



# Abstracts

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## **KEYNOTE**

### **Policies for improving the quantity and quality of substance use disorder treatment**

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Many health care systems around the world fail to make substance use disorder treatment sufficiently available, fail to ensure that what treatment is provided is of high quality, or both. Public policy -- for example in the U.S. under President Obama -- has thus attempted to improve both the quantity and quality of substance use disorder treatment. So far, it has proven easier to expand quantity than quality. The former is in many ways a function of resources, whereas the latter requires an understanding of how and why treatment works and how organizations change, which is often lacking. This presentation will examine these issues as they have evolved in several developed countries, with a focus on the research evidence regarding which policies have proven effective and which have not.

## PRESENTATIONS

### **Longitudinal trajectories of heroin use: New findings from the 11-year follow up of the Australian Treatment Outcome Study**

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Longitudinal naturalistic studies of heroin dependence provide the unique opportunity to examine predictors of remission, criminality, mortality, psychopathology and long-term treatment outcomes. Indeed, although there has been much research examining heroin dependence from cross-sectional perspectives, the comparably few longitudinal cohort studies allow long-term trajectories of heroin use, abstinence and other comorbid disorders to be examined. Long-term patterns and trajectories of heroin use have important implications for treatment responses, clinical practice and policy. This presentation draws on data collected from the Australian Treatment Outcome Study (ATOS) over 11 years, to examine long-term trajectories of heroin use. Participants were administered the ATOS structured interview, addressing demographics, treatment history, drug use, heroin overdose, criminality, health and mental health. 431 (70.1%) of the original 615 participants interviewed at baseline were reinterviewed at the 11-year follow-up, and 63 (10.2%) were deceased. Overall, 96.1% of the cohort completed at least one follow-up interview over the study period. Six distinct patterns of heroin use were seen over the 11 years: i) rapid decrease to maintained abstinence; ii) rapid decrease with rapid relapse; iii) rapid decrease with late relapse; iv) gradual decrease to near abstinence; v) gradual decrease; and vi) no decrease. The findings provide evidence for early and sustained intervention, a need to treat both mental health and substance use disorders in people with heroin dependence, and indicate periods of time where people in particular groups may be especially vulnerable to relapse, and may therefore benefit from additional support.

## The complexities of chronic pain: findings from a cohort of 1,500 Australians taking prescription opioids for non-cancer pain

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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 have not examined aberrant drug use behaviours. The Pain and Opioids in Treatment (POINT) study commenced in 2012 and is the first Australian study to examine the patterns of prescribing for individual patients, and the outcomes for these patients in the longer term. This presentation will cover baseline data from the 1,514 chronic pain patients who are taking part in the study. Specifically it will:

1. Describe the socio-demographic, physical and mental health profile of the cohort at baseline;
2. Report on pharmaceutical opioid use, non-adherence, and opioid use disorders in the cohort;
3. Report on the use of cannabis by POINT participants to control pain.

## An integrated approach to preventing substance use in adolescents: 24-month outcomes of the CAP (Climate and Preventure) intervention

Nicola Newton<sup>1</sup>, Maree Teesson<sup>1</sup>, Patricia Conrod<sup>2</sup>, **Tim Slade<sup>1</sup>**, Katrina Champion<sup>1</sup>, Natasha Nair,  
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**Issues:** Early initiation of substance use is associated with a range of negative consequences. Although school-based prevention programs exist, their efficacy is contentious and no programs prevent substance use in both high- and low-risk adolescents. Our proposed model addresses this gap by developing an integrated approach to prevention which combines the effective ‘universal’ *Climate Schools* and ‘selective’ personality-targeted *Prevention* programs. The program is known as the *CAP (Climate and Preventure)* intervention.

**Approach:** To examine the efficacy of the CAP intervention, a cluster RCT is currently being conducted in 27 Australian schools. 2608 students aged 13-14 years were invited to participate in the trial and schools were randomised to one of four conditions; the ‘Control’ condition, the ‘Climate’ condition, the ‘Prevention’ condition, or the ‘CAP’ condition. Students were assessed at baseline, post intervention (79% follow-up rate), 12 months post baseline (86% follow-up rate) and 24 months post baseline (81%) on the uptake and harmful use of alcohol and other drugs, substance use related harms, and mental health symptomatology.

**Key findings:** At baseline assessment 10.3% have had at least one standard drink of alcohol with 5.0% having consumed five or more standard drinks on at least one occasion. Preliminary findings demonstrate that the *Climate* and *CAP* interventions both result in increased knowledge about alcohol, when compared to the Control intervention. Analyses are currently being carried out to unpack these findings and determine whether there are differential intervention effects for high- and low-risk adolescents.

**Implications and Conclusion:** If the CAP intervention can reduce alcohol and drug use by levels equal or greater than that of the stand-alone programs, it will be a significant contribution to health promotion and to reducing the burden of disease, social costs, and disability associated with substance abuse in Australia.

## **Parenting practices and drinking among adolescents and young adults: outcomes from the Parental Supply of Alcohol Study**

**Richard Mattick<sup>1</sup>, Tim Slade<sup>1</sup>, Delyse Hutchinson<sup>1</sup>, Monika Wadolowski<sup>1</sup>, Alexandra Aiken<sup>1</sup>, Jake Najman<sup>2</sup>, Kypros Kypri<sup>3</sup>, Nyanda McBride<sup>4</sup>, Raimondo Bruno<sup>5</sup>**

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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. However the impact of parental supply is not well understood and may be unintentionally harmful. The Parental Supply of Alcohol study commenced in 2010 and has been examining the consequences of parental supply within the broader context of parent, child and peer relationships. 1977 families were recruited across NSW, TAS and WA schools and have been followed up at 12 month intervals. This presentation will cover how parental supply of alcohol influences patterns of adolescent alcohol consumption.

## BREAKOUT SESSIONS

### **Breakout One: Interventions using new technologies**

Panel: Katrina Champion<sup>1</sup>, Natasha Nair<sup>1</sup> and Mark Deady<sup>1</sup>  
Facilitator: Frances Kay-Lambkin<sup>1,2</sup>

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This session will outline three online interventions currently being developed and evaluated at NDARC: a web based intervention for young people with co-occurring depression and problematic alcohol use; an online intervention for risky drinkers facilitated by GPs; and an online prevention and intervention program for school students. This workshop is suitable for AOD clinicians and professionals keen to learn about emerging e-health interventions.

## **Breakout Two: Three brief interventions for cannabis use disorder delivered within a clinical setting**

Facilitator: Etty Matalon<sup>1</sup>

<sup>1</sup> National Cannabis Prevention and Information Centre, National Drug and Alcohol Research Centre, University of New South Wales, Sydney, New South Wales, Australia

This workshop will outline three evidence based interventions that utilise cognitive-behavioural therapy and motivational interviewing. These interventions are based on findings of Australian randomised-controlled trials conducted by staff from the National Cannabis Prevention & Information Centre. This workshop is suitable for all clinicians and for healthcare practitioners who work in a variety of settings and services where clients present with cannabis use disorders. Participants will be made familiar with the various aspects of these interventions including screening, assessment, withdrawal and treatment.

### **Breakout Three: Social determinants of drug and alcohol use**

Panel: Elizabeth Whittaker<sup>1</sup>, Ryan Courtney<sup>1</sup>, Alice Knight<sup>1</sup>  
Facilitator: Anthony Shakeshaft<sup>1</sup>

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Research suggests social factors including homelessness and socio-economic disadvantage are associated with higher levels of drug and alcohol use and greater difficulties reducing harmful use. This session addresses these social determinants via a discussion of two 'Housing First' housing programs for chronically homeless individuals, a trial addressing financial stress for low income smokers, and community-based interventions for Aboriginal people. This workshop is suitable for AOD clinicians and professionals keen to hear about new approaches to tackling social disadvantage.

## **Breakout Four: The cost effectiveness of OST and impact on criminal offending and mortality**

Panel: Natasa Gisev<sup>1</sup>, Louisa Degenhardt<sup>1</sup>, Marian Shanahan<sup>2</sup>  
Facilitator: Michael Farrell<sup>1</sup>

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This session presents findings on young offenders' transitions between criminal activity, custody and opioid substitution therapy (OST); the cost-effectiveness of providing OST immediately post-release from prison; and the impact of OST on mortality post-release from prison. This workshop is suitable for those with an interest in the criminal justice system, harm reduction and drug policy.

**POSTERS: These have been grouped by general topic area. Please note many posters cross more than one topic.**

**POSTERS: PREVENTION / YOUNG PEOPLE**

**Longitudinal associations between bullying involvement and substance use**

Erin Kelly<sup>1</sup>, Nicola Newton<sup>1</sup>, Lexine Stapinski<sup>1</sup>, Tim Slade<sup>1</sup>, Emma Barrett<sup>1</sup>, Patricia Conrod<sup>2</sup> and Maree Teesson<sup>1</sup>

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**Introduction:** Bullying is as a major issue affecting the health and wellbeing of young people worldwide. Bullying during adolescence is of particular importance, due to the significant role of peer relationships during this developmental stage. Adolescence is also the period of onset for many substance use disorders, and therefore a key time to focus preventive efforts for such disorders. While bullying has been associated with a wide range of problems, research on the association between bullying and substance use is limited. The current study aimed to examine substance use among those involved in bullying.

**Method:** This study examined data collected as part of the Climate and Prevention (CAP) study, a large school-based randomised controlled trial of a substance use prevention intervention. The current sample included the baseline (n=605) and 12-month follow-up data (n=531) for the Control group. Bullying was measured using an adapted version of the Olweus Bully Victim Questionnaire. Substance use outcomes included recent alcohol, tobacco and cannabis use, alcohol harms and cannabis harms. Regression was used to examine associations between bullying frequency at baseline (victimisation and perpetration) and substance use at 12 months, controlling for baseline substance use and gender.

**Results:** Baseline victimisation frequency was positively associated with 12-month alcohol use, alcohol harms, cannabis use, and cannabis harms, controlling for baseline substance use and gender. Baseline perpetration frequency was positively associated with all of the substance use variables examined, controlling for baseline substance use and gender. When both victimisation and perpetration were entered into the models, baseline victimisation frequency remained independently associated with 12-month alcohol use, cannabis use and cannabis harms, and baseline perpetration frequency remained independently associated with tobacco use and cannabis harms (controlling for baseline substance use and gender).

**Discussion:** Bullying victimisation and perpetration were each associated with later substance use, including a range of substances and related harms. Involvement in both bullying victimisation and perpetration was associated with greater risk of substance use. Adolescents involved in bullying victimisation and/or perpetration are at significant risk of substance use disorders, and would benefit from early intervention to reduce this risk.

**Implications of the research:** These findings have significant implications for substance use prevention. Adolescents involved in bullying victimisation and/or perpetration should be screened for substance use and offered intervention as needed. In addition, adolescents involved in bullying would benefit from substance use prevention interventions.

## Improving our understanding of high-risk young people

Alice Knight<sup>1</sup>

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**Introduction:** Most young people in Australia navigate their way through a normal adolescence and thrive in their home, school and community lives. However, a small yet significant number experience developmental challenges, or are exposed to negative environmental experiences, that can lead to heightened vulnerability and an increase in risk-taking behaviour, which can result in poor outcomes and disadvantage later in life. There is very little data to describe the commonly experienced characteristics of this group of high-risk young people.

**Aims:** To describe the characteristics of high-risk young people in regional communities in NSW.

**Method:** A cross sectional survey was developed and implemented in 3 rural communities in NSW. The survey items were organised into 9 domains: demographics; resilience; psychological distress; suicide ideation and risk; substance use; criminal activity and contact with the justice system; living situation; education, training and employment; and health and physical activity. The specific survey items were based on those with evidence for their reliability and/or validity to allow comparisons with data from other surveys. High-risk young people attending a multi-component program implemented by an NGO in 3 rural communities in NSW were invited to complete the survey by program staff.

**Results:** The analyses are yet to be conducted (but will be by the time of the Symposium). Descriptive analyses will be undertaken to identify the risk factors that are most prevalent among this sample of young people.

**Discussion& significance:** The current lack of descriptive data on the specific characteristics of high-risk young people makes it very difficult to design targeted and cost-effective intervention programs to help reduce their vulnerability to harms and risk factors. This study will provide insights into how potential prevention and early intervention programs might best be tailored to meet the specific needs of these young people.

## Young people's opinions about alcohol and other drug policy

Kari Lancaster<sup>1</sup>, Alison Ritter<sup>1</sup> & Francis Matthew-Simmons<sup>1</sup>

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**Background:** Research has focussed on young people's alcohol and drug *use*. However the investigation of young people's *opinions and ideas* about policies aimed at reducing the harms caused by alcohol and other drugs has, to date, been limited. As in all policy areas, consultation is an important part of the process of effective policy making.

**Aim:** The aim of this study was to describe and better understand young people's opinions and attitudes towards alcohol and other drug policy. This study used an online survey to seek opinions about an array of policies and programs including prevention, alcohol regulation, law enforcement, treatment, and harm reduction.

**Findings:** The opinions of 2,335 young Australians aged 16 to 25 years were analysed. Young Australians expressed strong support for treatment, and believed that treatment should be available to people according to their needs (90%). Young people were strongly supportive of harm reduction interventions, including needle and syringe programs (76%), regulated injecting facilities (68%) and availability of pill testing (83%). Young Australians strongly opposed alcohol regulation including increasing the price of alcohol (71%), reducing trading hours (69%), and raising the legal drinking age (74%). More than 60% of young people opposed the use of sniffer dogs in public places and drug testing at work or school. Young people supported cannabis legalisation (63%) and believed new psychoactive substances should be regulated, not banned (51%).

Young people's attitudes towards alcohol and drugs were found to be more predictive of opinions about policy than age, gender and consumption behaviour. Positive attitudes towards alcohol and drugs were strongly predictive of permissive opinions about drug policy.

**Implications:** The findings of this study offer new knowledge to the alcohol and other drug field, and importantly to policy makers. The findings are a significant first step towards better understanding what young people think about alcohol and other drug policy, and as such open the door to more meaningful engagement with young people to help respond successfully to alcohol and other drug issues in Australia.

## Intrauterine alcohol exposure, parental IQ and infant cognitive development: Findings from an Australian longitudinal study

Clare McCormack<sup>1</sup>, Delyse Hutchinson<sup>1</sup>, Richard Mattick<sup>1</sup>, Lucinda Burns<sup>1</sup>, Judy Wilson<sup>1</sup>, Steve Allsop<sup>2</sup>, Jake Najman<sup>3</sup>, Elizabeth Elliott<sup>4</sup>, Sue Jacobs<sup>5</sup>, Craig Olssen<sup>6</sup>, Anne Bartu<sup>7</sup>

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**Introduction:** There is evidence of detrimental effects of heavy prenatal alcohol exposure on intellectual ability in childhood. However, less is known about the effects of low to moderate exposure. Studying the isolated effect of alcohol exposure on cognitive development is challenging, due to confounding factors such as parental IQ, socio-economic status, and health. This study aims to examine the effect of low, moderate and heavy prenatal alcohol consumption on infant cognitive development, taking into account the effect of confounds.

**Methods:** Data from a sample (n=503) of families participating in a longitudinal study will be presented. Participants were recruited from three different hospital antenatal clinics in Sydney, Australia. Detailed information regarding women's alcohol use was recorded at trimester one, two and three of pregnancy. Infants were assessed in their home at one year of age by skilled researchers using the Bayley Scales of Infant Development III - the gold standard assessment tool for infant development. An estimate of maternal verbal IQ was obtained using the Test of Premorbid Functioning.

**Results:** Results of statistical analyses investigating whether alcohol consumption across low, moderate and heavy levels predicts scores on the Bayley Scales of Infant Development at age one, taking into account the effect of maternal IQ, will be presented.

**Conclusion:** A significant number of women continue to consume alcohol during pregnancy, despite public health guidelines advising abstinence. This research provides valuable information about the potential effects of this consumption, which relevant to those in the alcohol research field, public health, and antenatal health. Care is needed when sharing findings on this sensitive issue with the public. This study is unique in incorporating a measure of maternal IQ, and considering this as a factor when assessing infant cognitive development. Continued follow up of a larger sample from this population will further clarify these effects.

## **“Pure Rush”: Development of a serious educational game for adolescents on illicit drugs**

**Bill Reda<sup>1</sup>, Lexine Stapinski<sup>1</sup>, Nicola Newton<sup>1</sup>, Daniel Rodriguez<sup>1</sup>, and Maree Teesson<sup>1</sup>**

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**Introduction:** Learning is believed to be most effective when it is active, immersive, enjoyable, problem-based and provides feedback. Serious games (video games developed for non-entertainment purposes) are prime candidates to utilise these principles, and are associated with higher levels of motivation, engagement and knowledge acquisition, relative to traditional modes of learning. With one in six Australians aged 12–17 reporting illicit drug use, there exists a need for drug education that is as engaging as it is evidence-based. While serious games have already been shown to teach languages, math, geography and computer science, the few that have incorporated drug education lacked key concepts of gaming, were difficult to package into existing lessons, and were developed for overseas audiences. This study aimed to develop—and gauge the feasibility and acceptability of—an engaging evidence-based Australian online serious game for adolescents on illicit drugs.

**Method:** A literature review on existing serious drug education games was conducted (Rodriguez, Teesson, & Newton, 2014) before an initial focus group gauged the feasibility of a novel serious drug education game. A prototype created with input from game developers and the authors was presented to a second focus group, with additional revisions being made accordingly. The game is currently being evaluated to see whether it can lead to greater changes in drug content knowledge, drug-related attitudes and intentions to use, relative to a non-interactive drug education lesson.

**Results:** The literature review identified six serious games on illicit drugs. The four that were available online were intended to substitute existing drug education lessons—with all including approximately two hours of gameplay. All games were developed for overseas contexts. The initial focus group revealed desire for a shorter, points-based arcade style game where an avatar would be affected from contact with drugs. Developers and researchers met to develop a prototype based on this feedback, which was deemed feasible and acceptable by a second focus group, whose additional comments were implemented in subsequent revisions of the game.

**Discussion and Implications:** The findings of this study have important implications for school-based drug prevention. Engaging evidence-based serious games are both a feasible and acceptable vehicle for drug education delivery. They also have the potential to engage adolescents who would not be receptive to traditional drug education, and can easily and consistently be implemented and evaluated within Australian classrooms.

## Predictors of mother-child bonding postnatal: The role of antenatal bonding, maternal substance use and mental health

Larissa Rossen<sup>1</sup>, Delyse Hutchinson<sup>1</sup>, Richard P Mattick<sup>1</sup>, Lucinda Burns<sup>1</sup>, Judy Wilson<sup>1</sup>, Steve Allsop<sup>2</sup>, Jake Najman<sup>3</sup>, Elizabeth Elliott<sup>4</sup>, Sue Jacobs<sup>5</sup>, Craig Olszen<sup>6,7</sup> and Anne Bartu<sup>2</sup>

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**Issue:** Pregnancy and the early postnatal period represent a critical developmental window for the health and well-being of the growing foetus/infant. This period is likewise one of potential vulnerability and risk when both maternal well-being and foetal/infant development can be compromised. Maternal drug and alcohol use, mental health, and bonding to the developing foetus/infant, have each been identified as factors which are important during this early developmental window. Previously, the progression of these behaviours across pregnancy and through the early postnatal period has been described. This paper focuses on the prediction of post natal bonding from antenatal bonding, substance use and mental health issues. Utilisation of data from a longitudinal birth cohort to map usual patterns of maternal drug and alcohol use, mental health and bonding to the developing foetus/infant would allow for improved understanding of the progression of these factors pre and post-natally and would also identify potentially critical points for intervention.

**Approach:** This study will utilise data (n=373) from a longitudinal birth cohort study of pregnant women being assessed during the prenatal and early postnatal period. Comprehensive data was collected on: demographic information, drug and alcohol use (quantity and frequency of caffeine, alcohol, tobacco and illicit substance use), mental health (Depression, Stress and Anxiety Scale) and fetal/infant bonding security (Maternal Antenatal/Postnatal Attachment Scales). Assessments were conducted in pregnancy (Trimester 1, 2 and 3) and post-natally (8 weeks).

### Aims:

This poster aims to:

- Examine whether antenatal bonding predicts postnatal bonding, after controlling for other potential covariates.
- Investigate whether mental health and drug and alcohol use predicts maternal bonding to the fetus/infant at 8 weeks postnatal.

It is hypothesised that antenatal bonding would predict post natal bonding, i.e. higher levels of antenatal bonding would predict higher post natal bonding levels. Higher levels of maternal drug and alcohol use and depression, anxiety and stress are hypothesised to impact negatively on fetal/infant bonding (pre and post natal).

## Preventing depression in schools: a systematic review and meta-analysis

Emily Stockings<sup>1</sup>, Louisa Degenhardt<sup>1</sup>, Cathy Mihalopoulos<sup>2</sup>, Yong Yi Lee<sup>3</sup>, Jan Barendregt<sup>3</sup>, Mary Lou Chatterton<sup>2</sup>, Megan Hobbs<sup>4</sup> & Gavin Andrews<sup>4</sup>

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**Background:** Depression in children imparts significant burden and is associated with self-harm, suicide and depression in adulthood.

**Objectives:** To determine whether universal school-based interventions are effective in preventing the onset of depression in children and adolescents.

**Methods:** A systematic review of reviews was conducted in August, 2013 using the electronic databases PubMed, Medline, PSYCINFO and the Cochrane Library of Systematic Reviews. Randomised controlled trials examining the efficacy of psycho-educational depression prevention programs conducted in school settings among young people (aged 5-18) without a current mental disorder were eligible for inclusion. Data were synthesised using the MetaXL inverse variance heterogeneity model.

**Results:** A total of 96 unique trials and 45,904 participants were included in the analysis. The risk of having a depressive disorder was reduced compared to no intervention at post-test (7 studies, 1100 participants, risk difference (RD) = -0.06, 95% confidence interval (CI): -0.20 to 0.08), 6-months (8 studies, 532 participants, RD = -0.03, 95% CI: -0.09 to 0.02) and 12-months (7 studies, 1158 participants, RD = -0.01, 95% CI: -0.07 to 0.04), however this did not reach statistical significance. Meta-analyses revealed no significant reduction in depressive symptoms at post-intervention (38 studies, 8822 participants, RD = 0.00, 95% CI: 0.00 to 0.00); 6 months (25 studies, 4428 participants, RD = 0.00, 95% CI: -0.01 to 0.01) or 12-month follow-ups (17 studies, 5160 participants, RD = 0.00, 95% CI: -0.01 to 0.01).

**Conclusions:** There is some evidence that universal school-based prevention programs may prevent the onset of depression among children and adolescents in the short term, however further studies are needed to determine if this approach is cost-effective.

**Implications/target audience:** Routine implementation of universal depression prevention programs in school settings may help reduce the burden of depressive disorders through a reduction in incidence. These results are relevant to policy makers, mental health clinicians and educational representatives.

## The StraightUp study: A cluster randomised controlled trial of a combined parent and student Internet-based substance use prevention program for adolescents

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**Background:** Recent research indicates that two thirds (65%) of Australian adolescents have consumed a full serve of alcohol in the past year, and almost one fifth (18%) have consumed alcohol at levels that put them at risk of injury on a single occasion in the past year. Therefore, prevention is critical to reduce the burden of social costs, harm and development of substance use disorders. Whilst research has shown that parents can play a key role in curbing adolescent alcohol use, they are rarely included in substance use prevention programs. The *StraightUp* program will address this critical gap by evaluating a combined parent and student intervention.

**Aim:** This poster will outline the protocol of the *StraightUp* study which will determine the effectiveness of the combined *StraightUp: Parent and Student* intervention in reducing substance use problems in adolescents. This will be the first trial, internationally, to evaluate an online version of this combined approach.

**Method:** The effectiveness of the *StraightUp: Parent and Student* program will be assessed through a cluster randomised control trial (RCT) in schools across New South Wales, Australia. Schools will be randomised to one of four programs: (1) the control group, who will receive school-based health education as usual, (2) the *StraightUp: Student program* group, (3) the *StraightUp: Parent program* group, or the integrated *StraightUp: Parent and Student* program group. Students will be assessed on levels of substance knowledge, substance use and perceived parenting practices; and parents will be assessed on both general and alcohol-specific parenting practices. Assessments will occur at baseline, immediately-post, and 12, 18, 24 & 36 months after baseline.

**Implications:** The comprehensive *StraightUp* intervention targeting both parents and students has the potential to prevent substance use and related harms at significantly higher levels than the student- and parent-based programs would do if delivered alone. This will be a most significant contribution to promoting and maintaining the good health of the community and reducing the burden of disease, social costs, and disability associated with substance use disorders.

## Why do parents supply alcohol? Parenting practices, peers, and behaviour

Monika Wadolowski<sup>1</sup>, Delyse Hutchinson<sup>1</sup>, Richard P Mattick<sup>1</sup>, Raimondo Bruno<sup>2</sup>, Alexandra Aiken<sup>1</sup>, Jake Najman<sup>3</sup>, Kypros Kyri<sup>4</sup>, Tim Slade<sup>1</sup>, Nyanda McBride<sup>5</sup>.

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**Aim:** Alcohol consumption most commonly occurs in supervised family contexts during early adolescence. Parental alcohol provision has received considerable attention in public discourse, often being the subject of anecdotal discussions. Despite this, research has overlooked what factors contribute to parental provision during early adolescence. The present paper investigated prospective associations between parenting practices, peer influences, and problem behaviours in relation to early adolescent parental alcohol provision.

**Methods:** Parent-child dyads were recruited across 49 Australian secondary schools (T1 M adolescent age: 12.4, SD=0.6). A total of 1,823 parent-child dyads completed surveys at T1, and 1,729 (94.8%) also completed surveys one-year later at T2. Planned univariate and multivariate logistic regression procedures were conducted, testing T2 parental provision of a sip(s) of alcohol in relation to T1 parenting practices, peer influences, and problem behaviours.

**Results:** At T2, 26.0% of parents reported providing a sip(s) of alcohol. T2 provision was not associated with any poor T1 parenting practices. Compared to no provision, T2 provision was associated with increased levels of T1 parental alcohol consumption, and home alcohol access; and lenient alcohol-specific rules. All T1 peer influence covariates were associated with T2 provision. Adjusting for all T1 covariates, the multivariate model was significant ( $\chi^2_{22}=411.95$ ,  $p<0.001$ ). Only increased T1 home alcohol access, lenient alcohol-specific rules, and parental perception of substance-using peers were associated with T2 provision.

**Conclusion:** There was no association between parental provision and poorer parenting practices in the present data. Parental provision appeared to occur opportunistically in the present sample, through home alcohol access and parental alcohol consumption. Findings also suggested provision may represent parental responses to substance-using peers, and the inevitability of adolescent alcohol consumption. Whilst provision was associated with lenient alcohol-specific rules, it is also possible that the supervision implicit in parental provision represents parental control and conditions regarding adolescent alcohol consumption.

## Are sipping and drinking different? Parents, peers, and behaviour

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**Aim:** Existing research investigating the predictors of adolescent alcohol consumption has focused on mid- to late-adolescent samples. Longitudinal research has not investigated the prospective effects of parenting practices, peer influences or problem behaviours on early adolescent sipping and drinking as distinct consumption quantities. This paper aims to disentangle quantities of early adolescent alcohol consumption in relation to parenting practices, peer influences and problem behaviours.

**Methods:** A total of 1,823 parent-child dyads completed surveys at T1. Of these, 1,729 dyads also completed follow-up surveys at T2, resulting in a low attrition rate of 5.2%. Dyads were recruited across 49 Australian secondary schools (T1 M adolescent age: 12.4, SD=0.6). Using planned univariate and multivariate multinomial logistic regressions, T2 abstention, sipping and drinking were tested on a range of T1 parenting practices, peer influences, and problem behaviours.

**Results:** Alcohol consumption was relatively low. At T2, 25.2% of adolescents reported sipping, while only 7.8% reported drinking. Univariate analyses found that compared to abstainers, T2 sippers and drinkers were more likely to report T1 parental provision, substance-using peers, and externalizing problems. Conversely, T2 sippers and drinkers were less likely to report strict T1 parental alcohol-specific rules, monitoring and peer substance use disapproval. T2 sippers were also more likely to report increased T1 parental alcohol consumption and home alcohol access. In the multivariate model adjusting for all T1 covariates, only T1 parental provision, parental alcohol-specific rules, monitoring, substance-using peers and externalizing problems remained significant.

**Conclusion:** The present results demonstrated the prospective importance of parental provision, strict alcohol-specific rules, substance-using peers and externalizing problems in early adolescent alcohol consumption one-year later. Additional differences between sippers and drinkers were evident in relation to home alcohol access, substance-using peers, and externalizing problems. The present longitudinal analyses demonstrated that sipping is an independent adolescent alcohol quantity from abstention and drinking.

## POSTERS: ALCOHOL

### Australian teenagers' perceptions of industry compliance to the Australian Alcohol Beverages Advertising Code

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**Background:** Alcohol marketing is increasingly sophisticated and has been associated with increasing alcohol consumption amongst young people. It is vital that alcohol marketing is controlled to ensure that children and adolescents are protected from its exposure and influence. However, the effectiveness of the current industry-regulated system has been questioned, with calls from researchers and public health professionals to overhaul the current regulatory system. The current study investigates advertising compliance to the current Alcohol Beverages Advertising Code (ABAC), as perceived by 16-19 year old heavy alcohol users.

**Method:** Quantitative and qualitative in-depth interviews were completed with sixty-eight 16 to 19 year olds, recruited from Sydney, Perth, Melbourne and Bunbury, WA. Interview questions included demographics, alcohol consumption and perceptions of six recent alcohol ads presented during the interview including how the ads appealed, intentions to try and to buy advertised products.

**Results:** Participants were exposed to a wide range of alcohol advertising, in particular television advertising. Two of the six alcohol adverts presented were clearly preferred; 58% found an advert for Five Seeds apple cider appealing and 44% found a Midori advert appealing. The appeal of an advert was significantly related to intentions to try and to purchase the advertised product. Greater numbers of young people indicated that the actors in the Five Seeds and Midori adverts appeared to be less than 25 years old.

**Conclusion:** The current study demonstrates violations of the ABAC; some adverts are directly appealing to adolescents and use actors who are not clearly over the age of 25 years. There was a clear association between the appeal of an advert and intentions to try and to purchase the product. **Implications:** There is a clear need to revise the current regulatory system to better protect children and adolescents from exposure to and influence from alcohol advertising.

## Exploring the relationships between first alcohol use, mood and anxiety disorders

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**Introduction:** Anxiety, depressive and substance use disorders often first emerge during childhood and adolescence. An early age of first drinking has been linked to the development of later substance use disorders and health risk behaviours, which impact on young people current functioning and also limit their future life options. Of particular interest is the relationship between depression, anxiety and alcohol use, as these problems frequently co-occur have overlapping risk factors and interact. To date, little research has focused on how anxiety and mood disorders relate to drinking initiation and in particular, the temporal sequencing of these disorders.

**Aim:** The aim of this study is twofold; first, to explore onset of alcohol use, mood and anxiety disorders in a representative sample of young Australians, and second, to examine the bidirectional relationships between alcohol initiation, anxiety and depression. Specifically, this study will explore if pre-existing mood and/or anxiety disorders relate to a decreased age of alcohol initiation, and conversely, if an early age of onset for alcohol use is associated with a greater risk for developing anxiety and/or mood disorders.

**Method:** The 2007 National Survey of Mental Health and Wellbeing was a nationally representative household survey of 8841 Australians aged 16-85 years old. It assessed participants for the most common DSM-IV mental disorders.

**Results:** Results are pending and will report on the prevalence and temporal sequencing of mood disorders, anxiety disorders and onset of alcohol use in the Australian general population, with particular focus on those aged 16-24 years old.

**Implications:** A clear understanding of the relationship between mood or anxiety disorders and drinking initiation will help to inform prevention and early intervention efforts by highlighting important target areas and optimal timing for interventions that have the potential to prevent significant impairment later in life.

## **Beginning to binge drink: Its affect on behavioural inhibition in adolescents and young adults**

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Behavioural control is known to be diminished in those who binge drink, yet not much is known about the direct affect it has on this aspect of brain function, especially in people who are still undergoing brain development. The aim of this study is to observe the changes that occur with the onset of binge drinking in the time required to stop a response (stop-signal reaction time or SSRT) and event-related potential components, P3 and ERN amplitude, which reflect inhibitory and error processing, respectively. Additionally, we will examine whether there is a relationship between impulsivity and SSRT.

Participants aged 17-25 with no history of binge drinking will be recruited from the University of NSW campus and are assigned to one of two groups based on their future drinking expectations: Expectant abstainers or Expectant binge drinkers. The Stop-signal task (SST) is used to measure SSRT pre-onset of binge drinking at session one, and session two four months later. EEG is used in conjunction with the SST to provide ERPs. Changes in SSRT and ERPs will be examined within groups and between session times to assess any changes in behavioural control. The BIS-11 will be used to measure impulsivity at baseline which will be correlated with SSRT to assess relationship.

Data collection is currently ongoing and preliminary results will be presented at the symposium. We hypothesise that participants who commence binge drinking in the four months between testing sessions will show an increased SSRT and decreased P3 and ERN amplitude compared to their baseline. Abstainers are expected to have no change. Furthermore, we predict there will be a positive relationship between BIS-11 score and increasing SSRT.

## The consequences of commencing binge drinking behaviour on emotion perception among young adults

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Abnormalities in emotion perception are associated with excessive alcohol consumption. However, the majority of this research focuses on older alcohol dependent users and less is known about the effects of binge drinking, particularly among the still developing brains of young adults. Therefore, the aim of the current study is to examine the effect of binge drinking on emotional processing among university students via behavioural and psychophysiological measures. In this two session study, non-binge drinking participants aged 17-25 (half of whom expect to remain non-drinkers for the mid-range future, and half of whom expect to begin drinking) will be recruited and their emotional responses to film clips of different valence, as indexed by self-reports of valence and psychophysiological indices of arousal (skin conductance and EEG alpha power) will be compared at baseline and three months after beginning to binge drink. Data collection is currently in progress, and preliminary results will be presented at the symposium. We hypothesise that there will be a significant worsening of psychophysiological and emotional functioning between baseline and follow-up for those who commence binge drinking in the three month study period (exaggerated arousal levels), whereas no differences are expected for the continued non binge drinking group during this period. Thus, this study will present new knowledge on the extent and timing of psychophysiological and emotional impairments associated with the early stages of binge drinking consumption in young adults.

## Alcohol use disorders, risky alcohol consumption and adverse events among chronic non-cancer pain patients receiving opioid therapy

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**Background:** The concurrent use of opioids and alcohol carries risks, in particular over-sedation and overdose. Chronic non-cancer pain (CNCP) patients receiving opioids may be at increased risk of alcohol-related harm, yet little published research has examined patterns of alcohol consumption among this group.

**Aim:** This study aims to examine (i) the prevalence and patterns of alcohol use and use disorders among CNCP patients receiving opioid therapy, (ii) associations between alcohol use disorders (AUD) and comorbid mental health problems, and (iii) whether risky alcohol consumption predicts the experience of adverse effects.

**Methods:** The study draws on baseline data collected for the POINT study – a cohort study of 1,500 persons who have been prescribed an opioid for CNCP. Patterns of drinking (weekly, daily and 5+ drinks on a single occasion) will be examined by gender. Logistic regression models will examine (a) the mental health predictors of ICD10 AUD (specifically childhood maltreatment, generalised anxiety disorder (GAD), depression, social phobia and PTSD), and (b) the relationships between risky alcohol consumption (5+ drinks on a single occasion, on a weekly or more frequent basis) and adverse effects (Prescription Opioids Difficulties Scale (PODS) score, overdose, falls, aberrant opioid-related behaviours and suicidality). All models will control for demographics, physical health, opioid dose, benzodiazepine use, pain and social support.

**Results:** Preliminary analyses indicate 8% of participants drank daily, and 7% drank 5+ drinks on a weekly+ basis. Thirty-one percent met criteria for a lifetime AUD. Bivariate analyses indicate that lifetime AUD were significantly associated with depression ( $\chi^2 = 34.19$ ,  $p < 0.001$ , OR 2.10, 95% CI: 1.63-2.70), GAD ( $\chi^2 = 23.89$ ,  $p < 0.001$ ; OR 1.88, 95% CI: 1.46-2.42), and PTSD ( $\chi^2 = 42.43$ ,  $p < .001$ ; OR 2.53, 95% CI: 1.90-3.37).

**Conclusions:** Adverse effects relating to alcohol consumption among CNCP patients may be prevented with appropriate monitoring, education and referral for treatment.

## Performance monitoring in young heavy drinkers

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**Aims:** Difficulties in monitoring ongoing behaviour may be linked to real-life problematic drinking behaviours. Additionally, some prior research suggests female heavy drinkers in particular display greater cognitive control deficits. In this study, we examine trial-to-trial adaptations of behaviour in a computerised conflict monitoring task, relative to drinking behaviour and sex.

**Method:** 31 regular binge drinkers (16 male) and 35 non-binge drinkers (18 male) completed an Eriksen flanker task while brain electrical activity was recorded. The task involves pressing to a central target stimulus and ignoring lateral flanking stimuli which are associated with the same response as the target ('congruent' trials), or associated with the opposite response ('incongruent' trials). We analysed reaction time, error rates, and N2 and P3 amplitude of the event-related potential, indexing conflict monitoring and inhibition, respectively.

**Results:** For all measures, trial-to-trial conflict adaptation was evidenced by a differential response to the current (congruent vs. incongruent) trials dependent on the identity of the previous trial. For the proportion of errors, Heavy Drinkers showed increased conflict adaptation compared to controls, and for reaction time, Heavy Drinkers showed reduced slowing for incongruent trials. Conflict adaptation for N2 (monitoring) was larger for binge drinkers, and particularly so for females. There were no interactions involving group or sex for the P3 component.

**Conclusions:** In contrast to much previous research showing decreased conflict adaptation in disordered groups, the Heavy Drinkers showed an increased conflict adaptation effect for error rate and the performance monitoring component. It is likely that Heavy Drinkers suffer more interference for incongruent trials, and therefore stand to benefit more from previous trial incongruity, compared to Controls. The implications of this result for real-world drinking behaviours will be discussed.

## **Mothers' hospital admissions for alcohol use disorders in the 4 years following the birth of a child: a cohort study based on linked population data**

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**Background:** This study documents the rate of hospital admission for alcohol use disorders, across a 4-year period, amongst women who have given birth to a child.

**Method:** This is a cohort study using linked population data. The study population was all mothers who gave birth between 1 July 2000 and 31 December 2006 in NSW, Australia.

**Results:** There were 404,558 mothers who gave birth between 1 July 2000 and 1 December 2006 in NSW, Australia. In the 4 year follow up period after birth, there were 2,551 (6.31%) mothers who had 5008 (12.38%) hospital admissions for alcohol use disorders. In each of the 4 follow-up years the rate of first hospital admission for AUD fluctuated around 1.58/1,000 person-years (PY) (95%CI: 1.56-1.60). In contrast, there was a significant linear increase in the rate of hospital readmissions for alcohol use disorders over the 4 years after birth ( $p<0.05$ ). The readmission rate was 0.76/1,000 PY (95%CI: 0.73-0.79) in the 1<sup>st</sup> year after birth to 2.33/1,000 PY (95%CI: 2.28-2.38) in the 4th year after birth. The risk factors for the first hospital admissions were mother's non-marital status, smoking during pregnancy, living in remote areas and being a young mother (<20 years old).

Mothers who had a subsequent birth in four years after the index birth were less likely to be admitted to hospitals for AUD. And hospital readmission for AUD was associated with an increase in the mother's age. Mothers who smoked were also more likely to be readmitted to hospital for AUD. Mothers who were born in countries other than Australia were less likely to be admitted and readmitted to hospitals for AUD.

**Discussion:** The results suggest the need for an alcohol control intervention in mothers who are firstly admitted to hospital for alcohol use disorders.

## Father's hospital admissions for alcohol use disorders before and after birth: a cohort study based on linked population data

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**Background:** To date, work examining the impacts of drug use in pregnancy has focused on the maternal drug use. This study extends that work to examine the rate of father's hospital admissions for alcohol use disorders (AUD) before and after the birth of their first child.

**Method:** This study is based on linked population data of all births (the New South Wales (NSW) Perinatal Data Collection (PDC)), linked to fathers (through the Registrar of Births, Deaths and Marriages (RBDM)) and the NSW Admitted Patients Data Collection (APDC), for information on fathers hospital admissions before and after the birth of their first child. The study population includes all fathers whose partner had their first baby in NSW between 1 January 2004 and 31 December 2009 in NSW, Australia.

**Results:** There were 209,204 fathers whose first child was born between 1 January 2004 and 1 December 2009 in NSW, Australia. During the two years before pregnancy, the pregnancy and the two years after birth, 1886 of the fathers (9.02%) were admitted to hospital for an alcohol related hospital admission (3,062 admissions, 14.64%). There was a significant decrease in the rate of father's hospital admissions for AUD in the pregnancy period (rate=2.34/1,000 person-year (PY), 95%CI: 2.27-2.41) compared with both the two years before and after the pregnancy (rate=3.14/1000, 95%CI: 3.07-3.21 in the year before pregnancy and rate=3.06, 95%CI: 2.99-3.13 in the year after birth).

**Discussion:** When hospital admissions for alcohol related problems are taken as a proxy for heavy alcohol consumption, these findings suggest fathers, as with mothers, decrease their alcohol consumption during their partners' pregnancy. This suggests a positive trend, but that interventions should be put into place to support fathers to continue to decrease their consumption following the pregnancy period.

## POSTERS: CANNABIS

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

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Harms associated with alcohol and cannabis use account for a significant amount of the burden of disease worldwide. Traditionally, alcohol and cannabis use and related harms are more prevalent in males than females. However, there is emerging evidence to suggest that the epidemiology of alcohol and cannabis use is changing with females “catching up” to their male counterparts in rates of alcohol and cannabis use, and alcohol- and cannabis-related harms. If this is indeed the trend then a radical reconceptualization of prevention, early intervention and treatment is required. This project aims to systematically summarise the published literature on sex differences in a number of key indicators of alcohol and cannabis epidemiology, with a specific focus on whether these indicators have shown changes over time. At the 2013 NDARC Symposium we presented the findings on alcohol use and related harms. This poster will present the findings for cannabis use and related harms with implications for prevention and treatment.

## A very brief intervention for cannabis users in an emergency department setting (VBICED)

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Cannabis use in Australia remains considerably high (10.9%), and is most prevalent among young adults aged 18 to 29 years (21.3% reported past year use in 2010). Research has indicated that approximately 10% of those who try cannabis will become dependent on the drug. There is also a growing body of evidence of additional harms of cannabis use, including impaired cognitive functioning, injury, chronic respiratory and cardiovascular problems, and poor mental health. Cannabis users infrequently access health services in relation to their cannabis use, and when they do they have often been smoking regularly for 10 years or more. Consequently, a method of secondary intervention alerting people to longer-term problems of their cannabis use is necessary. Brief interventions (BI), defined as time-limited, patient-centred approaches focusing on changing behaviour, have evolved as a public health approach to reduce a range of health-limiting behaviours, including substance use. Despite a range of benefits seen for alcohol and tobacco, very little research has been conducted on the efficacy of BIs for cannabis use. Here we present a pilot study of a BI (5-10 minutes) delivered opportunistically to cannabis users (n=70) presenting to a hospital emergency department. The BI consists of three components: screening, assessment, and brief personalised feedback delivered by a trained researcher within the emergency department setting at Prince of Wales Hospital. Follow-up data will be collected one-month following presentation to the ED. It is hypothesised that this procedure will lead to increased motivation among participants to address their cannabis use, as well as actual reductions in cannabis use and related harms (data on first 10 participants will be presented). Establishing the efficacy of such BIs has implications for those at-risk of developing cannabis dependence, by bridging the gap between primary prevention activities and more intensive treatment for those diagnosed with cannabis dependence.

## POSTERS: OPIOIDS/INJECTING DRUG USERS

### Hepatitis C (HCV) testing and treatment among people who inject drugs (PWID)

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**Rationale of the project:** Despite efforts to improve access to antiviral therapy for Hepatitis C (HCV) infection, and hence treatment outcomes; uptake for chronic HCV infection remains low among people who inject drugs (PWID). The aim of this paper is to assist in determining the extent of knowledge PWID have regarding a HCV diagnosis, their knowledge and perceptions about available treatment and what are the barriers to treatment uptake.

**Description of the project:** The IDRS is a national annual monitoring system whose primary component involves interviewing a sentinel group of PWID in all capital cities/territories of Australia; approximately 900 people who inject drugs were interviewed in June and July 2013. This work will focus on the data collected from the participant interviews with PWID (n~900) investigating their HCV status and treatment history.

**The key findings and implications of the project:** This poster explores the knowledge and perceptions of a group of PWID who have been previously tested for HCV antibodies. The recent introduction of new direct-acting antivirals (DAAs) and the development of new combination treatment regimens; treatment outcomes are continually being improved. A greater understanding of the perceived barriers to treatment will allow targeted promotion of these treatments to improve treatment uptake by PWID.

## Characteristics of a national sample of people with chronic non-cancer pain prescribed prescription opioids

**Gabrielle Campbell<sup>1</sup>, Richard Mattick<sup>1</sup>, Raimondo Bruno<sup>1,2</sup>, Briony Larance<sup>1</sup>, Suzanne Nielsen<sup>1,3,4</sup>, Milton Cohen<sup>5</sup>, Nicholas Lintzeris<sup>3,4</sup>, Fiona Shand<sup>6</sup>, Wayne D. Hall<sup>7,8</sup>, Michael Farrell<sup>1</sup> and Louisa Degenhardt<sup>1,9,10,11</sup>**

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**Introduction and Aims:** The Pain and Opioids IN Treatment (POINT) study is an Australian-first study that aims to document the natural prescribing history of pharmaceutical opioids for chronic pain. Characteristics of the sample will be presented, in terms of demographics, pain, medication use, physical health, mental health and aberrant behaviours.

**Design and Methods:** The POINT study is a prospective cohort with 1,500 people prescribed pharmaceutical opioids for chronic non-cancer pain. Data presented are from the baseline interview on the characteristics of the sample. Comparisons will be made between the younger and older age groups.

**Results:** There were no differences in the number of chronic conditions reported, though older participants did report a higher number of other health conditions (OR 1.26, 95%CI 1.15-1.39). Younger people reported higher levels of pain (OR 1.175, 95%CI: 1.109-1.245) and a higher pain interference score (OR 1.239, 95%CI: 1.18-1.30). Younger people were also more likely to suffer from depression (OR 2.69, 95%CI 2.11-3.42), general anxiety (OR 2.23, 95%CI 1.73-2.88) and PTSD (OR 3.18, 95%CI 2.33-4.33) and were more likely to engage in aberrant behaviours (OR 1.67, 95%CI 1.47-1.89).

**Discussion and Conclusions:** The POINT study is of timely importance in the context of increased prescribing and concern of prescription opioids for chronic non-cancer pain. There are clinical differences between younger and older people prescribed pharmaceutical opioids in chronic non-cancer pain, and these need to be considered in terms of treatment, research and policy implications.

## Pharmaceutical opioid consumption in Australia, 2013

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**Background:** There has been considerable concern regarding the increasing prescription of opioids in Australia and their potential to cause harm. However, to date, existing data have only been on prescriptions that have been subsidised by the Australian government. Private prescriptions, and over the counter (OTC) opioid medications, are not included in such data, meaning that to date there has been a very incomplete picture of opioid consumption in Australia. This is particularly of concern in rural and regional areas where there appears to be increasing problems related to opioid misuse, but almost no epidemiological research on consumption patterns.

**Aims:** To provide an overview of pharmaceutical opioid consumption across Australia, and consider factors that may affect consumption levels including geographic and sociodemographic variables.

**Methods:** IMS data on sales of opioids in 2013 by specific opioids (oxycodone, morphine, codeine (prescribed and OTC), fentanyl, hydromorphone, methadone (Physeptone® tablets), buprenorphine patches, pethidine, tapentadol, tramadol), formulations and strengths were used, and mapped to ABS Statistical Local Areas (SLA). Rates for 2013 of sales of specific opioids were presented using ESRI ArcGIS. Data on the demographic characteristics of SLAs were obtained from the ABS (sex and age distribution, income, education, unemployment levels, educational attainment, physical health and levels of unskilled labour), and these will be considered in regression analyses as predictors of sale rates.

**Preliminary results:** Codeine (both prescribed and OTC) forms a considerable proportion of Australia's opioid consumption. There is considerable geographic variation in opioid consumption, with rural and regional areas having comparatively lower strong opioid (S8) consumption than larger cities, but much higher levels of S4 and OTC codeine consumption.

**Implications:** These will be the first data on the full extent of pharmaceutical opioid consumption in Australia.

## The National Opioid Medications Abuse Deterrence (NOMAD) study: Monitoring the impact of the Reformulated Oxycontin® in Australia

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**Background:** There is increasing concern in a number about pharmaceutical opioid use and harms, driven by increases in injection, iatrogenic dependence and overdose. There are growing efforts by pharmaceutical companies to develop formulations that are less prone to hazardous use, dependence and diversion. In Australia, a new formulation of OxyContin® tablets was introduced onto the market on April 1<sup>st</sup> 2014 and replaced the existing controlled-release formulation. This study is monitoring changes in misuse and diversion of OxyContin®.

**Methods:** There are several components of this work: 1) Routine data sources (sales, prescriptions, overdose deaths); 2) Analysis of data from the Illicit Drug Reporting System (IDRS)), and 3) A prospective cohort of people who regularly misuse or tamper with pharmaceutical opioids. A cohort of 600 people who use pharmaceutical opioids monthly or more frequently, and who report currently injecting, snorting, chewing or smoking pharmaceutical opioids (n=300 Sydney, n=150 in Hobart, and n=150 in Adelaide) was recruited and interviewed prior to the introduction of the new formulation. Recruitment was through multiple methods, interviews were conducted in person with trained clinical interviewers.

**Results:** Baseline findings from the cohort component will be presented.

**Conclusions:** These are the most detailed data on patterns of opioid misuse and their attractiveness for tampering ever collected in Australia.

## Opioid substitution therapy utilisation among opioid-dependent men and women: A population-based comparative study

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**Background:** Few population-based studies have examined differences in opioid substitution therapy (OST) treatment utilisation between men and women.

**Aim:** Using a population of opioid-dependent people in New South Wales (NSW), Australia, the aim of this study was to compare first-episode and long-term OST treatment utilisation profiles between men and women, differentiating between treatment initiation in the community and in custody.

**Methods:** Retrospective data linkage study using records of new OST entrants (2001-2010), and custody episodes (2000-2012). First OST treatment episode and overall treatment utilisation characteristics were compared between men and women initiating treatment in the community or in custody. Treatment retention was evaluated at three, six, nine and 12 months after first commencing OST, and overall, as the median proportion of follow-up time spent in treatment.

**Results:** A total of 15,600 new OST entrants were identified in the cohort - 10,930 were men (70.1%) and 4,670 women (29.9%); 12,584 (80.7%) initiated treatment in the community and 3,016 (19.3%) in custody. More men initiated OST in custody (24.0% vs. 8.3%,  $p<0.001$ ) and only received OST in custody (57.5% vs. 41.8%,  $p<0.001$ ). Women were retained longer in their first OST treatment episode at all four time points in both treatment settings, and in treatment overall (community: 46.6% vs. 39.1%,  $p<0.001$  and custody: 41.3% vs. 30.8%,  $p<0.001$ ).

**Conclusions:** There are a number of key differences in OST treatment utilisation profiles between men and women. Whereas men commonly initiate, and only receive, OST in custody, treatment retention is higher among women, independent of the setting in which treatment is initiated.

## Quantifying polypharmacy in the Pain and Opioids IN Treatment (POINT) study: Substances with sedative properties

**Bianca Hoban<sup>1</sup>, Natasha Gisev<sup>1</sup>, Briony Larance<sup>1</sup>, Suzanne Nielsen<sup>2</sup> and Louisa Degenhardt PhD<sup>1,3</sup>**

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**Background:** The Pain and opioids in treatment (POINT) study has found that a large proportion of participants are currently taking more than one medications with sedative effects including: antidepressants (55%), benzodiazepines (28%) and antipsychotics (9.2%) and has prompted the need to quantify polypharmacy in the cohort and to assess associations.

**Aims:** The aims of this study are to compare existing sedative loading indices and assess which is most appropriate for the POINT cohort; present the classification of medications according to the chosen index; assess the doses of medications used in the cohort and; describe how the index will be used to assess sedation in the POINT study.

**Method:** Literature searches revealed that there are four sedative indices. Medications used by the POINT cohort according to the one week medication diary were classified using the *Anatomical Therapeutic Chemical* by WHO and the doses of medications were assessed using the Australian Medical handbook. An assessment of sub-therapeutic doses and doses above recommended daily dosages for all indications was conducted using the weekly mean dose from the medication diary.

**Results/Progress:** The indices rate the sedative effects of medications based on the action, side effects and dose of the medication. A number of issues were observed when attempting to apply the indices to the POINT cohort. New medications needed to be classified based on the original indices and this was completed by a consensus between two pharmacists.

**Conclusion:** The adaptation of the sedative index for the POINT cohort has highlighted many issues regarding standardised dosing of medications. Further discussion and research is required to assess the inclusion of dose in the sedative index. The classification of sedative medications is now complete and the preliminary analysis of associations with POINT study outcomes can now be conducted excluding dose.

## Transitions from heroin use to dependence and treatment seeking among an opioid-dependent sample

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**Introduction:** Transition pathways from onset of use to substance dependence have been well-documented for alcohol and cannabis, typically involving large population-based cohorts or surveys. However, less is known about these transitions for heroin users, as population-based cohorts typically have few people meeting criteria for opioid dependence. Although many cohorts of opioid dependent people exist, to our knowledge there are few published data on the transitions across levels of use and dependence.

**Aims:** This study will examine transitions from onset of heroin use to dependence and treatment seeking among an opioid-dependent sample in Sydney, Australia. Socio-demographic and clinical characteristics associated with speed of transition and earlier treatment seeking will be assessed.

**Methods:** A retrospective cohort of opioid-dependent participants (n=1487) underwent a face-to-face structured psychiatric interview. Diagnostic sections were based on the Semi-Structured Assessment of the Genetics of Alcoholism-Australia (SSAGA-OZ). Interviews covered substance use and dependence, psychiatric history, suicidality, childhood maltreatment, adult victimisation, and criminal history. Linear regression models will be used to examine predictors of faster transition from heroin use to dependence, in addition to factors associated with earlier treatment seeking behaviours.

**Results:** Final results for this study are pending.

**Conclusions:** Findings from this study could have important clinical implications, specifically with regard to design of early, targeted interventions to prevent transition to dependence.

## Pharmaceutical opioid use and pain among people who inject drugs: Baseline findings from a prospective cohort study

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**Background and aims:** Problematic pharmaceutical opioid (PO) use is associated with significant public health burden. This study examines the initiation and patterns of PO use among people who inject drugs (PWID) regularly, and associations with pain, physical and mental health.

**Methods:** This study draws on data collected for a prospective cohort study of PWID underway in New South Wales. Interviews are conducted at baseline and follow-up at 3-6 months. This study analyses baseline data for the first 112 cohort participants. The questionnaire covers physical health, pain, health service utilisation, psychological functioning, use of opioids and other drugs, and treatment.

**Results:** The majority of PWID had recently (past 6 months) used a PO (85%), and 80% reported weekly+ use of PO. Over two-thirds of PWID (71%) had been recently prescribed an opioid medication, 51% reported recent injection of a PO ('PO injectors'), and 37% reported weekly+ injection. Five participants had initiated use of PO prior to heroin use. PO injectors did not differ from other PWID in age, gender, pain, physical or mental health. PWID who reported current pain ( $n=43$ ), were more likely to report ever having chronic back/neck problems (77% v 22%, Fishers Exact Test (FET)  $p=0.000$ ) and depression (65% v 40%, FET  $p=0.012$ ), and a larger mean number of past 12 month physical health problems (2.6 v 1.2;  $t(110)=-4.58$ ,  $p<0.001$ ).

**Discussion and conclusions:** Preliminary findings indicate few differences in the demographic and clinical profiles of PO users versus other PWID. PWID experience many physical and mental health problems, and those with acute and/or chronic pain present clinical challenges with regards to medication selection and adherence monitoring.

## Long-term patterns of heroin use and mental health: 11-year follow-up of the Australian Treatment Outcome Study (ATOS)

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**Introduction and Aims:** Heroin dependence is a chronic and in many cases, lifelong condition, associated with comorbid mental health disorders. Using data collected as part of the Australian Treatment Outcome Study, the present paper aims to examine the major findings pertaining to heroin use, comorbid disorders and treatment patterns over 11 years

**Design and Methods:** 615 people with heroin dependence were recruited to the study in 2001-2002, and re-interviewed at 3-, 12-, 24-, 36-months and 11-years post-baseline (follow-up rates of 89%, 81%, 76%, 70% and 70% respectively). Heroin dependence was assessed at each time point using the Composite International Diagnostic Interview version 2.1 (CIDI), and heroin treatment since the last interview was obtained using the timeline follow-back method.

**Results:** At 11-years, preliminary analyses indicate that 14.4% of the cohort endorsed criteria for heroin dependence and 46.7% were in treatment for opiate dependence. One fifth of the cohort (20%) met criteria for current depression and 41% for current post-traumatic stress disorder (PTSD). The overwhelming majority of the cohort (98%) had experienced a period of abstinence in the follow-up period, with a median period of consecutive abstinence of 60 months (5 years). Overall, physical and mental health was poorer than population norms. Just over 10% of the cohort was deceased.

**Discussion and Conclusions:** Despite significant reductions in heroin use and dependence over the 11-year follow-up period, there were continued high rates of other comorbidities. Further, although a significant proportion of the cohort achieved continual abstinence for substantial portions of the follow-up period, findings highlight the importance for stability in treatment.

## HIV prevention programs in prison: A global systematic review of implementation

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**Background:** HIV prevalence is higher in prison populations than in the surrounding community as PWIDs are vastly over-represented. Globally PWIDs account for more than 30% of prisoners, but less than 4% of the general population in virtually all countries. HIV prevention programs are common in community settings. Prisons have characteristics which can facilitate HIV transmission; risk behaviour is common and prevention efforts lag behind community efforts. Yet a global understanding of the HIV situation in prison is lacking. The aim was to systematically review HIV prevention programs in the world's prisons.

**Methods:** Data came from a multilingual desk review of peer-reviewed (Medline, EMBASE and Web of Science databases) and grey literature from 2008 to mid-2013. UN colleagues in country were surveyed on the availability of 15 HIV prevention programs in prison.

**Results:** Over 13,000 documents were reviewed for data on prison based HIV prevention programs in 196 countries. Under one third of countries provided any HIV prevention programs. Common programs were Voluntary Counselling and Testing in 65 countries; Information Education and Communication (53); HIV treatment, care and support (43); prevention and treatment of STIs (35); opiate substitution treatment (36); condoms (25) and protection from occupational hazards (23). Rarely implemented programs were PMTCT (14 countries); needle and syringe programs (12); protection from medical or dental transmission (12); Post Exposure Prophylaxis (8); protection from sexual violence transmission (6) and Protection from transmission through skin penetration (3).

**Conclusion:** The prison setting should be a strategic location to prevent HIV transmission yet the availability of HIV prevention programs was severely limited. Less than one third of all countries provided voluntary counselling and testing for HIV. Few countries provided life-saving AIDS treatment to inmates. Just a few countries provided condoms, OST or NSP which are well documented to prevent HIV transmission. Unless efforts to prevent HIV transmission in prison are increased, responses in the community will be undermined. These findings suggest that HIV prevention in prisons may have additional benefits of preventing HIV in the general community, given that 30 million people pass through prisons each year.

## Sleep quality among people living with chronic non-cancer pain: Findings from the Pain and Opioids IN Treatment (POINT) cohort

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**Background:** Sleep is an important facet of general health and well-being. An association between sleep disturbances and chronic health conditions has been well documented. However, the literature surrounding sleep quality in patients with chronic pain conditions is limited. Sleep problems may have significant impacts on this group and negatively affect quality of life.

**Aims:** To describe sleep quality characteristics amongst the POINT cohort, and examine the relationship between sleep and measures of pain, physical and mental health, medication use as well as substance use.

**Method:** The POINT study is a prospective cohort study, where 1,500 persons who have been prescribed pharmaceutical opioids for chronic non-cancer pain will be followed over two years. The data collected through interviews and self-complete surveys include; chronic pain types, treatments, physical and mental health, social support and substance use. Sleep patterns were measured using the Medical Outcomes Study (MOS) sleep scale and the Sleep Problems Index (SLP-9). Regression models will be developed to assess predictors of SLP-9 scores as well as respiratory function affected sleep within this cohort.

**Results:** Preliminary results from the baseline data are currently being analysed. The self-reported average hours of sleep per night as rated by the cohort (n=817) was 6.2 hours with 26.2% (n=1054) of the cohort receiving optimal sleep (seven to eight hours). Average Sleep Problems Index (SLP-9) scores were 47.06 (n=1086). Further results are pending completion of data collection.

**Conclusion:** Further research into better understanding sleep problems associated with chronic non-cancer pain can help guide pain management practice allowing provision of improved care, as well as enhancing quality of life outcomes for chronic pain patients.

## Pharmaceutical Opioid Dependence: Baseline characteristics from a cohort of treatment entrants

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**Introduction and Aims:** Little is known about the treatment that Pharmaceutical Opioid Dependent (POD) people seek, or the outcomes of treatment. This study aims to establish a cohort of POD people in treatment to gain a better understanding of the longer-term outcomes of POD.

**Design and Methods:** This prospective cohort study will follow up POD people, conducting telephone interviews at baseline, 3, 12 and 24 months. The questionnaire covers physical health, pain, health service utilisation, psychological functioning, pharmaceutical and illicit drug use and treatment experiences.

**Results:** One hundred and sixty-six participants were referred to the study, with 43% being from regional and rural NSW. One hundred and two participants have completed the baseline interview, with data collection ongoing. Around half (52%) were female. Most (67%) started using opioids for pain, and 28% reported that they continued to use opioids for pain. Most (88%) reported a lifetime pain condition, of mean length of 16yrs (SD10yrs), with 75% reporting a problematic pain condition in the past 12 months. Most reported past year depression (64%) or anxiety (54%). Oxycodone was the primary drug of concern in 51% of cases, followed by codeine (28%). Just over half (57%) reported a heroin use history and 18% reported past year heroin use. Most were currently in Opioid Substitution Treatment with either buprenorphine (+/- naloxone) (54%) or methadone (37%).

**Discussion and Conclusions:** This is the first study in Australia to prospectively follow up a cohort in-treatment POD people. High rates of pain, mental-health co-morbidity are present in this opioid dependent treatment cohort, and may add to the complexity of providing effective treatment. Examining the baseline characteristics of this treatment sample will be important in informing treatment providers about the treatment needs of this group.

## **Health related issues among people who inject drugs in Australia: Findings from the 2013 Illicit Drug Reporting System (IDRS)**

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**Introduction and Aims:** The Illicit Drug Reporting System (IDRS) monitors the price, purity and availability and use of illicit drugs annually in Australia. The IDRS focuses mainly on: heroin and other opioids, methamphetamines, cocaine and cannabis. The IDRS also looks at other issues related to drug use including injection-related problems and mental health. This presentation provides a closer look at health-related issues among people who inject drugs interviewed in the 2013 IDRS.

**Design and Methods:** The IDRS involves the collection and analysis of three data sources: (1) interviews with people who inject drugs (IDRS), (2) interviews with experts who work with drug users such as treatment personnel and (3) existing databases on drug-related issues such as customs and overdose data.

**Results:** Nationally, 887 people who inject drugs were interviewed for the IDRS in 2013. Around one in ten people who injected drugs reported lending a needle or using a needle after somebody else. Around one-quarter reported sharing injecting equipment (not including needles), forty percent re-used their own needle and fifty-six percent re-used injecting equipment. Over half reported an injection-related issue in the last month, mainly scarring/bruising and difficulty injecting. Self-reported mental health problems in the last six months were reported by forty-four percent of the national sample. The most common mental health problem reported was depression followed by anxiety.

**Discussion and Conclusions:** Greater understanding of the health-related issues among people who inject drugs regularly is required to better inform policy decisions and treatment delivery.

## Multiply disadvantaged: Issues faced by homeless injecting drug consumers in Australia

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**Background:** Homelessness status is strongly correlated with higher rates of substance use and mental health disorders. Few studies, however, examine the complex relationship between housing status and substance use in people who inject drugs (PWID), particularly exploring specificities in physical and mental health and service utilisation. This study provides an extension to previous research by comparing the physical and mental health status and service utilisation rates between PWID who are homeless and PWID in stable housing.

**Methods:** A cross-sectional sample of 923 PWID were recruited for the 2012 Illicit Drug Reporting System (IDRS). Multivariate models were generated addressing associations between homelessness and the domains of demographics; substance use; and health status, service utilisation and criminal justice system contact, with significant correlates entered into a final multivariate model.

**Results:** Almost one-quarter (23%) reported that they were homeless. Homeless PWID were significantly more likely to be unemployed, inject in public and report schizophrenia in the past six months. Poorer mental health and higher rates of imprisonment were also meaningful trends.

**Conclusions:** Findings highlight the challenge of mental health for homeless PWID. Our results demonstrate that further research that evaluates outcomes of housing programs accommodating PWID, particularly those targeted to people with comorbid mental health disorders, is warranted. Results also emphasise the need to better utilise integrated models of outreach care that cater to co-managing housing and mental health needs.

## POSTERS: TREATMENT & INTERVENTIONS

### **Integrating the delivery of drug and alcohol treatment with mental health treatment: evaluating an innovative intervention designed by clinical services**

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Co-occurring mental health and substance use problems are common and have a marked impact on behaviour and social functioning. Rates of suicide, hospitalisation and criminal behaviour are higher than for single disorders. Better outcomes result from integrated treatments than from sequential or parallel treatments, but integration of treatments is challenging for traditionally separate services.

In Coffs Harbour, NSW, clinicians from an outpatient drug & alcohol service and a residential mental health rehabilitation unit instigated a collaborative project to explore the feasibility of integrating substance use treatment into the rehabilitation unit. A steering group of internal and external stakeholders was formed, leading to the development of a PhD proposal from a clinician embedded in the Coffs Harbour services, to be supervised and supported by NDARC.

The PhD program aims to refine, implement and evaluate an integrated model of care in collaboration with clinicians, managers and advisors in two rural residential mental health rehabilitation units: one in Coffs Harbour where the model is being developed, and a second in Orange or Port Macquarie. A stepped wedge evaluation design will be used: if similar impacts are evident on the same outcome measures when the same intervention is implemented in two different locations at two different times, then there is reasonable evidence of an intervention effect. If the model of care improves outcomes for clients and is acceptable to staff and clients, it provides a model for these and similar services.

This research represents an innovative approach to improving patient outcomes for two key reasons. First, it aims to simultaneously treat co-occurring substance use and mental health disorders, rather than the traditional model of treating them separately. Second, the development of this approach is driven by clinicians, meaning it is feasible and has strong support from both drug and alcohol and mental health sectors.

## Community-level interventions to improve the treatment of chronic pain and prescription of pharmaceutical opioids in general practice

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**Issues:** Use of prescription opioids for pain has grown rapidly in Australia, and increases in hospitalisations and treatment episodes have recently been observed. Furthermore, little research has evaluated the effectiveness of strategies to assist general practitioners (GPs) to manage chronic pain patients on prescription opioids, particularly high-risk patients.

**Approach:** Two rural NSW communities will be randomly selected. All GPs in Town 1 will receive a mailed intervention, including (a) tailored feedback regarding levels of prescribing, benefits and risks of opioids, and local resources for patient referral/support, and (b) links to a website with additional resources, including targeted patient information and a brief treatment agreement. GPs in Town 2 will receive (a) and (b), with the addition of (c) a formal education/networking session.

**Key Findings:** Initial feedback from the project's advisory committee indicates long-term opioid therapy is a concern. Lengthy interventions utilising multiple assessment/review tools are not likely to be implemented, with brief, targeted interventions preferred. Outcome measures should include indicators of treatment quality, not just prescribing rates.

**Implications:** Community-level interventions minimise contamination (all GPs in the same community will receive one of the interventions) and don't require GPs to implement patient consent and random allocation procedures, which typically results in biased samples.

**Conclusion:** Current treatment guidelines recommend GPs establish a time-limited trial period of prescription opioids, although there have been no previous demonstration or evaluation trials of this approach. This program will provide important cost-effectiveness data for different approaches.

## Exploring the economic costs to family members affected by drug use: the value of discrete choice experiments

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**Background:** Drug use can lead to significant financial, psychological, physical health and social consequences for family members. Despite this, previous economic assessments of drug use interventions have not examined the costs and benefits of treatment on family members affected by the drug use of a relative. This is in part because of a lack of available measures. Discrete choice experiments (DCEs) offer a way to quantify the economic impact on family members of treatment for the drug user. Key in the development of a relevant DCE survey tool is acquiring a thorough understanding of the context and relevant characteristics.

**Method:** This paper outlines the process undertaken to develop a DCE to quantify the economic impact of drug treatment on family members. Designing a DCE requires consideration of the choice context, composition of the choice sets and the framing of the choice questions. In the current study, this was achieved following a review of the literature, consultation with experts in the field of drug and alcohol family support, and in-depth qualitative focus groups with family members affected by drug use.

**Findings/Implications:** Well-designed DCEs are a valuable economic tool, but they have rarely been used in drug and alcohol research. It is hoped that by outlining the process of development, DCEs may be more widely implemented. The results of the study may serve as an initial step in addressing the lack of health economic data for family members affected by the drug use of a relative.

## POSTERS: MENTAL HEALTH

### Examining the direction of the longitudinal relationship between problematic substance use and depression

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**Background and aims:** Although the comorbidity between problematic substance use and depression is well-established, the way that these two conditions interact and impact on each other over time is not well-understood. Namely, it is unclear whether substance use predicts or is predicted by depression, or whether the relationship between these two conditions is bi-directional in nature. This paper will examine the direction of the longitudinal association between problematic substance use and depression, in a sample of Australian heroin users.

**Method:** The Australian Treatment Outcome Study (ATOS) cohort includes 615 heroin users recruited between February 2001 and August 2002, and subsequently followed up at 3-months, 12-months, 24-months, 36-months, and 11-years post-baseline. Cross-lagged panel analyses within the framework of Structural Equation Modelling will be used to examine the direction of the relationship between problematic substance use and depression use across the different time-points.

**Results:** Pending.

**Conclusions:** The findings of this study will allow for a better understanding of the influence that problematic substance use and depression have on one another, which has important implications for the treatment of these disorders.

## Correlates of depressive disorders with an onset post-opioid initiation among chronic non-cancer pain patients

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**Background:** One in five Australians live with chronic non-cancer pain (CNCP), and with an ageing population the prevalence is expected to grow. The number of opioid prescriptions to treat CNCP has increased in recent years, despite little being known about the long-term adverse effects. Although comorbidity of CNCP and depressive disorders is well established in the literature the contribution opioids make to this relationship is not well-understood.

**Aims:** To examine the prevalence and correlates of affective disorders with an onset after onset of pain and after initiating opioid medications, respectively, in individuals with no previous history of depressive disorders.

**Method:** This study will utilise data collected on the POINT (Pain and Opioids in Treatment) study; a national prospective cohort which aims to follow 1500 chronic pain patients who have been prescribed pharmaceutical opioids. The analyses draw on data from baseline interviews, self-complete surveys and medication diaries which examined demographic characteristics, physical functioning, pain history, mental health, social support, prescription drug use and lifetime substance use.

**Results:** The prevalence of depressive disorders in this sample was high with 61.8% experiencing depression in their lifetime. Characteristic differences and correlates of developing affective disorders will be presented.

**Implications:** The findings from this study have important clinical implications in the management of pain and co-occurring mental illness, specifically the need to be alert to the post-pain onset of affective disorders, especially among younger males, with severe pain on high doses of opioids.

## The prevalence and correlates of Substance Use Disorders comorbid with Mood and Anxiety Disorders: A national perspective

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**Background:** This study will report the most recent Australian data on the 12-month prevalence of SUDs comorbid with mood and anxiety disorders. For the first time, differences in demographic, physical health, disability, suicidality, and social wellbeing correlates will be investigated between individuals with a i) pure SUD, ii) SUD and mood disorder *or* anxiety disorder, iii) SUD and mood disorder *and* anxiety disorder.

**Methods:** The 2007 NSMHWB was a nationally representative household survey of 8,841 Australian adults aged between 16 and 85 years that assessed participants for symptoms of the most prevalent DSM-IV mental health disorders.

**Results:** Among those with a 12-month SUD, over 20% had a mood disorder, 31% had an anxiety disorder, and 16% had both a mood and anxiety disorder in the same year. Compared to those with a pure SUD, those with a SUD and mood *or* anxiety disorder were 3 times more likely to have at least one of six physical health conditions and were over 4 times more likely to have had suicidal thoughts in the previous 12-months. Individuals with all three classes of disorder were more likely to have been homeless (OR 5.7), been in prison (OR 7.6), and received a government allowance (OR 3.0). They were also over 10 times more likely to have experienced disability and 22 times more likely to have had suicidal thoughts that year.

**Conclusion:** These results are unique in their assessment of the level of disability, debilitation, and suicidality experienced by individuals with SUDs comorbid with mood and anxiety disorders. The development and provision of interventions targeting comorbidity in substance users is especially urgent in individuals with increased classes of comorbid mental health disorders.

## Mild traumatic brain injuries and posttraumatic stress symptoms: A systematic review

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Defence personnel have reported returning from deployment with physical and/or psychiatric symptoms. Of particular concern is the 'signature injury' for the recent wars in Iraq and Afghanistan; that being mild traumatic brain injury (mTBI) and how this may relate to the onset or maintenance of posttraumatic stress symptoms (PTSS). At present, it is unclear if standard treatments for PTSS are suitable for those with mTBI. Preliminary searches have revealed that there has been limited neuroimaging research reporting the impact of mTBI on PTSS. It is also of interest as to how mTBI may relate to the development or maintenance of substance misuse problems. Whilst the focus in this review is the impact of mTBI on PTSS, attention will also be paid to those that also review substance misuse due to the frequent comorbid presentation.

This review aims to provide greater insight into the impact of mTBIs among Defence personnel. Specifically, we will identify the relationship between mTBI, PTSS and/or substance misuse through the use of functional magnetic resonance imaging (fMRI) or diffusion tensor imaging (DTI) and report the neurological, neuropsychological and psychological factors commonly seen, all of which are important for determining appropriate treatment. The authors have begun to systematically review publications in PubMed, Embass, Web of Science, PsycInfo and will also review the references of relevant publications. Search terms include those based on: posttraumatic stress and traumatic brain injury and articles will be limited to those that used fMRI and/or DTI.

## POSTERS: INDIGENOUS

### The effectiveness of the Community Reinforcement Approach at reducing alcohol-related harms among Aboriginal and non-Aboriginal Australians

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**Introduction and Aims:** The Community Reinforcement Approach (CRA) is an evidence-based cognitive-behavioural intervention for problem drinkers. CRA has been tailored for Aboriginal Australians through focus groups with health care providers and Aboriginal people. However, this adapted CRA program has not yet been implemented or evaluated. This study aims to 1) implement the CRA program with Aboriginal and non-Aboriginal Australians; and 2) measure the effectiveness of the CRA program by reducing substance use and related harms and increasing social and emotional wellbeing.

**Design and Methods:** Participants of the CRA program were recruited through a drug and alcohol treatment agency in rural New South Wales. Data were collected through interviews at baseline (pre-intervention), 4 weeks and 3 months after CRA treatment started. Measures include demographics, alcohol misuse (Alcohol, Smoking and Substance Involvement Screening Test), psychological distress (Kessler-5) and empowerment (Growth and Empowerment Measure). The effectiveness of CRA was analysed using a pre- and post-program delivery demonstration study design.

**Results:** Overall, 55 participants completed an interview prior to the CRA program. Of these, 58% were male and 44% identified as Aboriginal. Thirty-two participants completed the 4 week follow-up and 31 participants completed the 3 month follow-up interview. Mean alcohol, cannabis and stimulant misuse scores were lower 4 weeks after CRA started ( $t=3.25$ ,  $p<.005$ ;  $t=3.10$ ,  $p<.005$ ;  $t=2.16$ ,  $p=.04$  respectively). Stimulant use and harm scores were significantly reduced 3 months after CRA started compared to baseline scores ( $t=2.67$ ,  $p=.01$ ). Psychological distress and empowerment scores were not reduced post-intervention.

**Conclusions:** Pre- and post-program analyses on the effectiveness of CRA have demonstrated support for the CRA program in reducing substance use and related harms. This finding has implications for public health treatment initiatives and future research pertaining to alcohol use and related harms for Aboriginal and Non-Aboriginal Australians.

## **A collaborative community led research partnership that aims to ‘Break the Cycle’ to reduce alcohol and drug harm in rural NSW Aboriginal communities: A summary of the research to date**

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“Bourke tops list: more dangerous than any country in the world [1].” The now infamous *Sydney Morning Herald* headline was widely publicised after the article was published in 2013. Despite the questionable claim, it highlighted one salient truth: the often ‘forgotten’ issue of rural drug and alcohol abuse and its relationship to crime and poverty.

From 2014 onwards, NDARC has been provided with the unique opportunity of being invited by the Bourke and Brewarrina Aboriginal communities to form a collaborative research partnership to investigate drug and alcohol issues at the local level. The overarching aim of this partnership promises to ensure that the communities are the drivers of appropriate interventions that ultimately contribute to improved health outcomes.

This research will be conducted in two phases. Phase one will include a rigorous mixed methods evaluation to quantify the effectiveness of the locally designed drug and alcohol programs implemented from 2011-2014. Routinely collected data will be collected and analysed to quantify the effectiveness of the programs and focus groups and interviews will be held to understand the process by which successful programs were developed and implemented. Two report cards will be compiled, with the final evaluation due to the federal government in 2015. The second phase will overlap Phase 1, and will consist of the evaluation team working closely with the communities to further develop, tailor and evaluate their community programs and a follow-up report will be completed in 2017.

The implications of this research will be wide-ranging and relevant to policy makers, researchers and practitioners, but most importantly, to people living Bourke and Brewarrina. In addition to reducing harms of alcohol and drugs, this research will strive to build the capacity of the communities to sustain improvements over time and strengthen evidence for Aboriginal community-researcher partnerships across Australia.

[1] Olding, R. & Ralston N. (2013, 2 February). Bourke tops list: more dangerous than any country in the world. *Sydney Morning Herald*, retrieved from <http://www.smh.com.au/nsw/bourke-tops-list-more-dangerous-than-any-country-in-the-world-20130201-2dq3y.html>

## **Community development as an approach to ‘Close the Gap’ between Indigenous and non-Indigenous Australians: a systematic literature review**

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**Background:** Community development is defined as a bottom-up approach in which community members identify their own problems and solutions to these problems. Communities are empowered to take control over their own development.

**Aims:** The review aimed to assess the extent of community participation in evaluated community development programs, critically appraise the methodology used in evaluation, describe outcomes of the programs and to align program aims with the seven Building Blocks of the Closing the Gap policy of the Council Of Australian Governments (COAG; early childhood, schooling, health, economic participation, safe environment, healthy housing and leadership & governance).

**Methods:** Peer-reviewed and grey literature was systematically searched to identify publications describing evaluations of community development projects in Aboriginal and Torres Strait Islander communities between 1990 and 2012. Thirty-two evaluations were identified. Extent of community participation and quality of evaluation methods were assessed using standardized tools. Aims of the community development projects were aligned with the seven building blocks of COAG’s Closing the Gap policy.

**Results:** Community participation was generally high. 20 evaluations used qualitative methods, 10 used mixed methods and 2 used quantitative methods. The quality of methods used was found to be poor or hard to assess due to lack of transparency. Positive outcomes were found in all project, including improved relationships, self-esteem and empowerment and reductions in injuries and substance use. 22 projects addressed multiple building blocks, with the majority addressing health (n=19) and economic participation (n=19). Additionally, projects addressed empowerment (n=20) and cultural identity (n=12). These were identified as core issues and more important than any of the building blocks.

**Conclusions:** This review highlights that rigorous research methods combined with high levels of community participation are needed to improve evidence-base of Indigenous community development. Including empowerment and cultural identity in the Closing the Gap policy might improve the appropriateness of this policy.

## POSTERS: ONLINE MARKETS

### Monitoring Dark Web Marketplaces – Beyond the Silk Road

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**Issue:** The closure of the Silk Road in October 2013 led to much discussion online of alternate dark web marketplaces on which to trade illicit substances. In the absence of any one marketplace emerging to take its place, and the closure of many alternative online markets due to fraud or security vulnerabilities, multiple marketplaces are now regularly monitored.

**Approach:** Dark web marketplaces were first identified and monitored weekly for changes in size and the availability of substances being sold. Details on retailer numbers, the substances for sale, as well as the countries of origin and shipping destinations for these substances, were collected and analysed over time. The data from twelve different marketplaces of varying sizes and lifetimes are presented.

**Key Findings:** Marketplaces varied in the proportion of Australian domestic retailers, as well as international retailers willing to ship to Australia. An upward trend over the monitoring period was observed among both Australian and international retailer categories. Australian retailers on the Silk Road 2.0 in particular have increased markedly. The specific substances available across marketplaces varied less, with cannabis, MDMA and pharmaceutical drugs most commonly sold, with slight variations in rank. Some marketplaces had a slightly higher availability of new psychoactive substances, but largely the substances for sale mirrored street availability identified in other Australian and international monitoring systems.

**Implications:** The increasing proportion of Australian retailers operating on the Silk Road 2.0 requires ongoing monitoring. Despite data from the Ecstasy and related Drugs Reporting System suggesting that this group of consumers prefer to purchase their drugs from more traditional sources (e.g. through friends and known dealers), dark web marketplaces have the potential to influence the price, purity and availability of drugs in traditional street marketplaces should their reach broaden out. Given the findings from this research, dark web marketplaces appear likely to continue operating.