<b>Jenny Chalmers</b>	Senior Research Fellow
<b>Cath Chapman</b>	Senior Research Fellow
<b>Nicole Clement</b>	Lecturer
<b>Jan Copeland</b>	Professor, Director NCPIC
<b>Ryan Courtney</b>	Post-Doctoral Research Fellow
<b>Shane Darke</b>	Professor, Convenor Research Staff Prof Dev Program
<b>Louisa Degenhardt</b>	Professor & NHRMC Senior Research Fellow
<b>Kate Dolan</b>	Professor
<b>Peter Gates</b>	Research Officer, NCPIC
<b>Natasa Gisev</b>	Post-Doctoral Research Fellow
<b>Phuong Hoang</b>	Economist
<b>John Howard</b>	Senior Lecturer, NCPIC
<b>Caitlin Hughes</b>	Research Fellow
<b>Delyse Hutchinson</b>	Senior Research Fellow
<b>Sharlene Kaye</b>	Senior Research Fellow
<b>Frances Kay-Lambkin</b>	NHRMC Post-Doctoral Research Fellow
<b>Jo Kimber</b>	Lecturer
<b>Briony Larance</b>	Lecturer
<b>Sarah Larney</b>	Post-Doctoral Research Fellow
<b>Michael Livingston</b>	Post-Doctoral Research Fellow
<b>Christina Marel</b>	Post-Doctoral Research Fellow
<b>Francis Matthew-Simmons</b>	Research Associate
<b>Richard Mattick</b>	Professor
<b>Katherine Mills</b>	Senior Lecturer

<b>Nicola Newton</b>	UNSW Vice Chancellor's Post-Doctoral Research Fellow
<b>Melissa Norberg</b>	Senior Lecturer, NCPIC
<b>Sally Rooke</b>	Research Fellow, NCPIC
<b>Joanne Ross</b>	Senior Lecturer
<b>Marian Shanahan</b>	Health Economist
<b>Edmund Silins</b>	Lecturer
<b>Tim Slade</b>	Associate Professor
<b>Janette Smith</b>	Research Fellow
<b>Emily Stockings</b>	Post-Doctoral Research Fellow
<b>Matthew Sunderland</b>	Research Fellow
<b>Wendy Swift</b>	Senior Lecturer
<b>Maree Teesson</b>	Professor & NHRMC Senior Research Fellow
<b>Judy Wilson</b>	Post-Doctoral Research Fellow
<b>Fenglian Xu</b>	Statistician

## Professional and technical staff - research

<b>Alex Aiken</b>	Senior Research Officer
<b>Dion Alperstein</b>	Research Officer, NCPIC
<b>Emilie Awbery</b>	Research Officer
<b>Jessica Belcher</b>	Research Officer
<b>Louise Birrell</b>	Research Assistant
<b>Emma Black</b>	Senior Research Officer - Maternity Leave
<b>Veronica Boland</b>	Research Officer
<b>Sarah Brann</b>	Research Officer
<b>Danya Braunstein</b>	Research Assistant
<b>Kerryn Butler</b>	Research Officer
<b>Gabrielle Campbell</b>	Senior Research Officer
<b>Philip Clare</b>	Research Officer
<b>Genevieve Eckstein</b>	Research Assistant
<b>Sarah Ellis</b>	Research Assistant
<b>Philippa Ewer</b>	Research Officer
<b>Hannah Fiedler</b>	Research Officer
<b>Sarah Freckleton</b>	Research Assistant
<b>Joanne Gilsean</b>	Senior Research Officer
<b>Maria Gomez</b>	Senior Research Officer
<b>Rachel Grove</b>	Research Officer
<b>Karina Hickey</b>	Research Assistant, NCPIC
<b>Ingrid Honan</b>	Research Assistant
<b>Toni Hordern</b>	Research Assistant
<b>Philip Hull</b>	Research Officer
<b>Sally Hunt</b>	Project Manager
<b>Jaimi Iredale</b>	Research Officer
<b>Ivana Kihias</b>	Research Officer

# STAFF AND STUDENT LIST

<b>Xanthe Larkin</b>	Research Officer
<b>Evelyn Lee</b>	Research Assistant
<b>Eva Louie</b>	Research Assistant
<b>David McKell</b>	Research Assistant
<b>Ranira Moodley</b>	Research Assistant
<b>Natasha Nair</b>	Research Assistant
<b>Stephanie O'Donnell</b>	Project Officer
<b>Katrina Prior</b>	Research Officer
<b>Madeleine Randell</b>	Research Officer, NCPIC
<b>Ana Rodas</b>	Research Assistant
<b>Daniel Rodriguez</b>	Research Assistant
<b>Julia Rosenfeld</b>	Research Psychologist
<b>Stephanie Scott-Smith</b>	Research Officer
<b>Laura Sims</b>	Research Assistant
<b>Lisa Sin</b>	Research Assistant
<b>Natasha Sindicich</b>	Senior Research Officer
<b>Kimberley Smith</b>	Research Assistant
<b>Jenny Stafford</b>	Senior Research Officer
<b>Chiara Stone</b>	Senior Research Officer
<b>Rachel Sutherland</b>	Research Officer
<b>Zoe Tonks</b>	Research Assistant
<b>Rachel Urquhart</b>	Research Assistant
<b>Joe Van Buskirk</b>	Research Assistant
<b>Joanne White</b>	Research Assistant
<b>Scarlet Wilcock</b>	Research Assistant

## Professional and technical staff - administration

<b>Tori Barnes</b>	Administrative Officer, NCPIC
<b>Jasmin Bartlett</b>	Administrative Officer/EA
<b>Chris Coombes</b>	IT Officer
<b>Crisanta Corpus</b>	Finance Manager
<b>Paul Dillon</b>	Communications Manager, NCPIC
<b>Jackie Du</b>	Finance Officer
<b>Colleen Faes</b>	Administrative Officer, DPMP
<b>Carly Harris</b>	Executive Assistant, NCPIC - Maternity Leave
<b>Julie Hodge</b>	Administrative Officer/EA
<b>Mary Kumvaj</b>	Librarian
<b>Clare Le (Chenoweth)</b>	Communication Officer, NCPIC - Maternity Leave
<b>Mauricia Lopes</b>	Management Accountant
<b>Etty Matalon</b>	National Clinical Training Manager, NCPIC
<b>Jelynn Millare</b>	Administrative Assistant/Receptionist
<b>Morag Millington</b>	Communications Officer, NCPIC - Maternity Leave

<b>Erin O'Loughlin</b>	Communications Officer
<b>John Redmond</b>	Research Assistant, NCPIC
<b>Jemma Sale</b>	Executive Assistant
<b>Carla Santos</b>	Administrative Officer
<b>Matthew Tooth</b>	Communications Officer, NCPIC

## Doctoral candidates

<b>Zahra Alam Mehrjerdi</b>	International Student from Iran
<b>Lucy Albertella</b>	Research Officer
<b>Dam Anh Tran</b>	Senior Research Officer
<b>Ansari Bin Jainullabudeen</b>	Senior Research Officer
<b>Bianca Calabria</b>	Senior Research Officer
<b>Katrina Champion</b>	Research Officer
<b>Mark Deady</b>	Senior Research Officer
<b>Bianca Hoban</b>	Research Assistant
<b>Amy Johnston</b>	Research Associate
<b>Erin Kelly</b>	Research Psychologist
<b>Alice Knight</b>	Research Assistant
<b>Kari Lancaster</b>	Senior Research Officer
<b>Lynne Magor Blatch</b>	Doctoral Candidate
<b>Anika Martin</b>	Research Assistant
<b>Clare McCormack</b>	Research Assistant
<b>Timothy McSweeney</b>	Doctoral Candidate
<b>Sonja Memedovic</b>	Research Officer
<b>Paul Nelson</b>	Research Officer
<b>Larissa Rossen</b>	Research Officer
<b>Amanda Roxburgh</b>	Senior Research Officer
<b>Melanie Simpson</b>	Doctoral Candidate
<b>Mieke Snijder</b>	Research Officer (Internship student from Wageningen University Netherlands)
<b>Michelle Tye</b>	Senior Research Officer
<b>Thu Vuong</b>	Research Assistant
<b>Monika Wadolowski</b>	Senior Research Officer
<b>Elizabeth Whittaker</b>	Research Officer
<b>Kathryn Woodcock</b>	Research Officer

## Conjoint staff

<b>Amanda Baker</b>	Professor
<b>Raimondo Bruno</b>	Senior Lecturer
<b>Katherine Conigrave</b>	Professor
<b>Johan Duflo</b>	Associate Professor
<b>Matthew Dunn</b>	Senior Lecturer
<b>Paul Haber</b>	Professor
<b>Wayne Hall</b>	Professor

<b>Alys Havard</b>	Research Fellow
<b>Trevor King</b>	Lecturer
<b>Andrea Mant</b>	Associate Professor
<b>Mark Montebello</b>	Lecturer
<b>Elizabeth Moore</b>	Lecturer
<b>Catherine Spooner</b>	Senior Lecturer
<b>Ingrid Van Beek</b>	Senior Lecturer
<b>Deborah Zador</b>	Senior Lecturer

### Visiting academic staff

<b>Kevin Gournay</b>	Visiting Fellow
<b>Carl Lejuez</b>	Visiting Fellow
<b>Rebecca McKetin</b>	Visiting Fellow
<b>Eleni Michael</b>	UNSW Psychology Masters Student
<b>Lucie Swaffield</b>	UNSW Psychology M aster Student
<b>Stephanie Taplin</b>	Visiting Research Fellow

### Miscellaneous staff

<b>Margaret Eagers</b>	Contractor
<b>Kati Haworth</b>	NET Business Manager

# EXTERNAL APPOINTMENTS

## Memberships of External Committees, Advisory Boards and Editorial Boards

### Dr Lucinda Burns

Member, Drugs in Pregnancy Advisory Group, NSW Ministry of Health

Member, FASD Advisory Group, NSW Ministry of Health

Director, Haymarket Foundation for Homeless People with Substance Abuse Problems (2004-present)

Academic member, Drug and Alcohol Council, Research Sub-Committee, NSW Health (2009-present)

Trustee, NDARC Educational Trust (2009-present)

Deputy chair, NSW Population and Health Services Research Ethics Committee (2010-present)

Convenor, UNSW Medical/Community Human Research Ethics Advisory Panel (2011-present)

### Dr Natacha Carragher

Editor, *Social Psychiatry and Psychiatric Epidemiology* (2013-present)

Convener of the Early Career Researcher Workshop at the Annual Meeting of the Australasian Society for Psychiatric Research (Melbourne, 4 December 2013)

Early Career Research Network Representative for the Australasian Society for Psychiatric Research (2013-present)

### Dr Jenny Chalmers

Member, The Alcohol and Drug Council of Australia's Human Services/Systems Working Group (2010-present)

### Dr Cath Chapman

Member, management committee, The Mental Health Services Conference of Australia and New Zealand (2000-present)

Member, conference proceedings editorial board, The Mental Health Services Conference of Australia and New Zealand (1998-present)

Co-convener, The Mental Health Services Conference of Australia and New Zealand Summer Forum (2008-present)

### Prof Jan Copeland

Chair, US College on Problems of Drug Dependence (CPDD) International Committee (2012-2015), member from 2010

President, board of management, Drug and Alcohol Multicultural Education Centre (DAMEC) (2002-present)

Member, board of management of Odyssey House: The McGrath Foundation, a non-government therapeutic community; co-chair of the Operations Committee (2004-present)

Associate editor (Services and Prevention, Technology Transfer, and Treatment), *Drug and Alcohol Dependence* (2011-present)

Assistant editor, *Journal of Substance Abuse Treatment* (2001-present)

Editorial board member, *Addiction Science and Clinical Practice* (2010-present)

Member, Cannabis Working Group for NSW Health (2007-present)

Member, Drug and Alcohol Health Promotion Subcommittee of the Drug and Alcohol Program Council, NSW Department of Health (2011-2013)

Member, Australian Cannabis Cohort Research Consortium (2008-2013)

Member of the Australian Government's Intergovernmental Committee on Drugs Working Party on the national minimum data set (2004-present)

### Prof Shane Darke

Regional editor, *Addiction* (2006-present)

Editorial board member, *Drug and Alcohol Dependence* (1993-present)

Assistant editor, *Journal of Drug Issues* (2006-present)

### Prof Louisa Degenhardt

WHO: Technical Advisory Group member for the eleventh revision of the International Classification of Diseases (ICD) Injury and External Causes of Injury (2009-2013)

Associate member, Australian Institute of Policy and Science (2009-present)

Member, Epidemiology and Public Health Section, World Psychiatric Association (2008-present)

Associate faculty member, Faculty of 1000 Medicine (2008-present)

Member, International Collaboration on ADHD and Substance Abuse (ICASA) (2008-present)

Member, Australian National Association of Research Fellows (NARF) (2007-present)

Member, 2013 National Drug Strategy Household Survey Technical Advisory Group (2012-2014)

Member, Australian Cannabis Cohort Research Consortium (2008-present)

Member, panel providing Specialist Scientific Services to the Australian Federal Police Forensic and Data Centres (2009-present)

Editorial board member, *Substance Abuse Treatment, Prevention and Policy* (2009-present)

Editorial board member, *International Journal of Drug Policy* (2005-present)

Editorial board member, *Drug and Alcohol Review* (2005-present)

Editorial board member, *BMC Psychiatry* (2005-present)

Member of International Advisory Group, 14th International Congress of the International Federation of Psychiatric Epidemiology, Leipzig, Germany 5-8th June 2013

NHMRC grant review panel member (mental health, psychiatry and psychology) 2013  
NHMRC Centres for Research Excellence review panel 2012-2013

### Prof Kate Dolan

Member, World Health Organization Network for HIV and Health in the Western Pacific Region (2009-present)

Member, ANEX's Harm Minimisation in Prisons Committee (2008-present)

Member, UNODC Expert Group on the Comprehensive Package for HIV in Prisons (2011-present)

Member, Asia-Pacific Drug and Development Issues Committee (APDDIC), Australian National Council on Drugs (2011-present)

### Prof Michael Farrell

Member, European Monitoring Centre for Drugs and Drug Addiction (2007-2013)

Member, World Health Organization expert committee on Drug Dependence (1996-present)

Member, Quality in Treatment (QIT), NSW Health (2011-present)

Member, Asia-Pacific Drug and Development Issues Committee (APDDIC), Australian National Council on Drugs (2011-present)

Member, Health Science Alliance (2012-present)

Member, Department of Health Review Advisory Committee (2013-present)

Editorial advisory board member, *The Lancet Psychiatry* (2013-present)

### Dr Peter Gates

Assistant editor, *Journal of Healthcare Informatics* (2013-present)

### Dr John Howard

Member, ANCD Asia-Pacific Drug Issues Committee (2004-present)

Member, NSW Child Death Review Team (2004-present)

Board member, National Centre for Education and Training on Addiction (NCETA) (2005-present)

Member, clinical advisory panel, Family Drug Support (2002-present)

Member, NSW Ministerial Advisory Committee on Hepatitis (2008-2013)

Member, advisory group, Quality in Treatment (QIT), NSW Health (2002-present)

Member, Research Sub-committee, Drug and Alcohol Multicultural Education Centre (DAMEC) (2010-present)

Member, consulting editors group, *Youth Studies Australia* (2010-present)

Member, Emerging Psychoactive Substances Advisory Group, NSW Ministry of Health (2103-present)

### Dr Caitlin Hughes

Member, *Of Substance* editorial reference group (2011-present)

Member, UNSW Faculty of Medicine Postdoctoral Advisory Committee (2011-present)

# EXTERNAL APPOINTMENTS

## Dr Delyse Hutchinson

Co-convenor and member, longitudinal studies network, Australian Research Alliance for Children and Youth (ARACY) (2011-present)

Co-Director and member, Australian Cannabis Cohort Research Consortium (CCRC) (2006-present)

Organisational member, Australian Research Alliance for Children and Youth (ARACY) (2005-present)

## Dr Sharlene Kaye

Assistant editor, *Addiction* (2009-present)

Board member (secretary), International Collaboration on ADHD and Substance Abuse (ICASA) (2010-present)

## Dr Frances Kay-Lambkin

Member, NHMRC Research Translation Faculty (2012-present)

Member, executive committee, Special Interest Group on Telephone and Internet Treatment, Australian Psychological Society (2010-present)

Secretary, executive committee, Australasian Society for Psychiatric Research (2010-present)

Member, centre management committee, Centre for Translational Neuroscience and Mental Health, University of Newcastle (2010-present)

Member, research management committee, School of Medicine and Public Health, University of Newcastle (2010-present)

## Mary Kumvaj

Member, National Drug Sector Information Service (NDSIS) Advisory Committee (2009-present)

## Dr Michael Livingston

Board member, Australian Rechange Foundation (2013-present)

Member, Alcohol and Drug Council of Australia Working Group on Alcohol (2012-present)

Member, VicHealth Cultural Change Research Reference Group (2013-present)

Member, Victorian Alcohol Policy Coalition (2009-present)

Member, National Alliance for Action on Alcohol (2011-present)

Member, coordinating committee of the Kettil Bruun Society for Social and Epidemiological Research on Alcohol (2012-present)

Assistant editor, *Addiction* (2010-present)

Deputy editor, *Drug and Alcohol Review* (2012-present)

## Prof Richard Mattick

Member, NSW Minister of Health Expert Advisory Group on Drugs (2004-present)

Member, Alcohol Beverages Advertising Code adjudication panel (2005-present)

Member, Sax Institute Research Partnerships for Better Health (2006-present)

## Dr Katherine Mills

Member, NHMRC Research Translation Faculty (2012-present)

Member, Community Mental Health Drug and Alcohol Research Network Steering Committee (2011-present)

Assistant editor, *Addiction* (2010-present)

Deputy editor, *Drug and Alcohol Review* (2010-present)

## Dr Nicola Newton

Member, NHMRC Research Translation Faculty (2013-present)

Member, Prevention Science Network, Australian Research Alliance for Children & Youth (2012-present)

Advisory board member, Angelus Foundation (Expert committee on legal highs in the UK) (2010-present)

## Dr Melissa Norberg

Associate editor, *International Journal of Mental Health and Addiction* (2011-present)

## Prof Alison Ritter

President, International Society for the Study of Drug Policy (2011-present)

Vice President, Alcohol and Drug Council of Australia (2011-present)

Member, Board of Directors, Alcohol and Drug Council of Australia (2010-present)

Editor, *Drug and Alcohol Review* (2001-present)

Associate editor, *Journal of Drug Policy Analysis* (2010-present)

Associate editor, *International Journal of Drug Policy* (2011-present)

Chair, expert reference group, National Drug and Alcohol Clinical Care and Prevention Modelling Project (2010-present)

Advisory panel member, Development of needs-based planning models for substance use services and supports in Canada (Health Canada funded) (2011-present)

Member, Global Science Group for Addictions and Lifestyles in Contemporary Europe (ALICE) project (2011-present)

Chair, Drug Policy Working Group, National Institute on Drug Abuse (2011-present)

Member, National Drug Strategy Household Survey Technical Advisory Group (2009-present)

Technical advisor, International Centre for Science in Drug Policy (2011-present)

Member, Australian Government Department of Health and Ageing Partners In Recovery Expert Reference Group (2012-present)

Member, Alcohol's Harm to Others Advisory Group (2012-present)

## Dr Joanne Ross

Assistant editor, *Addiction* (2006-present)

Member of the Allied Health Worker Advisory Committee, NSW Health (2010-present)

## A/Prof Anthony Shakeshaft

NHMRC Council (2012-present)

Member, International Network on Brief Interventions for Alcohol and Other Drugs (2011-present)

Conjoint Associate Professor, Faculty of Health, University of Newcastle (2010-present)

Assistant editor, *BMC Public Health* (2010-present)

## A/Prof Tim Slade

Member, expert advisory group for the second National Child and Adolescent Mental Health Survey (2011-present)

Regional editor, *Social Psychiatry and Psychiatric Epidemiology* (2009-present)

Consulting editor, *Journal of Abnormal Psychology* (2012-present)

Assistant editor, *Addiction* (2012-present)

## Dr Janette Smith

Guest editor, *International Journal of Psychophysiology* Special Issue: Psychophysiology in Australasia (2012-2013)

Member, executive committee, Australasian Society for Psychophysiology (2013-present)

## Dr Matthew Sunderland

Member, NHMRC research translation faculty (2013-present)

Member, *Social Psychiatry and Psychiatric Epidemiology* editorial advisory board (2013-present)

## Rachel Sutherland

Member, Alcohol and Other Drugs Advisory Panel, ACON (2013-present)

## Dr Wendy Swift

Deputy Editor (Book Reviews), *Drug and Alcohol Review* (2012-present)

Member, Australian Cannabis Cohort Research Consortium (2006-present)

## Prof Maree Teesson

Member, Australian Cannabis Cohort Research Consortium (2008-present)

Co-chair, UNSW Women's Employment Strategy Committee (2011-present)

Founding member, management committee, The Mental Health Services Conference of Australia and New Zealand (1993-present)

Co-convenor, The Mental Health Services Conference of Australia and New Zealand Summer Forum (2006-present)

Member, Health Care Committee, Principal Committee NHMRC (2012-present)

Chair, NHMRC Postgraduate Scholarship Awards Committee, NHMRC (2012-present)

Member, NHMRC grant review panel (2012-present)

# POSTGRADUATE STUDENTS

## Lucy Albertella (2013-present)

*A prospective investigation of the relationship among attentional dysfunction, cannabis use and schizotypy in adolescence*

Full-time PhD in the School of Public Health and Community Medicine, UNSW

Supervisors: Prof Jan Copeland; Dr Mike Le Pelley (UNSW)

Expected date of submission: February 2016

## Bianca Calabria (2010-present)

*Creating partnerships between researchers, healthcare providers and Indigenous Australians to improve Indigenous health: a demonstration model*

Full-time PhD in the School of Public Health and Community Medicine, UNSW

Supervisors: A/Prof Anthony Shakeshaft; Dr Anton Clifford (University of Queensland); Prof Chris Doran (University of Newcastle)

Submitted: August 2013

## Katrina Champion (2012-present)

*New approaches to Internet-based substance use prevention for Australian adolescents*

Full-time PhD in the School of Public Health and Community Medicine, UNSW

Supervisors: Dr Nicola Newton; Prof Maree Teesson

Expected date of submission: August 2015

## Mark Deady (2011-present)

*Comorbid depression and alcohol misuse in young people and the development of an Internet-based intervention*

Full-time PhD in the School of Public Health and Community Medicine, UNSW

Supervisors: Prof Maree Teesson; Dr Frances Kay-Lambkin; Dr Kath Mills

Expected date of submission: December 2014

## Bianca Hoban (2012-present)

*Risky use of medications in chronic non-cancer pain patients*

Full-time PhD in the School of Public Health and Community Medicine, UNSW

Supervisor: Prof Louisa Degenhardt

Expected date of submission: March 2016

## Ansari Jainullabudeen (2010-present)

*Assessing the economic efficiency of Indigenous alcohol policy in Australia*

Full-time PhD in the School of Public Health and Community Medicine, UNSW

Supervisors: A/Prof Anthony Shakeshaft; Prof Chris Doran (University of Newcastle)

Submitted: 2013

## Amy Johnston (2008-2013)

*Suicidality in Australia: prevalence, correlates, trends and health service use*

Full-time PhD in the School of Public Health and Community Medicine, UNSW

Supervisors: Prof Shane Darke; A/Prof Tim Slade; Dr Joanne Ross

Submitted: March 2013

Conferred: October 2013

## Erin Kelly (2013-present)

*Bullying among Australian adolescents: Risks and responses*

Full-time PhD in the School of Public Health and Community Medicine, UNSW

Supervisors: Prof Maree Teesson; Dr Nicola Newton

Expected date of submission: January 2016

## Alice Knight (2013-present)

*Intervention trial to reduce alcohol related harms among high-risk young Indigenous Australians*

Full-time Masters of Philosophy in School of Public Health and Community Medicine, UNSW

Supervisor: A/Prof Anthony Shakeshaft

Expected date of submission: February 2015

## Kari Lancaster (2013-present)

*Social construction and the evidence-based drug policy endeavour*

Full-time PhD in the School of Public Health and Community Medicine, UNSW

Supervisors: Prof Alison Ritter; Prof Carla Treloar (UNSW)

Expected date of submission: March 2016

## Lynne Magor-Blatch (2009-2013)

*Intervention for amphetamine-type stimulant (ATS) use in the therapeutic community*

Full-time PhD in the School of Public Health and Community Medicine, UNSW

Supervisors: Prof Jan Copeland; Dr John Howard

Conferred: November 2013

## Clare McCormack (2012-present)

*Impact of prenatal alcohol and drug exposure on infant cognitive development*

Full-time PhD in the School of Public Health and Community Medicine, UNSW

Supervisors: Prof Richard Mattick; Dr Delyse Hutchinson; Dr Lucy Burns

Expected date of submission: March 2015

## Timothy McSweeney (2009-present)

*Promoting compliance, 'recovery' and 'desistance': Comparative case studies of pre-sentence diversion schemes for drug misusing arrestees in Australia and England*

Supervisors: Dr Caitlin Hughes, Prof Alison Ritter; Paul Turnbull (Birkbeck University of London)

Submitted: September 2013

## Zahra Alam Mehrjerdi (2013-present)

*The effects of cognitive-behavioural therapy (CBT) in treating methamphetamine use among women in methadone treatment in Tehran*

Full-time PhD in the School of Public Health and Community Medicine, UNSW

Supervisors: Prof Kate Dolan; Dr Nadine Ezard (UNSW); Dr. Azarakhsh Mokri (Tehran University of Medical Sciences)

Expected date of submission: August 2016

## Sonja Memedovic (2012-present)

*Depression in people with opioid dependence*

Full-time PhD in the School of Public Health and Community Medicine, UNSW

Supervisors: Dr Jo Ross; A/Prof Tim Slade; Prof Maree Teesson

Expected date of submission: August 2015

## Paul Nelson (2008-2013)

*Longitudinal study of drug use, health, and offering outcomes for young offenders*

Part-time PhD in the School of Public Health and Community Medicine, UNSW

Supervisor: Dr Wendy Swift, Prof Louisa Degenhardt, Prof Dianna Kenny (University of Sydney)

Submitted: July 2013

Conferred: December 2013

## Larissa Rossen (2012-present)

*Impact of parental substance use on infant development and family functioning' PhD Scholarship*

Full-time PhD in the School of Public Health and Community Medicine, UNSW

Supervisors: Dr Delyse Hutchinson; Prof Richard Mattick; Dr Lucy Burns

Expected date of submission: July 2015

## Amanda Roxburgh (2012-present)

*Trends in prescription opioid use and related harms in Australia*

Part-time PhD in the School of Public Health and Community Medicine, UNSW

Supervisor: Prof Louisa Degenhardt

Expected date of submission: August 2016

# POSTGRADUATE STUDENTS

## **Melanie Simpson** (2008-2013)

Exploring the relationship between cannabis use and criminal offending among adolescents

Full-time PhD in the School of Public Health and Community Medicine

Supervisors: Prof Jan Copeland, Dr John Howard

Submitted: March 2013

Conferred: August 2013

## **Mieke Snijder** (2013-present)

*Peer mentoring as a strategy to reduce alcohol-related injuries and violence among Aboriginal and Torres Strait Islander youth in rural New South Wales*

Full-time PhD in the School of Public Health and Community Medicine, UNSW

Supervisor: A/Prof Anthony Shakeshaft

Expected date of submission: February 2017

## **Dam Anh Tran** (2009-present)

*Accessibility to anti retroviral (ARV) treatment in Vietnam*

Full-time PhD in the School of Public Health and Community Medicine, UNSW

Supervisors: A/Prof Anthony Shakeshaft; Prof Chris Doran (University of Newcastle); Dr Anh Duc Ngo (University of South Australia)

Expected date of submission: March 2014

## **Michelle Tye** (2011-present)

*Violence among substance users with ADHD and comorbid psychiatric disorders*

Full-time PhD in the School of Public Health and Community Medicine, UNSW

Supervisors: Prof Shane Darke; Dr Sharlene Kaye; Dr Fiona Shand (UNSW)

Expected date of submission: January 2016

## **Thu Vuong** (2012-present)

*Economic evaluation comparing centre-based compulsory drug rehabilitation and community-based voluntary methadone maintenance treatment in Hai Phong City, Vietnam*

Full-time PhD in the School of Public Health and Community Medicine, UNSW

Supervisor: Prof Alison Ritter

Expected date of submission: August 2015

## **Monika Wadolowski** (2012-present)

*Disentangling early adolescent alcohol sipping and drinking: How do they relate to parental supply, parenting, peers and behaviour?*

Supervisors: Prof Richard Mattick; Dr Delyse Hutchinson; Dr Raimondo Bruno (University of Tasmania)

Expected date of submission: March 2014

## **Elizabeth Whittaker** (2012-present)

*The association between homelessness and substance abuse*

Full-time PhD in the School of Public Health and Community Medicine, UNSW

Supervisors: Dr Lucy Burns; Dr Wendy Swift; Prof Paul Fleteau (University of Western Australia)

Expected date of submission: March 2016

## **Kathryn Woodcock** (2013-present)

*Managing comorbid substance use and trauma in Australian veterans and their partners: Assessing the acceptability and effectiveness of internet-delivered psychological support programs*

Full-time PhD in the School of Public Health and Community Medicine, UNSW

Supervisors: Dr Frances Kay-Lambkin; Dr Kath Mills; Prof Amanda Baker (University of Newcastle); A/Prof Peter Stanwell (University of Newcastle)

Expected date of submission: December 2015

# RESEARCH GRANTS AND FUNDING

CORE NDARC FUNDING	FUNDING SOURCE	2013 TOTAL GRANT AWARD	TOTAL GRANT AWARD	DURATION	START & END DATE OF PROJECT
New DoHA Core Funding *	DOH	\$2,881,392	\$2,881,392	1 year	Jan 2013 - Dec 2013
<b>SUB TOTAL FOR CORE FUNDING</b>		<b>2,881,392</b>	<b>2,881,392</b>		

UNIVERSITY FUNDING SUPPORT	FUNDING SOURCE	2013 TOTAL GRANT AWARD	TOTAL GRANT AWARD	DURATION	START & END DATE OF PROJECT
Faculty Support for Research Infrastructure	UNSW	\$1,239,941	\$1,239,941	1 year	Jan 2013 - Dec 2013
DVC Strategic Support for Research Infrastructure	UNSW	\$127,056	\$127,056	1 year	Jan 2013 - Dec 2013
Publications	UNSW	\$145,257	\$145,257	1 year	Jan 2013 - Dec 2013
Faculty Support for Research Fellowship Projects	UNSW	\$50,300	\$50,300	1 year	Jan 2013 - Dec 2013
Goldstar Awards	UNSW	\$120,000	\$120,000	1 year	Jan 2013 - Dec 2013
Strategic Fund Allocation	UNSW	\$252,020	\$252,020	1 year	Jan 2013 - Dec 2013
Career Advancement Fund	UNSW	\$20,000	\$20,000	3 years	Jan 2013 - Dec 2015
MREII	UNSW	\$112,000	\$224,000	2 years	Jan 2013 - Dec 2014
<b>SUB TOTAL FOR UNIVERSITY FUNDING SUPPORT</b>		<b>\$2,178,574</b>	<b>\$2,178,574</b>		
<b>TOTAL CORE FUNDING RECEIVED 2013</b>		<b>\$5,059,966</b>	<b>\$5,059,966</b>		

PROJECT FUNDING	FUNDING SOURCE	2013 TOTAL GRANT AWARD	TOTAL GRANT AWARD	DURATION	START & END DATE OF PROJECT
A Consultant to Evaluate the Australian Capital Territory Drug Diversion Programs	ACT GOVT	\$0	\$147,279	1 year	Feb 2012 - Dec 2013*
Schedule 4 - Drug Trends - incorporating the new IDRS and EDRS	AGDHA	\$1,975,000	\$4,820,130	4 years	May 2012 - Jun 2015
Teacher and Parent Illicit Drug Resource Package	AGDHA	\$569,226	\$1,269,295	3 years	Jun 2012 - Dec 2014
National Drug Campaign Website	AGDHA	\$0	\$40,508	1 year	Aug 2012 - Dec 2013*
Psychostimulant intervention	AGDHA	\$0	\$101,676	3 years	Jul 2010 - Dec 2013*
Improving cardiovascular health among people with depression: healthy lifestyles treatment	AGDHA	\$0	\$110,000	2 years	Jan 2011 - Dec 2013*
National Cannabis Prevention and Information Centre (NCPIC)	AGDHA	\$3,377,728	\$12,363,090	5 years	Nov 2010 - Apr 2014
The cost of homelessness and benefit of programs	AHURI	\$0	\$34,692	3 years	Jan 2010 - Dec 2013*
Determining the Impact of Opioid Substitution Therapy on Mortality and Recidivism Among Prisoners	AIC/CRG	\$36,367	\$90,910	3 years	Nov 2011 - Oct 2014
Asian harm reduction Network	AIDS FONDS NL	\$0	\$79,842	3 years	Sep 2009 - Dec 2013*
Young People's Ideas About Responding to Alcohol, Tobacco and Other Drug use	ANCD	\$0	\$90,440	2 years	Mar 2012 - May 2013
Discovery Project - Is one drop too many?	ARC	\$120,000	\$760,000	5 years	Jan 2010 - Dec 2014
Assessing the effectiveness of community intervention for alcohol misuse with Indigenous Australians	ARC	\$0	\$30,000	2 years	Jan 2010 - Dec 2013*
How do alcohol and illicit drug prices affect young Australians' plans for Saturday night?	ARC, DOJ & AG, NSW	\$0	\$70,596	2 years	Jan 2011 - Dec 2013*
Alcohol use and mental disorders-longitudinal analyses from a large Australian cohort study	ARH/MIRG	\$34,960	\$43,700	2 years	Oct 2012 - Dec 2013
Reducing the health, social and economic burden of injecting drug use in Australia	BURNET/NHMRC	\$68,400	\$329,729	5 years	Jan 2011 - Dec 2015
Drug Policy Modelling Program - Stage Two	CFT	\$0	\$7,661,973	6 years	Jan 2006 - Dec 2013*
Young Australians Alcohol Reporting System	Curtin/ANPHA	\$31,407	\$62,814	3 years	Jul 2012 - Nov 2014
Platform 70 Evaluation Project	DFCS	\$39,545	\$197,726	3 years	Jun 2012 - Nov 2014

# RESEARCH GRANTS AND FUNDING

PROJECT FUNDING	FUNDING SOURCE	2013 TOTAL GRANT AWARD	TOTAL GRANT AWARD	DURATION	START & END DATE OF PROJECT
Recommendations for the prescribing of opioids in Tasmania	DH (TASMANIA)	\$0	\$279,974	2 years	Nov 2010 - Dec 2013*
Literature reviews on GLBT	DH NSW	\$0	\$150,000	1 year	May 2011 - Dec 2013*
Twelve month follow-up of mothers on the NSW Opioid Treatment Program (OPT)	DH NSW	\$0	\$36,135	1 year	Jul 2011 - Dec 2013*
Parental supply of alcohol: an expansion of a longitudinal cohort study to public schools Tasmania	FARE	\$0	\$17,609	1 year	Jan 2011 - Dec 2013*
Improving services to women who are pregnant and alcohol dependent	FARE	\$0	\$50,057	2 years	Jan 2011 - Dec 2013*
Improving services to families affected by Foetal Alcohol Spectrum Disorder (FASD)	FARE	\$0	\$50,057	2 years	Jan 2011 - Dec 2013*
Outreach evaluation of the inner city youth at risk project	HAC	\$20,715	\$265,879	4 years	Aug 2010 - Dec 2013
The prevalence of drug and alcohol presentations on hospital-based services	HAC	\$0	\$332,581	3 years	Nov 2010 - Dec 2013*
Study to identify women subject to homelessness and their reproductive health issues	HRT0	\$12,400	\$20,200	2 years	Sep 2012 - Dec 2013*
Targeted Call for Research (TCR)- Prevention for anxiety, depression and substance use (CLIMATE Schools)	NHMRC	\$251,465	\$1,709,989	6 years	Oct 2012 - Sep 2017
Impact of parental alcohol, tobacco and other substance	NHMRC	\$404,125	\$1,910,470	4 years	Jan 2010 - Dec 2013
A family-based intervention for indigenous Australians	NHMRC	\$0	\$212,500	2 years	Jan 2010 - Dec 2013*
Combining universal and targeted drug prevention approaches	NHMRC	\$143,205	\$723,665	5 years	Jan 2011 - Dec 2015
Integrative analyses of data from four Australasian cohort studies	NHMRC	\$0	\$284,472	2 years	Jan 2011 - Dec 2013*
RCT of a financial counselling intervention and smoking cessation assistance to SES groups	NHMRC	\$743,520	\$1,951,193	4 years	Jan 2012 - Dec 2015
Australian Longitudinal Study of Heroin Dependence: A 11 year study among heroin users	NHMRC	\$201,225	\$362,450	2 years	Jan 2012 - Dec 2013
The Impact of Opioid Substitution Treatment for Heroin Dependence Upon Public Health and Public Order in Australia	NHMRC	\$144,236	\$195,865	2 years	Jan 2012 - Dec 2013
Pharmaceutical Opioid Prescription for Chronic Pain in Australia: Trajectories of Prescribing, risk of adverse events & harm	NHMRC	\$250,170	\$1,059,308	5 years	Apr 2012 - Dec 2016
Ongoing surveillance of the diversion of medications used in opioid substitution treatment	RB	\$397,371	\$1,048,447	3 years	Sep 2011 - Dec 2013
Young people, drinking, and the parental supply of alcohol	ROTARY HEALTH	\$40,881	\$149,821	3 years	Jan 2011 - Dec 2013
The Misha Project - Univ of Western Australia/Mission Australia Contract Research Shared Grant	UNIV OF WA	\$10,013	\$50,522	4 years	Dec 2011 - Dec 2014
Way2Home Program Analysis	UQ	\$12,400	\$20,200	2 years	Sept 2012 - Apr 2013
Systematic review of Hepatitis C virus prevalence and incidence in closed settings	WHO	\$0	\$9,507	1 year	Sep 2012 - Dec 2013*
SHADE in Early Psychosis - computerised treatment for cannabis use in early psychosis treatment	NSW Ministry of Health	\$0	\$33,891	2 years	Aug 2011 - Dec 2013*
CRE in Mental Health and Substance Use: Translating innovative prevention and treatment	NHMRC	\$530,119	\$2,499,020	6 years	Nov 2012 - Oct 2017
The value of providing health interventions for heroin use: a cost benefit analysis	NHMRC	\$183,611	\$579,300	3 years	Jan 2013 - Dec 2015
The efficacy of behavioural activation therapy in treating depression among individuals with opioid dependence	NHMRC	\$249,333	\$708,999	3 years	Jan 2013 - Dec 2015

# RESEARCH GRANTS AND FUNDING

PROJECT FUNDING	FUNDING SOURCE	2013 TOTAL GRANT AWARD	TOTAL GRANT AWARD	DURATION	START & END DATE OF PROJECT
Diagnosing major depression in older Australian adults: Is there evidence for age-related bias	NHMRC	\$115,077	\$197,846	2 years	Jan 2013 - Dec 2014
A randomised clinical trial of internet-based treatment for binge drinking and depression in young Australians	NHMRC	\$303,137	\$909,585	5 years	Oct 2012 - Mar 2016
Intervention trial to reduce alcohol related harms among high risk young Indigenous Australians	NHMRC	\$155,894	\$379,932	3 years	Jan 2013 - Dec 2015
Camperdown Evaluation (*SubProject*)	HOUSING NSW	\$77,000	\$77,000	3 years	Sep 2012 - Mar 2014
Centre of Research Excellence in Evidence-based Mental Health Planning: Translating Evidence into Policy and Services	UQ	\$162,340	\$487,020	6 years	Oct 2012 - Sep 2017
Understanding the health and service needs of diverse populations of pharmaceutical opioid users: Cohort studies of dependent users in treatment.	MHDAO	\$72,800	\$72,800	2 years	Jan 2013 - Jun 2014
Trafficking in multiple commodities: Exposing Australia's poly-drug and poly-crime networks	NDLERF	\$88,000	\$177,532	2 years	Jan 2013 - Jun 2014
Drug Policy Modelling Program	DH	\$519,621	\$944,765	2 years	Jul 2013 - Jun 2014
Ongoing post-marketing surveillance of Suboxone film 2013	RB	\$307,869	\$307,869	1 year	Mar 2013 - Dec 2013
NSW Opioid Treatment Program: Modelling policy options	NSW Ministry of Health	\$45,455	\$45,455	1 year	Apr 2013 - Jun 2013
CRE - Ian Potter Foundation / Travel and Conference Grants) PTSD Substance use and Aggression	IPF	\$2,800	\$2,800	1 month	Sep 2013 - Sep 2013
Literature review for National Mental Health Commission's Report Card on Mental Health and Suicide Prevention	NMHC	\$28,570	\$28,570	1 year	Jul 2013 - Aug 2013
Surveillance of the diversion and extra-medical use of Reformulated Oxycontin® - NOMAD	MUNDI	\$500,930	\$500,930	1 year	Sep 2013 - Dec 2013
Post-marketing surveillance of buprenorphine-naloxone (Suboxone )	RB	\$0	\$359,655	3 years	Jan 2006 - Dec 2013*
Assessing the effectiveness of a Community Reinforcement and Family Training intervention for alcohol misuse with Indigenous Australians	ARC	\$0	\$80,000	3 years	Jan 2010 - Dec 2013*
A randomized controlled trial (RCT) to assess the acceptability of a switch from Suboxone sublingual tablets to Suboxone sublingual film.	SESIAHS	\$0	\$65,000	1 year	Jan 2010 - Dec 2013*
Drunk, high or sober: How do alcohol and illicit drug prices affect young Australians' plans for Saturday night?	DOJ AND AG, NSW	\$0	\$35,000	3 years	Nov 2010 - Dec 2013*
A formative study in the inner city suburbs of Sydney to identify and describe women subject to homelessness	HRT0	\$0	\$30,000	1 year	Jul 2011 - Dec 2013*
Maintenance: Maximising treatment participation among heroin users released from prison. (*SubProject*)	NHMRC	\$0	\$90,910	3 years	Nov 2011 - Oct 2013
Maintenance: Maximising treatment participation among heroin users released from prison. (*SubProject*)	NHMRC	\$0	\$10,000	4 years	Jan 2012 - Dec 2015
<b>SUB TOTAL FOR PROJECTS</b>		<b>\$12,226,915</b>	<b>\$47,819,180</b>		

See inside back cover for acronym definitions

SCHOLARSHIPS AND FELLOWSHIPS	FUNDING SOURCE	2013 TOTAL GRANT AWARD	TOTAL GRANT AWARD	DURATION	START & END DATE OF PROJECT
ARC PhD Scholarship	ARC	\$19,500	\$19,500	1 year	Jan 2013 - Dec 2013
APA PhD Scholarship	DEST	\$101,568	\$355,488	3 years	Jan 2012 - Dec 2014
Brain Sciences PhD Scholarship	BS	\$5,000	\$15,000	3 years	Jan 2013 - Dec 2016
FARE PhD Scholarship	FARE	\$5,000	\$20,000	4 years	Mar 2012 - Mar 2014
NDARC PhD Scholarship	NDARC	\$238,543	\$754,629	3 years	Jan 2010 - Dec 2015
NET PhD Scholarship	NET	\$40,000	\$120,000	4 years	Feb 2012 - Dec 2015
NHMRC PhD Scholarship	NHMRC	\$197,564	\$454,525	3 years	Jan 2013 - Dec 2015
Rotary Scott PhD Scholarship	ROTARY HEALTH	\$9,274	\$24,554	1 year	Jan 2013 - Dec 2013
Research Fellowship for K. Mills	NHMRC/CDA	\$94,250	\$377,000	4 years	Jan 2010 - Dec 2013
Reserch Fellowship for F. Kay-Lambkin	NHMRC/CDA	\$96,040	\$384,160	4 years	Feb 2011 - Dec 2014
Senior Research Fellowship for Maree Teesson	NHMRC	\$130,553	\$652,765	5 years	Jan 2013 - Dec 2017
Senior Research Fellowship for L. Degenhardt until Jun 2013	NHMRC	\$65,277	\$130,554	2 years	Jan 2012 - Jun 2013
Senior Research Fellowship for L. Degenhardt from Jul 2013	NHMRC	\$142,949	\$714,745	5 years	Jul 2013 - Dec 2017
Senior Research Fellowship for R. Mattick	NHMRC	\$142,949	\$714,745	5 years	Jan 2013 - Dec 2017
Senior Research Fellowship for A. Ritter	NHMRC	\$116,182	\$580,910	5 years	Jan 2012 - Dec 2016
Research Fellowship for M. Livingston	NHMRC	\$74,891	\$299,564	4 years	Jan 2013 - Dec 2016
Research Fellowship for M. Sunderland	NHMRC	\$74,891	\$299,564	4 years	Jan 2013 - Dec 2016
Early Career Fellowship for S. Larney	NHMRC	\$78,239	\$303,924	4 years	Jan 2012 - Dec 2015
Vice-Chancellor's Postdoctoral Fellowship	UNSW	\$58,500	\$327,600	3 years	Jan 2009 - Dec 2013
<b>SUB TOTAL SCHOLARSHIPS AND FELLOWSHIPS</b>		<b>\$1,691,170</b>	<b>\$6,549,227</b>		
<b>TOTAL FOR PROJECTS, SCHOLARSHIPS AND FELLOWSHIPS</b>		<b>\$13,918,085</b>	<b>\$54,368,407</b>		

See inside back cover for acronym definitions

OTHER INCOME	FUNDING SOURCE	2013 TOTAL GRANT AWARD	TOTAL GRANT AWARD	DURATION	START & END DATE OF PROJECT
NDARC External Consultancy Research	NDARC	\$7,080	\$7,080	1 year	Jan 2013 - Dec 2013
Offence-related debt offenders	NDARC	\$3,234	\$3,234	1 year	Jan 2013 - Dec 2013
Mental Health and Wellbeing	NDARC	\$14,335	\$14,335	2 years	Jan 2013 - Dec 2013
Annual Symposium	NDARC	\$17,836	\$17,836	1 year	Jan 2013 - Dec 2013
Drug Trends Conference	NDARC	\$14,345	\$14,345	1 year	Jan 2013 - Dec 2013
<b>TOTAL OTHER INCOME</b>		<b>\$56,830</b>	<b>\$56,830</b>		
<b>GRAND TOTAL OF RESEARCH AWARDS TO NDARC</b>		<b>\$19,034,881</b>	<b>\$59,485,203</b>		

\* Denotes Project extension granted.

# NDARC SEMINAR SERIES

## External Presenters

### 7 February

*Contingency management in the treatment of drug dependency: the UK experience*

Dr Tim Weaver

Senior Lecturer in Mental Health Services Research, Centre for Mental Health, Imperial College London

### 14 March

*Evaluating aboriginal alcohol action plans*

A/Prof Alan Clough

School of Public Health, Tropical Medicine & Rehabilitation Sciences, James Cook University

### 21 March

*Recruitment and engagement with people who use drugs through online communication*

Dr Monica Barratt

Research Fellow, NDRI

### 28 March

*New drugs, new challenges and innovative approaches to engaging people who use them*

Dr Adam Winstock

Clinical Senior Lecturer, Institute of Psychiatry, Kings College London

### 9 May

*Personality based vulnerabilities for substance use development: Basic mechanisms and treatment implications*

Prof Carl Lejuez

Director, Centre for Addictions, Personality, and Emotion Research, University of Maryland

### 23 May

*Tackling tobacco research: partnering with community organisations to tackle smoking*

Phil Hull

Program Officer Tackling Tobacco, Cancer Council

A/Prof Billie Bonevski

Cancer Institute NSW Research Fellow, University of Newcastle

### 25 July

*Can caffeinated soft drinks kill?*

A/Prof Johan Duflo

Chief Forensic Pathologist, Department of Forensic Medicine, Sydney Local Health District

### 22 August

*Developing a clinical outcome system for NSW D&A Services: ATOP and beyond*

A/Prof Nick Lintzeris

Director, AOD Services, South Eastern Sydney Local Health District

### 17 October

*Drug trends in the European Union and the rise of new psychoactive substances*

Paul Griffiths

Scientific Director, European Monitoring Centre for Drugs and Drug Addiction

### 24 October

*Age-related comorbidities with alcohol and substance misuse and impacts on service delivery*

Prof Brian Draper

Academic Department for Old Age Psychiatry, Prince of Wales Hospital Sydney

### 28 November

*Opposition to needle and syringe programs in New South Wales: community, advocacy and science*

A/Prof Carolyn Day

Addiction Medicine, Central Clinical School, University of Sydney

### 4 December

*After the war on drugs: public health models for cannabis market regulation*

Steve Rolles

Senior Policy Analyst, Transform Drug Policy Foundation, UK

## In-House Presenters

### February 14

*Attitudes of regular injecting drug users towards the legal status of the major illicit drugs*

Prof Shane Darke

Michelle Torok

### February 21

*A comparison of heterosexual & GLBT participants: same same but different?*

Rachel Sutherland

*Online availability of illicit and emerging substances*

Joe Van Buskirk

Amanda Roxburgh

### April 11

*Australian Treatment Outcome Study*

Dr Christina Marel

Sonja Memedovic

Philippa Ewer

*The long-term outcomes for females with heroin dependence: Preliminary findings from the 11-year follow up of ATOS*

Joanne White

### April 18

*NHMRC Centre of Research Excellence in Mental Health and Substance Use - CREMS*

Dr Katherine Mills

Prof Maree Teesson

### May 16

*Childhood physical abuse, non-suicidal self-harm and attempted suicide amongst regular injecting drug users*

Prof Shane Darke

Michelle Torok

### May 30

*Suboxone film*

Dr Briony Larence

### June 13

*Pain and Opioids In Treatment Study: An overview of the POINT study*

Gabrielle Campbell

Bianca Hoban

Anika Martin

### June 20

*Cannabis and sleep: A review*

Dr Peter Gates

*Cannabis: An overview and first results of analysis of NSW cannabis cautioning seizures*

Dr Wendy Swift

### June 27

*Negotiating and managing access to health, clinical and harm reduction services (training seminar)*

Prof Alison Ritter

Dr Briony Larence

### July 11

*Electrophysiological indicators of impaired memory and inhibition in heavy drinkers and recreational cannabis users*

Dr Janette Smith

*Evidence into practice - What does the NCPIC communications team do?*

Karina Hickey

### August 8

*Examining the construction and representation of drugs as a policy problem in Australia's National Drug Strategy documents, 1985-2010*

Kari Lancaster

*Planning for alcohol and drug treatment services: estimating population needs and demand for treatment*

Prof Alison Ritter

### August 15

*Indigenous intervention research: what are we trying to do and how might we do better?*

A/Prof Anthony Shakeshaft

### September 12

*Cannabis and driving*

Dr Peter Gates

### September 19

*Determining the impact of opioid substitution therapy upon mortality and recidivism among prisoners: Data linkage study*

Dr Natasa Gisev

*Evaluations of homelessness services and pathways home*

Elizabeth Whittaker

### October 10

*A randomised clinical trial of a financial education intervention with nicotine replacement therapy (NRT) for low socioeconomic status smokers: A study protocol*

Dr Ryan Courtney

*The introduction and expansion of legal thresholds for drug trafficking in NSW*

Dr Caitlin Hughes

### October 31

*Continuous performance test in ADHD and SUD patients (CASP) study*

Dr Sharlene Kaye

*Can developmental theory be used to understand differences in the violent offending careers of injecting drug users?*

Michelle Torok

### November 14

*The treatment of depression among substance users*

Dr Joanne Ross

*A latent class analysis of stability and adherence indicators among opioid substitution therapy clients: Do stable clients receive more takeaway doses?*

Dr Briony Larence

### November 21

*Examining the shared and unique relationships among DSM-IV mental health and substance use disorders*

Dr Matthew Sunderland

*Assessing mental health in old age: Investigating bias in the diagnostic instruments*

Dr Heather Buchan

# PUBLICATIONS

## NDARC Monograph

**64. Shakeshaft, A., Doran, C., Petrie, D., Breen, C., Havard, A., Abudeen, A., Harwood, E., Clifford, A., D'Este, C., Gilmour, S., & Sanson-Fisher, R.** (2013). *The Alcohol Action in Rural Communities (AARC) Project: Detailed description of the interventions and their costs.* Sydney, NSW: National Drug and Alcohol Research Centre, UNSW.

## NDARC Technical Report

**324. Darke, S., Shakeshaft, A., & Doran, C.** (2013). *Alcohol and violence: Alcohol consumption, homicide, and completed suicide in Australia, 1979-2009.* Sydney, NSW: National Drug and Alcohol Research Centre, UNSW.

## Australian Drug Trends Series

**91. Stafford, J., & Burns, L.** (2013). *Australian Drug Trends 2012: Findings from the Illicit Drug Reporting System (IDRS).* Sydney, NSW: National Drug and Alcohol Research Centre, UNSW.

**92. Van Buskirk, J., & Burns, L.** (2013). *NSW Drug Trends 2012: Findings from the Illicit Drug Reporting System (IDRS).* Sydney, NSW: National Drug and Alcohol Research Centre, UNSW.

**93. Butler, K., & Burns, L.** (2013). *ACT Drug Trends 2012: Findings from the Illicit Drug Reporting System (IDRS).* Sydney, NSW: National Drug and Alcohol Research Centre, UNSW.

**94. Cogger, S., Dietze, P., & Lloyd, B.** (2013). *Victorian Drug Trends 2012: Findings from the Illicit Drug Reporting System (IDRS).* Sydney, NSW: National Drug and Alcohol Research Centre, UNSW.

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**96. Sutherland, R., & Burns L.** (2013). *SA Drug Trends 2012: Findings from the Illicit Drug Reporting System (IDRS).* Sydney, NSW: National Drug and Alcohol Research Centre, UNSW.

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# CONFERENCE PRESENTATIONS

**Allsop, D.\* & Copeland, J.** *Age at first cannabis use moderates neural markers for recovery in cannabis withdrawal.* Poster presented at the 75<sup>th</sup> College on Problems of Drug Dependence Conference, San Diego, 18 June.

**Allsop, D.J.\*, Copeland, J., Lintzeris, N., Dunlop, A.J., Montebello, M., Sadler, C., Rivas, G.R., Holland, R.M., Muhleisen, P., Norberg, M.M., Booth, J., & McGregor, I.** *A randomized controlled trial of nabiximols (Sativex®) as an agonist replacement therapy during cannabis withdrawal.* Poster presented at the National Institute on Drug Abuse (NIDA) International Forum, San Diego, 17 June.

**Allsop, D.J.\*, Copeland, J., Lintzeris, N., Dunlop, A.J., Montebello, M., Sadler, C., Rivas, G.R., Holland, R.M., Muhleisen, P., Norberg, M.M., Booth, J., & McGregor, I.** *A randomized controlled trial of nabiximols (Sativex®) as an agonist replacement therapy during cannabis withdrawal.* Presented at the College on Problems of Drug Dependence Conference, San Diego, 18 June.

**Allsop, D.J.\*, Copeland, J., Lintzeris, N., Dunlop, A.J., Montebello, M., Sadler, C., Rivas, G.R., Holland, R.M., Muhleisen, P., Norberg, M.M., Booth, J., & McGregor, I.** *Nabiximols as an agonist replacement therapy during cannabis withdrawal: A Randomized Clinical Trial.* Presented at the New Zealand Drug Foundation International Drug Policy Symposium Through the maze: Cannabis and Health, Auckland, 29 November.

**Allsop, D.J.\*, Copeland, J., Lintzeris, N., Dunlop, A.J., Montebello, M., Sadler, C., Rivas, G.R., Holland, R.M., Muhleisen, P., Norberg, M.M., Booth, J., & McGregor, I.** *Nabiximols as an agonist replacement therapy during cannabis withdrawal: A Randomized Clinical Trial.* Presented to the Australasian Professional Society on Alcohol and other Drugs (APSAD) Conference, Brisbane, 24-27 November.

**Ayyaz, Z.\* & Dolan, K.** *A dark cloud hangs over our IDUs.* Presented at the 2<sup>nd</sup> Middle East and North African Harm Reduction Association (MENAHR) Conference, Beirut, 12-15 November.

**Barrett, E.L.\*, Mills, K., & Teesson, M.** *Substance use, PTSD and aggression: A volatile mix.* Presented at the NHMRC National Centre of Research Excellence in Mental Health and Substance Use (CREMS) Conference, Melbourne, 20 August.

**Barrett, E.L.\*, Mills, K., & Teesson, M.** *Post-traumatic stress disorder, substance use and aggression: A longitudinal investigation and implications for clinical practice.* Presented at the European Association for Behavioural and Cognitive Therapies Congress, Marrakech, 25-28 September.

**Barrett, E.L.\*, Teesson, M., Newton, N., Slade, T., & Conrod, P.** *An integrated approach to preventing substance use in adolescents: Developing the CAP intervention.* Presented at the European Association for Behavioural and Cognitive Therapies Congress, Marrakech, 25-28 September.

**Birrell, L.\*, Newton, N.C., Andrews, G., Slade, T., Chapman, C., Tonks, Z., & Teesson, M.** *Mapping the trajectory of anxiety, depression and alcohol use in early adolescence.* Poster presented at the Mental Health Services (TheMHS) Conference, Melbourne, 21 August.

**Birrell, L.\*, Newton, N.C., Andrews, G., Slade, T., Chapman, C., Tonks, Z., & Teesson, M.** *Examining the trajectory of anxiety, depression and alcohol use in early adolescence.* Poster presented at the NDARC Annual Symposium, Sydney, 4 September.

**Breen, C.\* & Burns, L.** *Caring for individuals affected by FASD: The mental health, strain and levels of support for carer.* Presented at the Australasian Fetal Alcohol Use Disorders Conference: Time to Learn, Time to Act, Brisbane, 19-20 November.

**Bright\*, D. & Hughes\*, C.** *Drugs, money and organised crime.* Presented at the Forensic Medicine and Science Sydney Conference, Sydney, 15 November.

**Bruno, R.\*, Allsop, D.J., Copeland, J., McGregor, I., Norberg, M., Dunlop, A., Montebello, M., Sadler, C., Holland, R., Rivas, G., Muhleisen, P., Booth, J., & Lintzeris, N.** *The impact of nabiximols (Sativex®) on cognitive function during treatment for cannabis withdrawal.* Poster presented at the 75<sup>th</sup> College on Problems of Drug Dependence Conference, San Diego, 18 June.

**Buchan, H., Sunderland, M., Carragher, N.\*, Batterham, P., & Slade, T.** *Assessing mental health in old age: Investigating bias in the diagnostic instruments.* Poster presented to the NDARC Annual Symposium, Sydney, 4 September.

**Buchan, H.\*, Sunderland, M., Carragher, N., Batterham, P. & Slade, T.** *Assessing mental health in old age: Investigating bias in the diagnostic instruments.* Presented at the 2013 Australasian Society for Psychiatric Research (ASPR) Conference, Melbourne, 4-6 December.

**Burns, L.\* & Breen, C.** *Treating pregnant women with problematic alcohol use in Australia: progress and challenges.* First International Conference on Prevention of FASD, Edmonton, 23-25 September.

**Burns, L.\* & Breen, C.** *Treating alcohol use and dependency in pregnancy: progress and challenges.* Presented at the Australasian Fetal Alcohol Use Disorders Conference: Time to Learn, Time to Act, Brisbane, 19-20 November.

**Burns, L.\*, Roxburgh, A., & Van Buskirk, J.** *Monitoring illicit drugs in the Internet age.* Presented at the APSAD Conference, Brisbane, 24-27 November.

**Butler, K.\*, & Burns, L.** *The burden of drug and alcohol presentations on hospital-based services.* Presented to the NDARC Annual Symposium, Sydney, 4 September.

**Butler, K.\*, & Burns, L.** *Methamphetamine trends in the Australian Capital Territory.* Presented at the 2013 Drug Trends Conference, Melbourne, 15 October.

**Butler, K.\*, & Burns, L.** *Knowledge and perceptions regarding diagnosis and treatment among a sample of people who inject drugs living with HCV.* Presented at the National Hepatitis Health Promotion Conference, Sydney, 14 November.

**Calabria, B.\*, Shakeshaft, A., & Clifford, A.** *Improving Indigenous intervention research by establishing partnerships between researchers, Indigenous Australians and healthcare providers.* Presented at the UNSW School of Public Health and Community Medicine Annual Research Symposium, Sydney, 11 October.

**Campbell, G.\*** *Trends in pharmaceutical prescribing, diversion, misuse and harms, Australia.* Presented at NSW Pharmacy Guild Workshop, Sydney, 13 May.

**Campbell, G.\*, Hoban, B. & Martin, A.** *POINT: Pain and Opioids IN Treatment study: Preliminary findings.* Presented at the NDARC in-house seminar series, Sydney, May.

**Campbell, G.\* & Hoban, B.** *POINT: Pain and Opioids IN Treatment study: Preliminary findings.* Invited presentation at the National Pharmacy Guild Conference, Sydney, 22 June.

**Carragher, N.\*, Krueger, R.F., Eaton, N.R., Markon, K.E., Keyes, K.M., Bianco, C., Saha, T.D., & Hasin, D.S.** *The externalising spectrum and ADHD: Evaluating latent structure.* Poster presented at the 14<sup>th</sup> International Congress of the International Federation of Psychiatric Epidemiology (IFPE), Leipzig, 5-8 June.

**Carragher, N.\*, Byrnes, J., Doran, C., & Shakeshaft, A.** *Evaluating the strength of alcohol policy and relationship with consumption.* Presented to the NDARC Annual Symposium, Sydney, 4 September.

**Carragher, N.\*, Krueger, R.F., Eaton, N., Markon, K.M., Keyes, K., Bianco, C., Saha, T., & Hasin D.** *New disorders in the meta-structure of psychopathology: ADHD and the externalising spectrum.* Presented at the 2013 Australasian Society for Psychiatric Research (ASPR) Conference, Melbourne, 4-6 December.

**Chalmers, J.\*** *Heterogeneity and interrelationships in response to alcohol and other drug prices: An online experimental study of young Australians' behaviour on Saturday night.* Applied Research in Crime and Justice Conference 2013, Sydney, 27-28 February.

**Chalmers, J.\*, Carragher, N., Davoren, S., & O'Brien, P.** *Real or perceived impediment to minimum pricing of alcohol in Australia: Public opinion, the industry, and the law.* Presented at the Drug Policy Modelling Program Research Symposium 2013, Parkes, 20 June.

**Champion, K.E.\*, Newton, N.C., Teesson, M., Barrett, E.L., & Slade, T.** *Preliminary results from a cross-validation trial of the internet-based Climate Schools: Alcohol and Cannabis course.* Presented at the Australasian Society for Behavioural Health and Medicine (ASBHM) 10<sup>th</sup> Annual Scientific Conference, Newcastle, 6-8 February.

**Champion\*, K.E., Newton, N.C., Teesson, M., Barrett, E.L., & Slade, T.** *A Cross-Validation Trial of the Internet-Based Climate Schools: Alcohol and Cannabis Course in Sydney, Australia.* Presented at the NIDA International Poster Session, Society for Prevention Research 21<sup>st</sup> Annual Meeting, San Francisco, 28-31 May.

**Chapman, C., Slade, T., Hunt, C., & Teesson, M.\*** *Delay to seek treatment for alcohol use disorders in Australia.* Poster presented at The Research Society on Alcoholism (RSA) Annual Scientific Meeting, Orlando, Florida, 22-26 June.

**Champion\*, K.E., Newton, N.C., & Teesson, M.** *The CSI (Climate Schools Interactive) Study: Protocol of a cluster randomised controlled trial of the Climate Schools: Ecstasy & Emerging Drugs Module.* Poster presented to the NDARC Annual Symposium, Sydney, 4 September.

**Champion\*, K.E., Newton, N.C., Teesson, M., Barrett, E.L. & Slade, T.** *A Cross-Validation Trial of the Internet-Based Climate Schools: Alcohol and Cannabis Course.* Poster presented to the NDARC Annual Symposium, Sydney, 4 September.

**Chapman, C., Slade, T.\*, Hunt, C., & Teesson, M.** *Delay to seek treatment for alcohol use disorders in Australia.* Poster presented at The 14<sup>th</sup> International Congress of the International Federation for Psychiatric Epidemiology (IFPE), Leipzig, 5-8 June.

**Copeland, J.\*** *Psychological interventions for cannabis use disorder.* Presented at the Medicine in Addiction Conference - RANZCP, Sydney, 16 March.

**Copeland, J.\*** *Cannabis and driving: evidence and interventions.* Presented at the 6<sup>th</sup> Australasian Drug and Alcohol Strategy Conference 2013, Sydney, 20 March.

**Copeland, J.\*** *Cannabis and driving: Australian policy and responses.* Poster presented at the National Institute on Drug Abuse (NIDA) International Forum, San Diego, 17 June.

**Copeland, J.\*, Albertella, L., Norberg, M. & Rooke, S.** *A smartphone application for cannabis-related problems.* Presented at the 75<sup>th</sup> College on Problems of Drug Dependence Conference, San Diego, 18 June.

**Copeland, J.\*, Allsop, D.J., Lintzeris, N., Dunlop, A. J., & McGregor, I.** *Cannabinoid replacement therapy (Sativex) for the management of cannabis withdrawal.* Presented at the 11<sup>th</sup> World Congress of Biological Psychiatry, Kyoto, 24 June.

**Copeland, J.\*** *The epidemiology and phenomenology of cannabis use, dependence and withdrawal.* Presented at the 11<sup>th</sup> World Congress of Biological Psychiatry, Kyoto, 24 June.

**Copeland, J.\*, Allsop, D.J.\*, Fu, S., Budney, A., & Norberg, M.** *The cannabis withdrawal scale development: Patterns and predictors of cannabis withdrawal and distress.* Poster presented at the 11<sup>th</sup> World Congress of Biological Psychiatry, Kyoto, 27 June.

**Copeland, J.\*** *Development and Testing of a Smartphone App for Cannabis Use.* Poster presented at the NDARC Annual Symposium, Sydney, 4 September.

**Copeland, J.\*** *The Gunja Brain Story.* Presented at Advances in Public Health & Health Services Annual Research Symposium; Dreaming up the future of Aboriginal and Torres Strait Islander Public Health. UNSW, Sydney, 11 October.

**Courtney, R.J.\*** *A population-based cross-sectional study of colorectal cancer screening practices of first-degree relatives of colorectal cancer patients.* Presented at the International Shared Decision Making (IDSM) Conference, Lima, 16-19 June.

**Courtney, R.J.\*, Paul, C.L., Sanson-Fisher, R., Macrae, F.A., Carey, M.L., Simmons J., & Cameron E.** *Risk-appropriate screening intentions of first-degree relatives of colorectal cancer patients.* Poster presented at the International Society for Gastrointestinal Hereditary Tumours (InSIGHT) 5th Biennial Meeting, Cairns, 28-31 August.

**Courtney, R.J.\*, Bradford, D., Martire, K., Bonevski, B., Borland, R., Doran, C., Hall, W., Farrell, R., Sanson-Fisher, R., Siahpush, M., West, R., Boland, V., Braunstein, D., Clare, P., Iredale, J., Touyz, L., Upton, E., & Mattick, R.** *A randomised clinical trial of a financial education intervention with nicotine replacement therapy for low socioeconomic status smokers - a protocol description.* Poster presented to the NDARC Annual Symposium, Sydney, 4 September.

**Darke, S.\*** *Comparative patterns of cognitive performance amongst opioid maintenance patients, abstinent opioid users and non-opioid users.* Presented at the Royal College of General Practitioners Medicine in Addictions Conference, Sydney, 17 March.

**Darke, S.\* & Ross, J.** *The Suicide Assessment Kit.* Presented at the Australian Therapeutic Communities Association Annual Conference, Gold Coast, 16 October.

**Darke, S.\*** *Suicide amongst drug users: A challenge for drug treatment agencies.* Presented at the Australian Therapeutic Communities Association Annual Conference, Gold Coast, 16 October.

**Deady, M.\*, Kay-Lambkin, F., & Teesson, M.** *Development of the DEAL Project: A Brief, Online Intervention for Depression and Alcohol Misuse Comorbidity in Young People.* Poster presented at the International Society for Research on Internet Interventions Conference, Chicago, 16-18 May.

**Degenhardt, L.\*** *Engagement with the criminal justice system among opioid-dependent people: retrospective cohort study.* Presented at The Applied Research in Crime and Justice Conference 2013, Sydney, 27-28 February.

**Degenhardt, L.\*** *Mortality among methadone, buprenorphine and naltrexone entrants in Australia.* Invited plenary presentation at the combined EUROPAD/Global Addictions Conference, Pisa, 8-11 May.

**Degenhardt, L.\*** *Mortality among methadone, buprenorphine and naltrexone entrants in Australia.* Invited plenary presentation at the 7<sup>th</sup> Albatros Conference, Paris, 6-8 June.

**Degenhardt, L., O'Loughlin, C., Swift, W.\*, Romaniuk, H., Coffey, C., Hall, W., & Patton, G.** *The natural history of binge drinking from adolescence to young adulthood.* Presented at The 14<sup>th</sup> International Congress of the International Federation for Psychiatric Epidemiology (IFPE), Leipzig, 5-8 June.

**Degenhardt, L.\* & Whiteford, H.** *The global burden of disease attributable to illicit drug use: Findings from the 2010 Global Burden of Disease study.* Presented at the International Federation of Psychiatric Epidemiology (IFPE) 2013 Conference, Leipzig, 5-8 June.

**Degenhardt, L.\*** *The global burden of disease attributable to illicit drug use: Findings from the 2010 Global Burden of Disease study.* Poster presented at the National Institute on Drug Abuse (NIDA) International Forum, San Diego, 17 June.

**Degenhardt, L.\*** *The persistence of adolescent binge drinking into adulthood: Findings from a 15-year prospective cohort study.* Poster presented at the 75<sup>th</sup> College on Problems of Drug Dependence Conference, San Diego, 18 June.

**Degenhardt, L.\*** *Engagement with the criminal justice system among opioid-dependent people: retrospective cohort study.* Poster presented at the 75<sup>th</sup> College on Problems of Drug Dependence Conference, San Diego, 18 June.

- Degenhardt, L.\*** *The global burden of disease attributable to illicit drug use: Findings from the 2010 Global Burden of Disease study.* Presented to the NDARC Annual Symposium, Sydney, 4 September.
- Degenhardt, L., O'Loughlin, C., Swift, W.\*, Romaniuk, H., Coffey, C., Hall, W., & Patton, G.** *The natural history of binge drinking from adolescence to young adulthood.* Presented at the NDARC Annual Symposium, Sydney, 4 September.
- Degenhardt, L.\*** *Morbidity and mortality among people using opioid medications.* Presented at the International Society for Addiction Medicine (ISAM) meeting, Kuala Lumpur, 21-23 November.
- Dolan, K.\*** *Imprisonment and harm reduction.* Presented at the Regional Drug Treatment Conference, UN Head Office, Tehran, 7 January.
- Dolan, K.\*** *Special considerations in the treatment of women drug users.* Presented at the Regional Drug Treatment Conference UN Head Office, Tehran, 8 January.
- Dolan, K.\* & Rodas, A.** *Supply reduction measures in Australian prisons.* Presented at the 4<sup>th</sup> Australasian Drug and Alcohol Strategy Conference, Sydney, 19-22 March.
- Dolan, K.\*, Baldry, E., Ezard, N., Hodge, S., Rodas, a., Burns, L., Crosby, B., & Day, C.** *A managed alcohol program for Sydney's homeless.* Presented at the Social Inclusion and Complex Needs Conference, Canberra, 15-16 April.
- Dolan, K.\* Salimi, S. Nassirimanesh, B. Mohsenifar, S. Allsop, D., & Mokri, A.** *Six month follow up of Iranian women in methadone treatment: drug use, social functioning, crime and HIV/HCV seroincidence.* Presented at the International Narcotics Research Conference, Cairns, 14-19 July.
- Dolan, K.\*, Salimi, S., Nassirimanesh, B., Mohsenifar, S., Allsop, D., & Mokri, A.** *Developing Iran's first harm reduction service for women: Notes from the field.* Presented at the 2<sup>nd</sup> Middle East and North African Harm Reduction Association (MENAHRRA) Conference, Beirut, 12-15 November.
- Dunn, M.\*** *Drugs, sport and music - performance enhancement at what cost?* Presented at the Australian College of Pharmacy 24th Annual Conference, Brisbane, 5-8 July.
- Dunn, M.\*** *Compounders beware - inappropriate use of hormones by athletes.* Presented at the Australian College of Pharmacy 24th Annual Conference, Brisbane, 5-8 July.
- Dunn, M.\* & McKay, F.** *Framing sport and gambling as a public health issue.* Presented at the 2nd Sport and Crime Conference, Gold Coast, 30 September.
- Dunn, M.\*** *Who are the consumers of emerging psychoactive substances? A typology of Australian ecstasy and related drug users.* Presented to the APSAD Conference, Brisbane, 24-27 November.
- Dunn, M.\*** *The Scheduling of DMAA in Australia: What is the human evidence?* Presented to the APSAD Conference, Brisbane, 24-27 November.
- Dunn, M.\*** *Understanding emerging psychoactive substance use in Australia.* Presented to the APSAD Conference, Brisbane, 24-27 November.
- Dunn, M.\*** *Performance and image enhancing drug users: The forgotten injectors?* Presented to the APSAD Conference, Brisbane, 24-27 November.
- Dunn, M.\*** *Do steroid users post unique challenges for needle and syringe program staff?* Presented to the APSAD Conference, Brisbane, 24-27 November.
- Dunn, M.\*** *Evaluating a school-based drug and alcohol program: The Warp Experience.* Presented to the APSAD Conference, Brisbane, 24-27 November.
- Farrell, M.\*** *Opioids in Chronic Pain - the overlap of chronic prescribing and dependence.* Alliance for Improving the Management of Pain Conference, Melbourne, 10 February.
- Farrell, M.\*** *Responding to the future challenges in developing alcohol and drug responses.* Keynote presentation to the Victorian Alcohol & Drug Association (VAADA) Conference, Melbourne, 14 February.
- Farrell, M.\*** *How to reduce risks on moving through the system.* Medicine In Addiction (MIA) Conference. Sydney, 15 March.
- Farrell, M.\*** *Substance abuse under justice system: Impacts on community health and security.* Plenary presentation at the 8th Thai National Conference on Substance Abuse, Chiang Mai, 2-4 September.
- Farrell, M.\*** *Moderating risks for drug users in prison.* Invited presentation to the Special Congress on Addiction and Mental Health, Kuala Lumpur, 1-3 October.
- Farrell, M.\*** *Addressing an important question: Does opiate substitution treatment reduce HIV transmission?* Presentation to International Society on Addiction Medicine, Kuala Lumpur, 21-24 November.
- Farrell, M.\*** *High vs. low regulated models: Which one is better to achieve harm reduction objectives?* Invited plenary presentation to International Society on Addiction Medicine, Kuala Lumpur, 21-24 November.
- Gates, P.\*** *Cannabis and sleep.* Poster presented to the NDARC Annual Symposium, Sydney, 4 September.
- Gisev, N., Degenhardt, L., Dobbins, T., Larney, S., Larance, B.\*, Kimber, J., Gibson, A., & Burns, L.** *Opioid substitution therapy in New South Wales 2001-2012: Comparison between buprenorphine and methadone users.* Poster presented to the NDARC Annual Symposium, Sydney, 4 September.
- Hoban, B., Larance, B., Gisev, N., Campbell, G., Belcher, J., Bruno, R., Nielsen, S., Shand, F., Hall, W., Cohen, M, Lintzeries, N., Farrell, M., Mattick, R., & Degenhardt, L.** *The therapeutic and above therapeutic use of paracetamol among chronic non-cancer pain patients.* Poster presented to the NDARC Annual Symposium, Sydney, 4 September.
- Hookham, G.\*, Deady, M., Kay-Lambkin, F., & Nesbitt, K.** *Training for life: Designing a game to engage younger people in a psychological counselling program.* Presented at Edutainment: 8th International Conference on E-Learning and Games, Sydney, 1-3 October.
- Howard, J.\*** *'Clear your vision': engaging and enhancing motivation for change in young people who use cannabis.* Presented at the 10<sup>th</sup> World Congress of the International Association for Adolescent Health, Istanbul, Turkey 11-13 June.
- Howard, J.\*, de Kort, G., Pandey, B., Joshi, S., Kaplan, K., Suwannawong, P., Jian, L., & Zhang, C.** *'Opening Doors' - engaging with young people to deliver youth friendly harm reduction in Asia.* Presented at the 10<sup>th</sup> World Congress of the International Association for Adolescent Health, Istanbul, Turkey 11-13 June.
- Howard, J.\*, & Nasr, R.** *Family violence or marriage breakdown - visa implications.* Presented at the Symposium on Conflict and compromise: Research and Practice in Immigration Practice in Australia, XXXIII International Congress on Law and Mental Health, Amsterdam, 14-19 July.
- Howard, J.\*, Bell, F., Buckley, L., Frendin, J., & Warren, J.** *Building capacity to address cannabis use related issues among Aboriginal Australians in rural and remote areas.* Presented at the Rural and Remote Mental Health Conference, Geelong, 14-16 October.
- Howard, J.\*, Bell, F, Buckley, L., Frendin, J., & Warren, J.** *Building capacity to address cannabis use related issues among young people in rural and remote Australia.* Presented at the National Youth Conference, Fremantle 13-15 November.
- Howard, J.\*** *Alcohol use among young people in the Western Pacific Region: patterns and trends.* Keynote Presentation to the WHO/WPRO and Department of Health Hong Kong Regional Meeting on addressing the harmful use of alcohol by young people, Hong Kong, 12-14 November.

- Howard, J.\***, de Kort, G., Pandey, B., Joshi, S., Jian, L., & Cunmin, Z. *Still 'Opening Doors' - sustained impacts from engagement with young people to deliver youth friendly harm reduction*. Poster presented at the 11<sup>th</sup> International Congress on AIDS in Asia and the Pacific, Bangkok, 18-22 November.
- Howard, J.\***, Copeland, J., Allsop, D., & Tran, B. *An online survey of the subjective experiences of withdrawal from synthetics versus bush/hydro cannabis*. Presented to the APSAD Conference, Brisbane, 24-27 November.
- Howard, J.\***, Leahy, D., Smith, C., & Copeland, J. *Pharmacy-based interventions for cannabis use-related difficulties*. Presented to the APSAD Conference, Brisbane, 24-27 November.
- Howard, J.\***, de Kort, G., Pandey, B., Joshi, S., Jian, L., & Cunmin, Z. *Still 'Opening Doors' - lasting impacts from a project that engaged with young people to deliver youth friendly harm reduction*. Presented to the APSAD Conference, Brisbane, 24-27 November.
- Hughes\*, C., Ritter, A., & Cowdery, N.** *Australian drug trafficking thresholds: An interstate comparison of trafficable threshold quantities versus typical patterns of user consumption and purchasing behaviour*. Presented at the 6<sup>th</sup> Australasian Drug Strategy Conference, Luna Park, Sydney, 20 March.
- Hughes\*, C., Ritter, A., & Cowdery, N.** *Legal thresholds for drug trafficking: Evaluating the risk of unjustified charge of users as traffickers in six Australian states*. Presented at the 7<sup>th</sup> International Society for the Study of Drug Policy Conference, Universidad de los Andes, Bogota, 16 May.
- Hughes\*, C. & Cowdery\*, N.** *Deemed supply in Australian drug trafficking laws*. Presented at the Drug Policy Modelling Program (DPMP) Research Symposium, Canberra, 20 June.
- Hughes\*, C.** *Inside out - diversion programs, rebuilding the case, what happens next?* Presented at the 2013 Winter Sun Conference, Brisbane, 18 July.
- Hughes\*, C., Ritter, A., & Cowdery, N.** *'Trafficking' or 'personal use': Do regular injecting drug users understand Australian drug trafficking laws?* Poster presented to the NDARC Annual Symposium, Sydney, 4 September.
- Jiang, J.\***, Livingston, M., & Manton, E. *The dynamic effects of random breath testing on traffic accidents in Australian states*. Presented at the 20<sup>th</sup> International Council on Alcohol, Drugs and Traffic Safety Conference, Brisbane, 26 August.
- Kaye, S.\*** *Discussion of harm reduction & cognitive enhancement*. Presented at the Neuroethics Down-Under Conference, Brisbane, 4 October.
- Kaye, S.\*** *Continuous performance test in ADHD and SUD patients (CASP) study*. Presented at the 11<sup>th</sup> International Congress on Dual Disorders: Addictions and other Mental Disorders, Barcelona, 23-26 October.
- Kelly, E.\***, Newton, N.C., Barrett, E., Teesson, M., Slade, T. & Conrod, P. *Secondary effects of a personality-targeted substance misuse prevention program: Does the Preventure program reduce bullying?* Poster presented at the 21<sup>st</sup> annual meeting for the Society for Prevention Research (SPR), San Francisco, 28-31 May.
- Kelly, E., Newton, N., Barrett, E.L.\***, Teesson, M., Slade, T., & Conrod, P. *Secondary effects of a personality-targeted substance misuse prevention intervention: Does the Preventure program influence bullying among Australian adolescents?* Presented to the NDARC Annual Symposium, Sydney, 4 September.
- Kelly, E.\***, Teesson, M., Newton, N.C., Slade, T., & Conrod, P. *Bullies, victims and bully-victims: Should we care more about the bullies?* Presented at the NDARC Annual Symposium, Sydney, 4 September.
- Lancaster, K.\*** *Examining the opinions of people who use drugs towards drug policy in Australia*. Invited presentation at the NSW Users and AIDS Association's Drug Policy and You Symposium, Sydney, 16 October.
- Lancaster, K.\***, Ritter, A., Santana, L., & Madden, A. *Public opinion and drug policy: engaging the 'affected community'*. Presented at the 11<sup>th</sup> Dangerous Consumptions Colloquium, Sydney, 12-13 December.
- Larance, B.\* & Degenhardt, L.** *The diversion and injection of buprenorphine-naloxone film*. Presented at expert workshop at the 7<sup>th</sup> Albatros Conference, Paris, 6-8 June.
- Larance, B.\***, Degenhardt, L., Lintzeris, N., Mattick, R., & Ali, R. *The diversion and injection of buprenorphine-naloxone film among people who inject drugs: Findings from the Australian post-marketing surveillance studies, 2012*. Poster presented at the 75<sup>th</sup> College on Problems of Drug Dependence (CPDD) Conference, San Diego, 15-20 June.
- Larance, B.\***, Mattick, R.P., Ali, R., Dietze, P., Jenkinson, R., Lintzeris, N., & Degenhardt, L. *The diversion and injection of buprenorphine-naloxone film: Findings from the Australian post-marketing surveillance studies, 2012*. Poster presented to NDARC Annual Symposium, Sydney, 4 September.
- Larance, B.\***, Lintzeris, N, Ali, R., Mattick, R.P., White, N., Jenkinson, R., Dietze, P., & Degenhardt, L. *Buprenorphine-naloxone sublingual film: 2012 findings from the Australian post-marketing surveillance studies*. Presented to the APSAD Conference, Brisbane, 24-27 November.
- Leone, D., Santalucia, Y., Encina, C., Rojas, J.F., Molina, A., Chen, L., Chiu, K., Xiao, L., Thompson, L.W., Kyriazopoulos, H., Carragher, N.\***, Draper, B., Shanley, C., & Gallagher Thompson, D. *Global and local partnerships: Delivering dementia services to and advocating for culturally and linguistically diverse (CALD) carers of people living with dementia*. Presented at the CALD Communities Coalition Conference: Multiculturalism and the future of CALD Community Organisations, Canley Vale, 12 June.
- Leone, D., Santalucia, Y., Carragher, N.\***, Kyriazopoulos, H., Draper, B., Shanley, C., Gallagher-Thompson, D., Thompson, L.W., Chen, L., & Molina, A. *Global and local partnerships: Delivering dementia services to and advocating for culturally and linguistically diverse (CALD) carers of people living with dementia*. Presented at the Federation of Ethnic Communities Council (FECCA) 2013 Conference, Gold Coast, November.
- Lintzeris, N.\***, Allsop, D.J., Copeland, J., Dunlop, A.J., Montebello, M., Sadler, C., Rivas, G.R., Holland, R.M., Muhleisen, P., Norberg, M.M., Booth, J., & McGregor, I. *A randomized controlled trial of nabiximols (Sativex®) as an agonist replacement therapy during cannabis withdrawal*. Presented at the Medicine in Addiction Conference - RANZCP, Sydney, 16 March.
- Livingston, M.\*** *Density matters: the liberalisation of liquor licensing in Victoria*. Presented at the 6<sup>th</sup> Australasian Drug and Alcohol Strategy Conference, Sydney, 20 March.
- Livingston, M.\* & Raninen, J.** *Examining the distribution of drinking in Australia - do stable overall trends hide important shifts?* Presented at the Kettil Bruun Society Alcohol Epidemiology Symposium, Kampala, 4 June.
- Livingston, M.\*** *The impacts of policy on consumption and harm*. Presented at The Australian Winter School Conference, Brisbane, 18 July.
- Livingston, M.\***, Jiang, J., & Manton, E. *Alcohol consumption and traffic and non-traffic accidents in Australia, 1924-2006*. Presented at the 20<sup>th</sup> International Council on Alcohol, Drugs and Traffic Safety Conference, Brisbane, 26 August.
- Livingston, M.\*** *Alcohol consumption and related harms in Australia - understanding recent trends*. Presented to the NDARC Annual Symposium, Sydney, 4 September.
- Livingston, M.\*** *Density matters - the relationship between alcohol availability and alcohol problems*. Presented at the Alcohol Focus Scotland's National Licensing Conference, Glasgow, 9 September.
- Livingston, M.\*** *Improving our understanding of the links between alcohol availability, consumption and harm*. Presented at the Alcohol Focus Scotland Seminar, Glasgow, 10 September.

**Livingston, M.\*** *Alcohol: recent trends in consumption, harms and attitudes: are cultures already changing?* Presentation at the VicHealth Alcohol Culture Change Forum, Melbourne, 25 September.

**Livingston, M.\*** *Trends in non-drinking in the Australian population.* Presented to the Australasian APSAD Conference, Brisbane, 24-27 November.

**Mackdady, L., & Howard, J.\*** *Just when you thought things could not get worse being an international student in Australia when the unexpected happens.* Presented at the Symposium on Conflict and compromise: research and practice in Immigration Practice in Australia, XXXIII International Congress on Law and Mental Health, Amsterdam, 14-19 July.

**Magor-Blatch, L.\*, Copeland, J., & Howard, J.** *Group intervention for Amphetamine-type Stimulant Use (GIATS).* Presented at the 48<sup>th</sup> Annual Australian Psychological Society Conference, Cairns, 8-12 October.

**Mansoori, S. Mehrjerdi, Z. Deylamizadeh, A., & Dolan, K.\*** *Transition from using opioids to methamphetamine among females: A report from a residential detoxification center.* Presented at the 75<sup>th</sup> College on Problems of Drug Dependence (CPDD) Conference, San Diego, 15-20 June.

**Marel, C.\*, Teesson, M., Darke, S., Mills, K., Ross, J., Slade, T., Burns, L., & Lynskey, M.** *Long-term treatment outcomes for heroin dependence: Preliminary findings from the 11-year follow-up of the Australian Treatment Outcome Study.* Poster presented at the American Psychological Association (APA) Convention, Honolulu, 31 July - 4 August.

**Marel, C.\*, Mills, K., Darke, S., Ross, J., Slade, T., Burns, L., & Teesson, M.** *Static and dynamic predictors of criminal involvement among people with heroin dependence: Findings from a 3-year study.* Poster presented at the NDARC Annual Symposium, 4 September.

**Matalon, E.\*** *A brief intervention for cannabis.* Presented at the Pharmacy Guild NSW Conference, St Leonards, 15 May.

**Matalon, E.\*** *ACCU - the adolescent cannabis check-up.* Presented at the Australasian Mental Health Nursing Conference, Auckland, 21 June.

**Matalon, E.\*** *Motivating People to Change.* Presented at the Pharmacy Guild National Convention Darling Harbour, 22-23 June.

**Matalon, E.\*** *ACCU - the adolescent cannabis check-up.* Presented at the Australian Guidance and Counselling Association Conference, Brighton Le Sands, 27 June.

**Matalon, E.\* & Alperstein, D.** *Train the Trainer: A sustainable model of disseminating evidence-based practice.* Presented at the 14<sup>th</sup> International Mental Health Conference, Surfers Paradise, 6 August.

**Matalon, E.\*** *ACCU - the adolescent cannabis check-up.* Presented at the 14<sup>th</sup> International Mental Health Conference Surfers Paradise, 7 August.

**Matalon, E.\*** *Motivating people to change.* Presented at the Headspace Engagement Worker CLN, 13 August.

**Matalon, E.\* & Alperstein, D.** *Train the Trainer: A sustainable model of disseminating evidence-based practice.* Presented at the the Mental Health Services (TheMHS) Conference, Melbourne, 21 August.

**Matalon, E.\*** *A brief intervention for cannabis use disorder.* Presented at the Mental Health Services (TheMHS) Conference, Melbourne, 21 August.

**Matalon, E.\*** *Cannabis substance abuse and mental health.* Presented at the Early Psychosis Forum, Westmead, 16 September.

**Matalon, E.\*** *ACCU - the adolescent cannabis check-up.* Presented at the Youth Health Conference, Perth, 14 November.

**Matalon, E.\*** *Guidelines for the treatment of cannabis.* Presented at the APSAD Conference, Brisbane, 24-27 November.

**Matalon, E.\*** *Effective discussions with young people.* Presented at the Behaviour Schools Conference, Homebush, 19 December.

**McGregor, I., Aillsop, D.J.\*, Copeland, J., Lintzeris, N., Dunlop, A.J., Montebello, M., Sadler, C., Rivas, G.R., Holland, R.M., Muhleisen, P., Norberg, M.M., & Booth, J.** *A randomized controlled trial of nabiximols (Sativex®) as an agonist replacement therapy during cannabis withdrawal.* Presented at the International Cannabinoid Research Society (ICRS) Conference, Vancouver, 24 June.

**McSweeney, T.\*** *Assessing the impact of a sustained drug law enforcement operation in London.* Presented at the 6<sup>th</sup> Australasian Drug and Alcohol Strategy Conference, Sydney, 20 March.

**McSweeney, T.\*, Hughes, C., & Ritter, A.** *Tackling drug-related crime: Are there merits in diverting drug misusing defendants to treatment?* Presented at the 6<sup>th</sup> Australasian Drug and Alcohol Strategy Conference, Sydney, 21 March.

**McSweeney, T.\*, Hughes, C., & Ritter, A.** *Diverting drug-related offenders through the NSW MERIT System.* Presented to the NDARC Annual Symposium, Sydney, 4 September.

**Memedovic, S.\*, Ross, J., Slade, T., Darke, S., Mills, K., Burns, L., Lynskey, M., & Teesson, M.** *Rumination and substance use: Preliminary findings from an Australian longitudinal study of heroin users.* Presented at the 43<sup>rd</sup> Annual Congress of the European Association

of Behavioural Cognitive Therapies (EABCT), Marrakech, Morocco, 25-28 September.

**Michalopoulos, A.\*, & Howard, J.** *Participatory development of resources to address cannabis use among young people with complex needs.* Presented at the National Youth Conference, Fremantle, 13-15 November.

**Michalopoulos, A.\*, & Howard, J.** *Clear Your Vision.* Presented to the APSAD Conference, Brisbane, 24-27 November.

**Mills, K.\* & Dore, G.** *Brief interventions for post-traumatic stress disorder.* [Invited speaker]. Medicine in Addiction Conference, Sydney, 15-17 March.

**Mills, K.\*** *Trauma, post-traumatic stress disorder and substance use* [Invited keynote]. Presented at the Grampians Mental Health Conference, Ballarat, 26-27 March.

**Mills K.\*, Teesson, M., Barrett, E., Merz, S., Rosenfeld, J., Ewer, P., Sannibale, C., Baker, A., Hopwood, S., Back, S., & Brady, K.** *Integrated treatment of PTSD and SUDs: Predictors of clinically significant change in PTSD symptoms.* Presented at the American Psychological Association Annual Convention, Honolulu, 31 July-4 August.

**Nair, N.\*, Newton, N.C., Teesson, M., Slade, T., Barrett, E., Champion, K., & Conrod, P.** *Associations between personality traits and alcohol misuse: A longitudinal study on an Australian adolescent population.* Poster presented to the NDARC Annual Symposium, Sydney, 4 September.

**Nair, N., Newton, N.C., Teesson, M., Slade, T., Barrett, E.L.\*, Champion, K., & Conrod, P.** *Associations between personality traits and alcohol misuse: A longitudinal study on an Australian adolescent population.* Presented to the NDARC Annual Symposium, Sydney, 4 September.

**Nair, N.\*, Newton, N.C., Teesson, M., Slade, T., Barrett, E., Champion, K., & Conrod, P.** *Do internalising and externalising symptoms predict early or late alcohol consumption in adolescence?* Poster presented to the APSAD Conference, Brisbane, 24-27 November.

**Nasr, R., Howard, J.\*, & Lennings, C.** *How to assess 'character'? Implications for migrants, refugees or asylum seekers whose 'character' is being questioned.* Presented at the Symposium on Conflict and compromise: research and practice in Immigration Practice in Australia, XXXIII International Congress on Law and Mental Health, Amsterdam, 14-19 July.

**Newton, N.C.\* & Teesson, M.** *Secondary effects of a universal internet-based program to prevent alcohol and cannabis use amongst Australian adolescents: Reducing truancy, moral disengagement and psychological distress.* Poster presented at the 21<sup>st</sup> annual meeting for

the Society for Prevention Research (SPR), San Francisco, 28-31 May.

**Newton, N.C.\* & Teesson, M.** *Secondary effects of a universal internet-based program to prevent alcohol and cannabis use amongst Australian adolescents: Reducing truancy, moral disengagement and psychological distress.* Poster presented at the NDARC Annual Symposium, Sydney, 4 September.

**Nielsen, S., Larance, B.\*, Lintzeris, N., Black, E., Bruno, R., Murnion, B., Dunlop, A., & Degenhardt, L.** *Is pain associated with illicit opioid use or aberrant opioid-related behaviours in opioid substitution treatment patients?* Presented at the 75th College on Problems of Drug Dependence (CPDD) Conference, San Diego, 15-20 June.

**Norberg, M.\*, Khawar, L., Olivier, J. & Copeland, J.** *Efficacy of brief treatment for ecstasy use.* Poster presented at the National Institute on Drug Abuse (NIDA) International Forum, San Diego, 17 June.

**Ritter, A.\*** *Population planning for alcohol and other drug services: The national Drug and Alcohol Clinical Care & Prevention (DA-CCP) project.* Presented at the Centre for Addiction and Mental Health Conference, Toronto, 4-6 March.

**Ritter, A.\*** *Planning for drug treatment services: Estimating population need and demand for treatment.* Presented at the Seventh Annual International Society for the Study of Drug Policy Conference, Bogota, 15-17 May.

**Ritter, A.\*** *Young people and drug policy.* Presented at the 6<sup>th</sup> Annual Conference: ACT Alcohol, Tobacco and Other Drug Sector: New and Emerging Technologies: In ATOD Research, Policy, Practice and Participation, Canberra, 21 June.

**Ritter, A.\*** *Illicit drug policy: A case study of I2S demonstrated in the Drug Policy Modelling Program.* Digital poster presented at the First Global Conference on Research Integration and Implementation, Canberra, 9 September.

**Rodriguez, D.\*, Newton, N.C., & Teesson, M.** *Developing an online game on illicit drugs and related harms.* Poster presented at the NDARC Annual Symposium, Sydney, 4 September.

**Rooke, S.E.\*, & Copeland, J.** *Evolving cannabis information, treatment and support: Evaluating varying modes of treatment delivery.* Presented at the the 6<sup>th</sup> annual ACT ATOD sector conference, New and Emerging Technologies in ATOD Research, Policy, Practice and Participation, Canberra, 21 June.

**Rooke, S.E., Norberg, M.N., Copeland, J.\*, Albertella, L., Kavanagh, D.J., & Lau, A.** *Assess, Plan, Track, and Tips (APTT): Developing and testing the first smartphone app for managing cannabis use.* Presented at the NDARC Annual Symposium, Sydney, 4 September.

**Rosenfeld, J., Newton, N., Teesson M, Conrod, P., Slade, T., Champion, K., Kelly, E., & Barrett, E.L.\*** *Preventing adolescent substance use using the targeted 'Preventure' intervention: What do Australian students think?* Presented to the NDARC Annual Symposium, Sydney, 4 September.

**Roxburgh, A.\*** *Trends in prescription opioid prescribing, diversion, misuse and realted harms in Australia.* Presented at the Australasian Drug and Alcohol Strategy Conference, Sydney, 19-22 March.

**Roxburgh, A.\*** *Trends in fentanyl and oxycodone prescribing, diversion, misuse and harms.* Presented at the New South Wales Users and Aids Association (NUAA) APSAD Encore Symposium, Sydney, 2 May.

**Roxburgh, A.\*** *Topline findings from the National Illicit Drug Indicators Project.* Presented at the Department of Health, Canberra, 18 October.

**Shakeshaft, A.\*, Breen, C., & Abudeen, A.** *Community-based intervention to reduce alcohol harm: results of a randomised controlled trial.* Presented at the 6<sup>th</sup> Australasian Drug and Alcohol Strategy Conference, Sydney, 21 March.

**Shakeshaft, A.\*, Breen, C., & Abudeen, A.** *The Alcohol Action in Rural Communities (AARC) project: optimising translational research by combining research rigour and community knowledge.* Presented at the Australian National Preventive Health Agency Annual Conference, Canberra, 26 June.

**Shakeshaft A.\*** *Indigenous intervention research at NDARC: what have we learned and how might we do it better?* Presented at the NDARC Annual Symposium, Sydney, 4 September.

**Shakeshaft, A., Larance, B.\*, Degenhardt, L., Shand, F., Mattick, R.P., Holiday, S., Petrie, D., & Gorman, D.** *Community-level interventions to improve the treatment of chronic pain and prescription of pharmaceutical opioids in general practice.* Poster presented to the APSAD Conference, Brisbane, 24-27 November.

**Shanley, C., Leone, D., Santalucia, Y., Carragher, N.\*, Draper, B., & Kyriazopoulos, H.** *Coping with care-giving: An Australian Pilot with CALD carers.* Presented at the 2013 Australian Association of Gerontology (AAG) National Conference, Sydney, 27-29 November.

**Silins, E.\*, Olsson, C., Horwood, J., Hutchinson, D., Spry, E., Patton, G., Fergusson, D., Toumbourou, J.W., Mattick, R., & the Cannabis Cohort Research Consortium.** *Adolescent cannabis use and young adult outcomes: An integrative data analysis of three Australasian cohorts.* Presented at the Adolescent Health Research Forum, Sydney, 22 May.

**Silins, E.\*, Olsson, C., Horwood, J., Hutchinson, D., Spry, E., Patton, G., Fergusson, D., Toumbourou, J.W., Mattick, R., & the Cannabis Cohort Research Consortium.** *Early onset cannabis use and young adult outcomes: An integrative data analysis of three Australasian cohorts.* Poster presented at the National Institute on Drug Abuse (NIDA) International Forum, San Diego, 17 June.

**Silins, E.\*, Olsson, C., Horwood, J., Hutchinson, D., Spry, E., Patton, G., Fergusson, D., Toumbourou, J.W., Mattick, R., & the Cannabis Cohort Research Consortium.** *Early onset cannabis use and young adult outcomes: An integrative data analysis of three Australasian cohorts.* Poster presented at the 75th College on Problems of Drug Dependence (CPDD) Conference, San Diego, 15-20 June.

**Silins, E.\*, Olsson, C., Horwood, J., Hutchinson, D., Spry, E., Patton, G., Fergusson, D., Toumbourou, J.W., Mattick, R., & the Cannabis Cohort Research Consortium.** *Early onset cannabis use and young adult outcomes: An integrative data analysis of three Australasian cohorts.* Poster presented at the APSAD Conference, Brisbane, 24-27 November.

**Silins, E.\*, Hutchinson, D., Swift, W., Slade, T., Toson, B., & Rodgers, B.** *Factors associated with variability and stability of cannabis use in young adulthood.* Poster presented at the APSAD Conference, Brisbane, 24-27 November.

**Slade, T.\*, Chapman, C., & Teesson, M.** *The impact of sex and birth cohort on the transition from alcohol use to DSM-IV alcohol use disorders: Results of the 2007 National Survey of Mental Health and Wellbeing.* Presented at The 14<sup>th</sup> International Congress of the International Federation for Psychiatric Epidemiology (IFPE), Leipzig, 5-8 June.

**Slade, T.\*, McEvoy, P.M., Chapman, C., Grove, R., & Teesson, M.** *Comorbidity and temporal ordering of anxiety, mood and substance use disorders in the Australian general population: Which come first and what does this tell us?* Poster presented at The 14<sup>th</sup> International Congress of the International Federation for Psychiatric Epidemiology (IFPE), Leipzig, 5-8 June.

**Slade, T, Chapman, C\*, Swift, W, Tonks, Z, Teesson, M.** *International trends over time in the prevalence and harms of alcohol and cannabis use: what is the evidence for the closing gender gap?* Presented at The NDARC Annual Symposium, Sydney, 4 September.

**Smith, J.L.\*, Iredale, J.M. & Mattick, R.P.** *Electrophysiological evidence of subtle deficits in recognition memory processes in young heavy drinkers and cannabis users.* Poster presented at the NDARC Annual Symposium, Sydney, 4 September.

- Smith, J.L.\*, Iredale, J.M. & Mattick, R.P.** *Electrophysiological evidence of subtle deficits in recognition memory processes in young heavy drinkers and cannabis users.* Poster presented at the Brain Sciences UNSW Symposium, Sydney, 18 October.
- Smith, J.L.\*, Mattick, R.P., & Iredale, J.M.** *Electrophysiological evidence of subtle deficits in memory processes in young heavy drinkers and cannabis users.* Presented at the 23<sup>rd</sup> Australasian Society for Psychophysiology conference, Wollongong, 20-22 November.
- Smith, J.L.\*, Mattick, R.P. & Sufani, C.** *Differential conflict monitoring in young heavy drinkers.* Poster presented at the 23<sup>rd</sup> Australasian Society for Psychophysiology conference, Wollongong, 20-22 November.
- Smith, J.L.\*, Mattick, R.P., & Iredale J.M.** *Electrophysiological evidence of subtle deficits in memory processes in young heavy drinkers and cannabis users.* Presented at the APSAD Conference, Brisbane, 24-27 November.
- Stafford, J.\* & Burns, L.** *Exploring gender differences among people who inject drugs in Australia: Findings from the 2012 Illicit Drug Reporting System.* Poster presented at the 75th College on Problems of Drug Dependence (CPDD) Conference, San Diego, 15-20 June.
- Stafford, J.\* & Burns, L.** *Results from the 2013 Illicit Drug Reporting System.* Presentation at the 2013 National Drug Trends Conference, Melbourne, 15 October.
- Sunderland, M.\*, Slade, T., Carragher, N., Batterham, P., & Buchan, H.** *Change across ten year age bands in the level of internalizing psychopathology amongst the Australian general population.* Poster presented at the 14<sup>th</sup> International Congress of the International Federation of Psychiatric Epidemiology (IFPE), Leipzig, 5-8 June.
- Sunderland, M.\*, Slade, T., & Krueger, R.F.** *Examining the unique contribution of specific DSM-IV substance use disorders, over and above general externalizing psychopathology, when predicting anxiety disorders, affective disorders, suicidality, and psychosis.* Presented at the NDARC Annual Symposium, Sydney, 4 September.
- Sunderland, M.\*, Slade, T., & Krueger, R.F.** *Examining the shared and unique relationships among DSM-IV substance use and mental health disorders.* Presented at the Australasian Society for Psychiatric Research (ASPR) Conference, Melbourne, 4-6 December.
- Swift, W.\*** *Cannabis potency: An overview and first results of analysis of NSW cannabis cautioning seizures.* Presented at the 6<sup>th</sup> Australasian Drug and Alcohol Strategy Conference, Sydney, 19-22 March.
- Swift, W.\*, Slade, T., Degenhardt, L., Coffey, C., Carragher, N., & Patton, G.** *Adolescent predictors of alcohol use disorders in young adults.* Presented at The 14th International Congress of the International Federation for Psychiatric Epidemiology (IFPE), Leipzig, 5-8 June.
- Swift, W.\*, Slade, T., Degenhardt, L., Coffey, C., Carragher, N., & Patton, G.** *Adolescent predictors of alcohol use disorders in young adults.* Poster presented at the NDARC Annual Symposium, Sydney, 4 September.
- Taylor, A., Allsop, D.J.\*, Copeland, J., Lintzeris, N., Dunlop, A.J., Montebello, M., Sadler, C., Rivas, G.R., Holland, R.M., Muhleisen, P., Norberg, M.M., Booth, J., & McGregor, I.** *Results of a double-blind, randomized, placebo controlled trial of cannabinoid therapy for the management of cannabis withdrawal.* Poster presented at the 1<sup>st</sup> Australasian Mental Health and Addiction Nursing Conference, Auckland, 19 June.
- Teesson, M., Newton, N.C., Slade, T., Conrod, P., Champion, K., Barrett, E.\*, Nair, N., & Kelly, E.** *The CAP intervention: A comprehensive model for substance use prevention.* Poster presented at the 36<sup>th</sup> Annual Research Society on Alcoholism (RSA) Meeting, Orlando, 22-26 June.
- Teesson, M.\*, Chapman, C., Slade, T., & Newton, N.** *Are we losing our young women to alcohol and drugs?* Presented at The Centre of Research Excellence in Mental Health and Substance Use National Conference, The Mental Health Services Conference of Australia and New Zealand (TheMHS), Melbourne, 20 August.
- Teesson, M.\*, Newton, N.C., Slade, T., & Conrod, P.** *An integrated approach to preventing substance use in adolescents: Developing the CAP intervention.* Presented at the 43<sup>rd</sup> Annual Congress of the European Association of Behavioural Cognitive Therapies (EABCT), Marrakech, Morocco, 25-28 September.
- Tonks, Z.\*, Teesson, M., Newton, N., Andrews, G., Slade, T., Chapman, C., & Birrell, B.** *The Climate Schools Combined (CSC) Study: Internet-based prevention for anxiety, depression and substance use in young Australians.* Poster presented at the Mental Health Services (TheMHS) Conference, Melbourne, 21 August.
- Tonks, Z.\*, Teesson, M., Newton, N., Andrews, G., Slade, T., Chapman, C., & Birrell, B.** *The Climate Schools Combined (CSC) Study: Internet-based prevention for anxiety, depression and substance use in young Australians.* Poster presented at the NDARC Annual Research Symposium, Sydney, 4 September.
- Torok, M.\*, Darke, S., Kaye, S., & Shand, F.** *Violent offending among substance users: The role of individual level characteristics.* Presented at the Society for Prevention Research 21<sup>st</sup> Annual Meeting, San Francisco, 27 -31 May.
- Vuong, T.\*** *Methodone treatment: a catalyst for a shift away from compulsory rehabilitation centres in Vietnam.* Invited presentation at the International Congress on AIDS in Asia and the Pacific, Bangkok, 20 November.
- Van Buskirk, J.\*, Roxburgh, A., & Burns, L.** *Online availability of illicit and emerging drugs.* Presented at the Australasian Drug and Alcohol Strategy Conference, Sydney, 22 March.
- Van Buskirk, J.\*, Roxburgh, A., & Burns, L.** *Online availability of illicit and emerging drugs.* Presented at the NDARC Annual Research Symposium, Sydney, 4 September.
- Van Buskirk, J.\*, Roxburgh, A., & Burns, L.** *Online availability of illicit and emerging drugs.* Presented at the Newcastle Community Drug Action Team, Newcastle, 17 September.
- Van Buskirk, J.\*, Roxburgh, A., & Burns, L.** *Silk Road and internet monitoring - the first 12 months.* Presented at the 2013 National Drug Trends Conference, Melbourne, 14 October.
- Van Buskirk, J.\*, Roxburgh, A., Bruno, R., & Burns, L.** *Silk Road monitoring - the first 12 months.* Presented at the 2013 APSAD Conference, Brisbane, 24 November.
- Wadolowski, M.\*, Bucello, C., Aiken, A., Mattick, R., Slade, T., Najman, J., Kypri, K., Hutchinson, D., Bruno, R., & McBride, N.** *Young and not so drunk: Adolescent alcohol consumption rates are not what we think they are.* Invited presentation to the 14<sup>th</sup> International Congress of the International Federation of Psychiatric Epidemiology (IFPE), Leipzig, 5-8 June.
- Warren, J., Royce, P., & Howard, J.\*** *The WET and the DRY: cannabis and alcohol use among Aboriginal people in the Kimberley.* Presented at the APSAD Conference, Brisbane, 24-27 November.
- Whittaker, E.\*, & Burns, L.** *It comes with the Territory: Recruitment issues and market characteristics unique to Darwin.* Presented at the 2013 National Drug Trends Conference, Melbourne, 14 October.
- Woodcock, K.\*, Stanwell, P., Gardner, A., Teesson, M., Baker, A., Mills, K., & Kay-Lambkin, F.** *A systematic review of blast-related mild traumatic brain injuries, post-traumatic trauma symptoms and substance misuse.* Presented at the 2013 Australasian Society for Psychiatric Research (ASPR) Conference, Melbourne, 4-6 December.

# WORKSHOPS AND INVITED LECTURES

**Allsop, D.J.\*, Copeland, J., Lintzeris, N., Dunlop, A.J., Montebello, M., Sadler, C., Rivas, G.R., Holland, R.M., Muhleisen, P., Norberg, M.M., Booth, J., & McGregor, I.** *A randomized controlled trial of nabiximols (Sativex®) as an agonist replacement therapy during cannabis withdrawal.* Invited presentation to the University of Wollongong Psychology Colloquium, Wollongong, 29 May.

**Allsop, D.J.\*** *Cannabis withdrawal – measurement and treatment.* Presented to the UNSW Masters in Public Health course, Sydney, 8 June.

**Allsop, D.J.\*, Copeland, J., Lintzeris, N., Dunlop, A.J., Montebello, M., Sadler, C., Rivas, G.R., Holland, R.M., Muhleisen, P., Norberg, M.M., Booth, J., & McGregor, I.** *A randomized controlled trial of nabiximols (Sativex®) as an agonist replacement therapy during cannabis withdrawal.* Invited presentation to The Langton Centre In Service training, Sydney Hospital and Sydney Eye Hospital, Sydney, 10 June.

**Allsop, D.J.\*, Copeland, J., Lintzeris, N., Dunlop, A.J., Montebello, M., Sadler, C., Rivas, G.R., Holland, R.M., Muhleisen, P., Norberg, M.M., Booth, J., & McGregor, I.** *A randomized controlled trial of nabiximols (Sativex®) as an agonist replacement therapy during cannabis withdrawal.* Invited presentation to Hunter New England Local Health Network In Service Training Day, Newcastle Community Health Center, Newcastle, 25 July.

**Allsop, D.J.\*, Copeland, J., Lintzeris, N., Dunlop, A.J., Montebello, M., Sadler, C., Rivas, G.R., Holland, R.M., Muhleisen, P., Norberg, M.M., Booth, J., & McGregor, I.** *A randomized controlled trial of nabiximols (Sativex®) as an agonist replacement therapy during cannabis withdrawal.* Invited presentation to South Eastern Sydney Local Health Network In Service Training Day, Sydney Hospital and Sydney Eye Hospital, Sydney, 6 August.

**Barrett, E.L.\*** *Substance use disorder and aggression.* Invited lecture for the UNSW Masters of Forensic Psychology program, Sydney, 23 April.

**Barrett, E.L.\*** *Substance use and PTSD.* Invited presentation to the NSW Justice and Forensic Mental Health Network Drug & Alcohol Symposium, Sydney, 20 June.

**Barrett, E.L.\*** Conference Convenor and Chair, The NHMRC National Centre of Research Excellence in Mental Health and Substance Use (CREMS) Conference, Melbourne, 20 August.

**Bell, A.\*** *Clinical Train the Trainer – ACCU.* Presentations to Drug & Alcohol Services South Australia, Adelaide, 6 & 7 May; UniSA, Adelaide, 15 & 16 July; NDRI, Curtin University, Perth, 16 & 17 September; Turning Point Alcohol and Drug Centre, Fitzroy, 25 & 26 November.

**Bell, A.\*** *Clinical Train the Trainer – quitting cannabis.* Presentations to Drug & Alcohol Services South Australia, Adelaide, 7 & 8 May; UniSA, Adelaide 16 & 17 July; NDRI Curtin University, Perth, 17 & 18 September; Turning Point Alcohol and Drug Centre, Fitzroy, 26 & 27 November.

**Bull, D.\*** *Cannabis & other drugs & the workplace – OHS & supervisors.* Presentation to Civil Contractors Federation, Adelaide, 12 February; EGSglobal Human Resources, Adelaide, 12 February.

**Chalmers, J.\*** *Treatment pathways from the client's perspective: Informing a better match between service provision and service need.* Presented at the NSW Health Drug and Alcohol Program Council, Sydney, 12 April.

**Copeland, J.\*** *Cannabis: Current controversies.* Presented to the NSW Poisons Centre Seminar Series, Westmead Children's Hospital, Sydney, 7 May.

**Copeland, J.\*** *Cannabis treatment.* Invited presentation to the Westmead Hospital Symposium, Sydney, 7 August.

**Copeland, J.\*** *NCPIC: an intersectoral initiative.* Invited presentation to the visiting delegation from the Chinese Ministry of Public Security, Sydney, 9 September.

**Copeland, J.\*** *Cannabis in Australia: A public health response.* Invited presentation to the Neuropsychiatry Lecture Series, Dr Ram Manohar Lohia Hospital & PGIMER, GGS-IP University, New Delhi, 18 September.

**Copeland, J.\*** *Cannabis: A masterclass.* Presented to the Substance Misuse Masterclass Program, James Cook University, Cairns, 6 November.

**Darke, S.\*** *Childhood physical abuse, non-suicidal self-harm and attempted suicide amongst regular injecting drug users.* Presented to the Institute of Psychiatry, Kings College, London, 3 July.

**Darke, S.\*** *Characteristics, circumstances and toxicology of sudden or unnatural deaths involving very high range alcohol concentrations.* Presented at the Department of Psychology, London Southbank University, London, 4 July.

**Degenhardt, L.** *Drug use disorders.* Invited presentation to the DCP-3 Meeting: Mental, Neurological & Substance Use Disorders Volume, Delhi, 4-5 February.

**Dolan, K.\*** *Dealing with female drug users,* Regional Training UN Head Office, Tehran, 7 January.

**Dolan, K.\*** *Training course: Conference abstract writing workshop.* Presented to the Australian Society of HIV Medicine, Sydney, 13 June.

**Elkins, K.\*** *Clinical Train the Trainer – ACCU & Quitting Cannabis* Presentation to: Victoria University Counselling Service, Melbourne, 15 May.

**Farrell, M.\*** *Dean's Lecture Series: The rising tide of mental ill health, suicide and substance use in young Australians: 21st century challenges and solutions.* Keynote presentation to UNSW Dean's Lecture Series, Sydney, 18 June.

**Farrell, M.\*** *Trends and issues in substance use and mental health problems in young people.* Invited presentation to UQ Centre for Clinical Research Seminar Series, Sydney, 19 July.

**Farrell, M.\*** *Emerging trends and findings in alcohol and drugs research.* Invited presentation to the NSW Bureau of Crime Statistics and Research Policy Seminar, Sydney, 24 July.

**Farrell, M.\*** *Delivering harm reduction services in the criminal justice system.* Invited presentation to the Needle & Syringe Program (NSP) NSW Workers Forum, Sydney, 29 October.

**Howard, J.\*** *Cannabis and young people.* Presentation to Salvation Army symposium, Penrith, 4 February.

**Howard, J.\*** *Youth friendly harm reduction.* Presentation to Youth Vision/UNODC Management of harm reduction programs – implications for OST workshop, Nagarkot, Kathmandu, 29-30 April.

**Howard, J.\*** *Some drugs and issues of concern.* Presentation to Youth Vision/UNODC Management of harm reduction programs – implications for OST workshop, Nagarkot, Kathmandu, 29-30 April.

**Howard, J.\*** *NCPIC: Community Information and Development and Cannabis Yarns workshop.* Presentations to: Drug and Alcohol Services, Kempsey, 20 March; Recovery Centre, Broome, 8 April; Godinymayin Yijard Rivers Arts and Cultural Centre, Kununurra, 10 & 11 April; Katherine Training Centre, Katherine, 27 May; FaHCSIA (now Australian Government Department of Social Services), Darwin, 28 May; Miwatj Health, Aboriginal Organisation, Nhulunbuy/Yirrkala, 29 May; Institute for Aboriginal Development, Alice Springs, 31 May.

**Howard, J.\*** *Drugs and young people in Australia.* Presentation to KETHEA symposium, Athens, 2 July.

**Howard, J.\*** *Cannabis and young people.* Presentation to KETHEA symposium, Athens, 2 July.

**Howard, J.\*** *Drugs and young people.* Presentation to the Community Drug Action Team (CDAT), Granville, 10 September.

**Howard, J.\*** *Cannabis update.* Presentation to the CDAT, Granville, 10 September.

**Howard, J.\*** *Comorbidity.* Presentation to the Community Drug Action Team (CDAT), Granville, 10 September.

**Howard, J.\*** *Cannabis update.* Presentation to the Child Protection workforce, Wollongong, 3 September.

- Howard, J.\*** *Complexity*. Presentation to the Department of Juvenile Justice, Fairfield, 3 September.
- Howard, J.\*** *Cannabis and GPs - an update*. Presentation to GPs, Terrigal, 10 September.
- Howard, J.\*** *Changing face of cannabis in Nepal*. Presentation to Workshops for Youth Vision and UNODC, Kathmandu, 16-23 September.
- Howard, J.\*** *ToT youth friendly harm reduction*. Presentation to Workshops for Youth Vision and UNODC, Kathmandu, 16-23 September.
- Howard, J.\*** *Building capacity for youth substance use treatment*. Workshop for BNCA and CPA, Bhutan, 24-27 September.
- Larance, B.\*** *The diversion and injection of the medications used in opioid substitution therapy*. Presented to the Pharmacy Guild Workshop: Drugs on the Street, Sydney, 25 May.
- Livingston, M.\*** *The effects of changes in the availability of alcohol on consumption, health and social problems*. PhD Presentation to the School of Population Health, University of Melbourne, Parkville, 21 February.
- Livingston, M.\*** *The effects of changes in the availability of alcohol on consumption, health and social problems*. Presented at the Victorian Institute of Forensic Medicine, Monthly Seminar Series, Melbourne, 9 April.
- Livingston, M.\*** *Understanding recent trends in alcohol consumption and harm in Australia*. Presentation at Talking Point Alcohol and Other Drug Issues Seminar Series, Melbourne, 19 June.
- Livingston, M.\*** *Alcohol availability and alcohol-related harm - research and policy*. Presented to NDRI Winter School: Drugs, Policy and Public Health, Perth, July 23.
- Livingston, M.\*** *Understanding recent trends in alcohol consumption and harm in Australia*. Seminar presented at The Office of Liquor Gaming and Racing, Melbourne, 1 August.
- Magor-Blatch, L. & Howard, J.\*** *Therapeutic communities - Australian experience*. Presentation to KETHEA symposium, Athens, 2 July.
- Matalon, E.\*** *Clinical Train the Trainer - ACCU*. Presentation to: NCPIC, Sydney, 4 & 5 February; Insight Brisbane 18 & 19 February; Griffith University, Southbank, Brisbane 4 & 5 March; ATODS, Townsville, 18 & 19 March.
- Matalon, E.\*** *Clinical Train the Trainer - quitting cannabis*. Presentation to: NCPIC, Sydney, 11 & 12 February; Insight, Brisbane, 19 & 20 February; Griffith University, Southbank, Brisbane, 5 & 6 March; ATODS, Townsville 19 & 20 March.
- Matalon, E.\*** *Clinical overview - interventions for cannabis*. Presentation to: Anglicare, Launceston, 10 April.
- Matalon, E.\*** *Clinical guidelines for the treatment of cannabis*. Presentation to: Royal Hobart Hospital 11 April; Centre for Education & Workforce Development, SSWAHS, Bankstown, 4 July.
- Matalon, E.\*** *Effective discussions with young people*. Presentations to: Headspace Webinar, 7 May; Catholic Schools Office, Pennant Hills, 18 June & 29 July.
- Matalon, E.\*** *Quitting cannabis: 1-6 brief intervention for cannabis use*. Presentation to Fairhaven Recovery Services, Eagle Heights, 6 September.
- Matalon, E.\*** *Cannabis withdrawal management & synthetics*. Presentation to MERIT, Liverpool, 27 September.
- Matalon, E.\*** *Drug-induced psychosis & other engagement issues*. Presentation to Department of Juvenile Justice, Sydney, 9 October.
- Matalon, E.\*** *Very brief intervention for cannabis*. Presentations to: Headspace Webinar presentation 16 May; Fairhaven Recovery Services, Eagle Heights, 6 September; Southport Hospital, Gold Coast Health, 10 September; Robina Hospital, Gold Coast Health, 11 September; Alcohol & Other Drugs Service, Mt Gravatt, 20 November.
- Matalon, E.\*** *ACCU - the Adolescent Cannabis Check-Up*. Presentations to: Albion St Centre, Sydney, 9 April; Headspace Webinar presentation, 22 & 29 May, 5 & 12 June; Centre for Education & Workforce Development, SSWAHS, Bankstown, 4 July; Lifeline, Gordon, 5 July; Sydney University Psychology Department, Sydney, 6 & 8 November.
- Matalon, E.\*** *Cannabis - Everything You Need to Know*. Presentations to: Albion St Centre, Sydney, 9 April; Anglicare, Launceston, 10 April; Headspace Webinar presentation, 8 May; Fairhaven Recovery Services, Eagle Heights, 6 September; Southport Hospital, Gold Coast Health, 10 September; Robina Hospital, Gold Coast Health, 11 September; Alcohol & Other Drugs Service, Mt Gravatt, 20 November.
- McKell, D.\* & Entwistle, G.\*** *Injecting drug users and recreational drug users: Results from the 2013 IDRS and EDRS*. Presented at the Active Learning Network at St Vincent's Hospital, Sydney, 9 December.
- Mills, K.\*** *Trauma, post-traumatic stress disorder and substance use*. Invited seminar, Royal North Shore Hospital Department of Social Work, Sydney, 28 March.
- Mills, K. & Barrett, E.L.\*** *UNSW Experimental Clinical Psychology 3: Substance use workshop*. Invited workshop presentation for the UNSW Masters of Clinical Psychology program, Sydney, 31 May.
- Mills, K.\*** *Research examining the treatment of substance use clients with PTSD*. Invited seminar, Jarrah House, Sydney, 16 July.
- Mills, K.\*** *Substance use and post-traumatic stress disorder*. Invited seminar, Campbelltown Community Mental Health, Campbelltown, 24 October.
- Nelson, P.K.\*, Swift, W., Degenhardt, L. & Kenny, D.T.** *Links between drug use and recidivism among young offenders: what are the implications for practice?* Invited presentation to Justice Health, Malabar, 26 September.
- Ritter, A.\*** *Unmet demand and treatment pathways*. Presented to the QIT Meeting, Sydney, 15 February.
- Ritter, A.\*** Panel member of roundtable discussion on international legal frameworks, Addictions and Lifestyles in Contemporary Europe - Reframing Addictions Project (ALICE RAP) 2013 Plenary Meeting, Barcelona, Spain, 23 April.
- Ritter, A.\*** *Understanding the relationships between policy and research*. Presented to the NIDA International Drug Policy Working Group Webinar, 7 May.
- Ritter, A.\*** Opening Ceremony, Seventh Annual International Society for the Study of Drug Policy Conference, Bogota, Colombia, 15 May.
- Ritter, A.\*** *Launch: Australian governments' expenditure on illicit drugs in 2010: Treatment, law enforcement, prevention and harm reduction*. Presented to the DPMP Research Symposium, Canberra, 20 June.
- Ritter, A.\*** *Bridging the research-policy divide*. Lecture prepared for the Addiction Policy Course, International Programme in Addiction Studies (IPAS), a collaboration between The University of Adelaide, Virginia Commonwealth University and King's College London, August.
- Shakeshaft, A.\*** *Building a research career: balancing grants, papers, supervision (and teaching...)*. Presentation to the School of Health, University of New England, Armidale, 8 February.
- Shakeshaft, A.\*** *Implementation science: what is it and how can we do it?* Invited presentation to the Community Mental Health Drug and Alcohol Research Network, Orange, 4 June.
- Shakeshaft, A.\*** *Alcohol: burden of disease and primary interventions*. Presentation to the Master of Public Health course, University of Sydney, Sydney, 31 August.
- Shakeshaft, A.\*** *More research in the bush for a better rural future: how can we do it?* Invited presentation to the Future Health Leaders Forum, Orange NSW, 21 September.

**Shakeshaft, A.\*, Clifford, A., Calabria, B., Tsey, K., McCalman, J., Bainbridge, R., Doran, C., Maple, M., McKay, K., Knight, A., Sneijder, M., Allan, J., Bliss, D., MacQueen, R., Shakeshaft, B., Kealey, J., Lively, A., & Singleton, M.** *Indigenous intervention research: Examining what we know and how we might do better.* Presentation at the School of Public Health and Community Medicine, University of NSW, Sydney, 11 October.

**Smith, J.L.\*** *Substance use and young brains.* Invited presentation to the NSW Addiction Medicine Training Day, Westmead, 27 August.

**Swift, W.\*** *Cannabis potency.* Presentation to the NSW Drug Squad, NSW Police Headquarters, Sydney, 27 March.

**Teesson, M.\* & Newton, N.** *Kids and Alcohol: How schools can help reduce the harm.* Invited seminar presented at the Principals Australia Institute, Darwin, 24 October.

**Teesson, M.\* & Newton, N.** *Kids and Alcohol: How schools can help reduce the harm.* Invited seminar presented at the Principals Australia Institute, Brisbane, 25 October.

**Teesson, M.\* & Newton, N.** *Kids and Alcohol: How schools can help reduce the harm.* Invited seminar presented at the Principals Australia Institute, Perth, 31 October.

**Teesson, M.\* & Newton, N.** *Kids and Alcohol: How schools can help reduce the harm.* Invited seminar presented at the Principals Australia Institute, Adelaide, 1 November.

**Teesson, M.\* & Newton, N.** *Kids and Alcohol: How schools can help reduce the harm.* Invited seminar presented at the Principals Australia Institute, Sydney, 5 November.

**Teesson, M.\* & Newton, N.** *Kids and Alcohol: How schools can help reduce the harm.* Invited seminar presented at the Principals Australia Institute, Canberra, 15 November.

**Teesson, M.\* & Newton, N.** *Kids and Alcohol: How schools can help reduce the harm.* Invited seminar presented at the Principals Australia Institute, Melbourne, 28 November.

**Teesson, M., Newton, N. & Stapinski, L.\*** *Kids and Alcohol: How schools can help reduce the harm.* Invited seminar presented at the Principals Australia Institute, Hobart, 29 November.

**Van Buskirk, J.\*, Roxburgh, A., & Burns, L.** *Online availability of illicit and emerging drugs.* Workshop presentation at the Court Diversion Program, Liverpool, 27 September.

**Van Buskirk, J.\*, Roxburgh, A., & Burns, L.** *Online availability of emerging drugs and associated risks.* Workshop presentation at the AIDS Council of NSW (ACON) Snakes and Ladders Series, Sydney, 22 November.

## ACRONYMS

ACE	Access the Cost Effectiveness	CWS	Cannabis Withdrawal Scale
ADHD	Attention Deficit Hyperactivity Disorder	DA-CCP	national Drug and Alcohol Clinical Care and Prevention model
AFP	Australian Federal Police	DALY	disability-adjusted life year
AHS	Area Health Service	DNeT	Drugs and New Technologies project
AIHW	Australian Institute of Health and Welfare	DPMP	Drug Policy Modelling Program
AIVL	Australian Injecting & Illicit Drug Users League	DSM-IV	Diagnostic and Statistical Manual of Mental Disorders
ANCD	Australian National Council on Drugs	DUMA	Drug Use and Monitoring in Australia
ANU	Australian National University	EDRS	Ecstasy and Related Drugs Reporting System
AOD	alcohol and drug	EMCDDA	European Centre for Drugs and Drug Addiction
AOD CL	Drug and Alcohol Consultation Liaison Services	ENAACT	Expanding Naloxone Availability in the ACT program
APSAD	Australasian Professional Society on Alcohol and other Drugs	ERDs	Ecstasy and Related Drugs
ARC	Australian Research Council	FARE	Foundation for Alcohol Research & Education
ARV	antiretroviral HIV treatment	FASD	Fetal alcohol spectrum disorder
ATOD	alcohol, tobacco and other drug	GBD	Global Burden of Disease
ATOS	Australian Treatment Outcome Study	GP	general practitioner
ATP	Australian Temperament Project	HCV	hepatitis C virus
ATS	amphetamine-type substance	IASP study	International ADHD in Substance use disorders Prevalence study
BATD-R	Behavioural Activation Therapy for Depression	IDRS	Illicit Drug Reporting System
BOCSAR	NSW Bureau of Crime Statistics and Research	IDU	Injecting drug use
Burnet Institute	Macfarlane Burnet Institute for Medical Research and Public Health	IRT	Item Response Theory
CAP	Climate Schools and Prevention	KEs	key experts
CASP	Continuous performance test for ADHD in SUD Patients	MDD	major depressive disorder
CAT	computerised adaptive test	MDMA	3,4-methylenedioxy-N-methylamphetamine
CCRC	Cannabis Cohort Research Consortium	MHDAO	Mental Health and Drug and Alcohol Office, NSW Health
CCT	centre-based compulsory treatment	MMT	methadone maintenance treatment
CDAT	Community Drug Action Team	MR	magnetic resonance
CHDS	Christchurch Health and Development Study	MUSP	Mater Hospital and University of Queensland Study of Pregnancy
CHERE	Centre for Health Economics Research and Evaluation	NCPIC	National Cannabis Prevention and Information Centre
CL	Consultation Liaison	NDC	National Drugs Campaign
CNCP	chronic non-cancer pain	NDLERF	National Drug Law Enforcement Research Fund
CPDD	College on Problems on Drug Dependence	NDI	National Death Index
CPQ-R	Cannabis Problems Questionnaire-Revised	NDRI	National Drug Research Institute
CPTs	Continuous Performance Tests	NDSHS	National Drug Strategy Household Survey
CRA	Community Reinforcement Approach	NEDs	new and emerging drugs
CRAFT	Community Reinforcement and Family Training	NHMD	National Hospital Morbidity Dataset
CRE	Centre of Research Excellence	NHMRC	National Health & Medical Research Council
CREIDU	Centre of Research Excellence into Injecting Drug Use	NIDA	US National Institute on Drug Abuse
CREMS	Centre of Research Excellence in Mental Health and Substance Use	NIDIP	National Illicit Drug Indicators Project
CREMSI	Centre of Research Excellence in Mental Health Systems Improvement	NRT	nicotine replacement therapy
CSC	Climate Schools Combined study	NOMAD	National Opioid Medications Abuse Deterrence study
CRESP	Centre of Research Excellence in Suicide Prevention	NPA	National Partnership Agreement (on Homelessness)
CSI	Climate Schools Interactive Study	NPS	new psychoactive substances
		NSB	Net Social Benefit

NUAA	NSW Users and AIDS Association
OIMS	Offender Integrated Management System
ORT	opioid replacement therapy
OST	opioid substitution treatment
OTP	Opioid Treatment Program (NSW)
QADREC	Queensland Alcohol and Drug Research and Education Centre
PATH	Personality and Total Health Through Life Project
PHDAS	Pharmaceutical Drugs of Addiction System
PIRT	Program of International Research and Training
POINT	Pain and Opioids in Treatment
PTSD	post-traumatic stress disorder
PWID	people who inject drugs
py	person-years
RCT	randomised controlled trial
REU	regular ecstasy and psychostimulant users
ROD	Reoffending Database
RTDs	Ready-to-Drink alcoholic beverages
RYU	Reduce Your Use program
SES	socio-economic status
SHADE	Self Help for Alcohol/other drug use and Depression
SUD	substance use disorder
TAFE	tertiary and further education
TC	therapeutic community
THC	tetrahydrocannabinol
UNE	University of New England
UNODC	United Nations Office on Drugs and Crime
UQ	University of Queensland
UWA	University of Western Australia
UWS	University of Western Sydney
VAHCS	Victorian Adolescent Health Cohort Study
WHO	World Health Organisation
YAARS	Young Australians Alcohol Reporting System
YLL	years of life lost

\*Formerly Department of Education, Science and Training (DEST)

\*\*Formerly Alcohol Education and Rehabilitation Foundation (AERF)



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