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issuing **forth**

Routine Outcome Monitoring in Alcohol Abuse Treatment Services

contents

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Over the past few years the NDARC website has become a useful tool for many in the alcohol and other drug field to access information on a range of topics. With so many projects being conducted across the Centre it has become a Herculean task ensuring that the information contained within the site is up-to-date and accurate. Later this year the site will undergo a major reconstruction to bring it into line (in terms of design) with other UNSW faculties. This will enable us to redesign the structure of the site and creates some wonderful new opportunities in terms of information dissemination. Stay tuned for further developments!

One of NDARC's key priorities is to ensure that we disseminate the findings of our research as widely as possible in a timely manner. Although the centre is well known for it's high media profile there are limits to the quality of the information provided through media outlets. Accurate research findings need to be able to be accessed by alcohol and other drug workers and policy makers and over the years the NDARC Annual Symposium and *CentreLines* have become two of our main tools to achieve this goal.

Each year the NDARC Annual Symposium provides a forum for alcohol and other drug workers to hear about a wide range of research projects which are currently being undertaken at the Centre. Although publications are important to an academic institution it is vital that the information collected is fed back to the field as quickly as possible. Although the situation has improved greatly, there can still be a great delay between the collection of data, the identification of problems and the publication date of the report. Regular updates to the field are vital and the Annual Symposium has proven to be a great vehicle for getting important findings out to the field in an efficient way.

This year the NDARC Annual Symposium will be held on Thursday 28 July at the Masonic Centre, Sydney. Once again we have decided to focus on a number of key areas and highlight some of our major projects, either recently completed or currently in progress, that may be of interest to workers in the alcohol and other drug field. Details of the program will be posted on our website as they become available.

For more information on the Annual Symposium and a registration form for the day please go the NDARC website at **http://ndarc.med.unsw.edu.au/ndarc.nsf/website/News.symposium**, or contact the NDARC Reception on (02) 9385 0333 to have a registration form faxed or mailed to you.

Paul Dillon, Editor

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

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Richard Mattick

In this month's *Project Notes* the 'Comorbidity and Trauma Study (CATS)' is discussed. This project is a large case-control study of heroin dependence and its relationship to childhood trauma, funded by the National Institute on Drug Abuse. This is just one of a number of NDARC projects being conducted on an international basis, in this case, Washington University, St Louis and also the Queensland Institute of Medical Research, Brisbane. This project is the result of a successful application for international research funds offered by the United States and allows for collaboration with researchers with complementary areas of expertise.

In addition to research projects currently being carried out independently within the Centre, NDARC engages in collaborative projects with other researchers throughout Australia to provide a national focus for research in this field. NDARC has had a history of strong links with researchers overseas. Jan Copeland and Wendy Swift's work with US researcher Roger Roffmann and Bob Stephens in the area of cannabis treatment, Shane Darke's work with Mike Gossop from the UK on the Severity of Dependence Scale (SDS) and Louisa Degenhardt and Wayne Hall's collaborative work with the WHO and the World Bank looking at the burden of disease attributable to illicit drug use are just some examples of the work carried out by NDARC staff.

Rebecca McKetin's work continues to strengthen the relationship between NDARC and the United Nations Office on Drugs and Crime (UNODC) Regional Centre for East Asia and the Pacific. NDARC currently has a Letter of Agreement with the UNODC to support their project 'Improving ATS Data and Information Systems' through the provision of technical assistance and information sharing.

The project itself consists of developing national systems through which data on amphetamine-type stimulants can be collected, a regional network of focal points through which information can be shared and synthesized, and a regional clearinghouse for amphetmine-type stimulant trends in East Asia and the Pacific. NDARC is also contributing information on the Australian ATS situation to this project. Further information on the project can be found at **www.apaic.org**.

The Program of International Research and Training (PIRT) was developed by Kate Dolan to build capacity among researchers in developing countries. Funded by the Australian Government Department of Health and Ageing for the last two years, PIRT has carried out nine projects for organisations such as UNAIDS, AusAID, Iranian Prison Service, the Centre for Harm Reduction, and the World Health Organization. Currently PIRT is co-ordinating and editing a special issue of the *Harm Reduction Journal* on HIV, injecting drug use and Islam. One of the major initiatives of the project has been the providing of training to researchers in developing countries on writing skills.

Future work with overseas researchers will include a collaboration with Professor Jonathan Chick from the University of Edinburgh on the Australian Treatment Outcome Measure. This will further develop our body of work on treatment outcome monitoring, a topic that is examined in this month's *Issuing Forth*. **cl**

issuing forth

Routine Outcome Monitoring in Alcohol Abuse Treatment Services

Peter Lawrinson

With the exception of tobacco-related disorders, which have been identified as the single largest preventable cause of disease in Australia, alcohol use disorders were the most common of the substance use disorders. The criteria for either alcohol abuse or alcohol dependence were met by 3% and 3.5% of persons, respectively. Alcohol use disorders were more prevalent amongst adult males (9.4%) than females (3.7%)[1]. In 1998-99 health care costs arising from alcohol abuse was estimated at AUD$224 million and costs associated with alcohol abuse-related crime were estimated to be AUD$1.1 billion[2].

Given the magnitude of the impact of alcohol abuse and dependence in Australia, investigation into the efficacy, on-going effectiveness and cost-benefits of treatment for alcohol dependence is essential. It shall be argued that establishing a routinely collected treatment outcome monitoring system for alcohol abuse treatment services, where deemed appropriate by the services themselves, may compliment well-established treatment evaluation research practices.

Background

The introduction of routine outcome monitoring represents a major shift in both clinical research and practice. Many clinicians remain unconvinced of the benefits of research for improving the well-being of their clients. Traditional treatment efficacy (RCT) studies produce findings supporting treatments that are often not adopted by the treatment sector, as they are perceived as lacking generalisability or even applicability for routine treatment provision. Longitudinal studies go further than RCT studies, in terms of providing an understanding of the natural history of drug use and treatment practices; however, the further in time the client cohort under investigation is distanced from their index treatment, the greater the problem of attributing changes in client behaviour and well-being to the index treatment. Outcome Monitoring Systems (OMSs) provide an alternative means to investigate the impact of treatment, and changes in treatment provision, as treatment is occurring. There is no cohort as such - clients continually move through treatment and are reviewed at designated points whilst in treatment and/or followed-up at some point(s) after treatment has ceased.

In addition, analysis of the data collected in the course of routine outcome monitoring can provide insight into the relationship of various client characteristics, treatment processes and outcome that can be further explored in more controlled research designs. So that rather than replacing the need for more traditional methods of research, routine outcome monitoring can aid in the generation of hypotheses that are more amenable to testing using traditional methodologies.

What is an Outcome Monitoring System?

In essence, outcome OMSs are the systematic and standardised collection of data on client and treatment provision characteristics and treatment outcome measures, across many AOD treatment programs, either at a local, state or national level[3]. The choice of which treatment outcome measures to employ is contingent upon the stated goals of the treatment program, and their ability to provide valid and reliable information to clients, clinicians, managers and policy makers, thus enabling them to make evidence-based decisions that will ultimately improve the course of treatment and client well-being[4].

A key aim of implementing an OMS is to evaluate the effectiveness of treatment delivery across a range of services, identifying those components of the treatment process that are associated with improved outcomes and applying that acquired knowledge to affect changes in aspects of service delivery to optimise outcomes for all clients. Given that outcome monitoring is ongoing, it implies that

this process of assessment, analysis, planning, affecting change and re-assessment is itself reiterative, ideally resulting in incremental improvements in aspects of service delivery related to improving outcomes for clients.

In most cases data is collected by clinicians, in the context of a face-to-face therapeutic encounter. The process of collecting, collating and reporting the data is largely automated and integrated into routine clinical practice. This is facilitated by a treatment program philosophy that views outcome measurement as a core clinical activity and part of an on-going, quality assurance program and where the activities associated with the OMS are supported, both from an ideological and resource perspective at all levels of the service.

Ideally, the data collected can be utilised at the client-clinician level, to monitor, reflect and make decisions regarding an individual's progress in treatment. At the agency level, data can be aggregated, to assess the impact of different aspects of service provision on treatment outcome for specific groups of clients and within a relatively short time frame. This information can then be used for the planning and execution of changes in service provision with the aim of improving treatment outcome, the impact of which will also be assessed. Agency staff can determine if what they do actually works, to the extent, in the manner, and with whom it is intended to work.

OMSs can range in size and scope from serving a single organisation through to nation-wide outcome monitoring across the AOD treatment sector. Brown and colleagues[5] advocate that taking a local approach to outcome monitoring is a reasonable and cheaper alternative to a large-scale OMS and can provide data more in tune with specific, local needs. The needs of a relatively small number of agencies comprising a single organisation or agencies engaged in similar activities can be served, thus maximising the pertinence of such information to clinical staff and other stakeholders.

Some reasons for conducting routine outcome monitoring

Client populations can differ over time and place, treatment services can differ in treatment philosophy, levels of staffing and resources, and support received at a jurisdictional level. Additionally, circumstances affecting the treatment population and treatment services, such as the price and availability of drugs and community attitudes towards substance abuse and its treatment, can change, thus affecting treatment outcome. Continuous evaluation provides for real-time feedback to treatment providers about their practices.

Several commentators have noted that, despite the growing body of research-based evidence supporting the efficacy and effectiveness of a wide range of AOD treatment approaches, there is little evidence that this knowledge is being applied in routine clinical practice[5,6]. The reasons suggested for this centre around the notion that there is a fundamental lack of communication, cooperation and understanding between researchers and practitioners. Through the conduct of routine outcome monitoring, across a range of AOD service providers, there exists the potential to bridge the gap between research and practice. OMSs employ scientific methodology to standardise the collection of treatment outcome data, without which comparison of outcomes across services and client groupings would be impossible. For the most part it is the staff of AOD services who are tasked with collecting the data. Through their direct involvement in the operation of the OMS, which is (ideally) reinforced through the receipt of timely, regular and relevant feedback reports, staff can gain an appreciation of the value of systematically evaluating, modifying and re-evaluating their practice for enhancing the well-being of their clients. Brown and colleagues[5] suggest that the interest generated among AOD treatment staff, in examining the analysis of the data that they themselves had collected, had provoked them to become more curious about the treatment process and more directed in querying changes to service provision. This approach to service provision serves to enhance the professionalism of clinical staff and overcome the scepticism and apathy that staff feel in relation to the findings of traditional research studies.

Treatment Data Sets and Outcome Monitoring

In Australia, the National Minimum Data Set for Clients of Alcohol and Other Drug Treatment Services (NMDS)[7] has made it possible to compare and aggregate information nationally, and by jurisdiction, on drug problems, service utilisation, and treatment programs for a variety of clients, communities and service settings. It also provides agencies with access to basic data relating to particular types of communities, drug problems and treatment responses that are relevant for their own circumstances. The process of implementing the NMDS included the comprehensive training of AOD treatment service staff to reliably collect the standardised data items, the selection and definitions of which had been nationally agreed to; the equipping of agencies with computer software, hardware and support, necessary for the automation of data collection and reporting; and the establishment of a tiered system for checking data coverage and quality. It should be apparent that the infrastructure, in terms of developing staff expertise, establishing appropriate business rules and administrative procedures, and gaining access to appropriate technology, could also be applied, by a locally-based group of consenting agencies, to the standardised collection of outcomes data.

Developing tools for routine outcome monitoring in alcohol abuse treatment services

In a collaborative enterprise, the National Drug and Alcohol Research Centre (NDARC), Turning Point Alcohol and Drug Centre and the Network of Alcohol and Other Drug Agencies (NADA) have secured funding from the Alcohol Education and Rehabilitation Foundation (AERF) to develop a treatment evaluation instrument intended to provide the means to standardise evaluation and routine monitoring of treatment outcomes for alcohol abuse treatment services where deemed appropriate.

The instrument will be required to fulfil the following criteria.

(i) To measure treatment outcome across a range of domains of client functioning.

(ii) The core instrument should contain client descriptors and outcome variables that could be administered across a range of treatment types and a series of treatment specific modules containing administrative, predictor and treatment provision variables.

(iii) The data collected in a single interview must meet the needs of program evaluators, clinicians and researchers.

(iv) It must be able to be integrated into the existing data collection and reporting requirements of AOD treatment services.

(v) It must be brief and easy to administer and score.

(vi) It should provide scores and indices that are sensitive to measuring change in outcome over time and relate differences in outcome to differences in treatment delivery

(vii) It must have good reliability, validity and sensitivity.

(viii) It must be broadly acceptable to researchers and treatment providers across the Australian AOD field and appropriate for use in the Australian context.

The development of an alcohol treatment outcome measure and its successful integration into routine clinical practice will serve the needs of treatment evaluation researchers and clinicians by providing a comparable core dataset. It should be recognised that the success of such a venture rests ultimately with the clinicians who are tasked with collecting the data. The information collected and the method of collection itself must be of immediate clinical utility, sited within routine clinical practice and supported at all levels of administration.

OMSs can provide a rich source of data for researchers interested in investigating the complex relationships between client and treatment program factors and treatment outcome. Clinicians too can benefit from efficiency gains in the delivery of resources to services and client groups: by comparing the progress of their clients with that of patients from similar facilities; defending against cost-cutting or down-grading of services; and increasing confidence in their organisation's ability to produce positive outcomes for their clients. Ultimately, of course, it is hoped that through monitoring of their progress through treatment, and by taking into account their individual needs, that OMSs lead to clients achieving improved treatment outcomes and contributing to the national goal of reducing harm from alcohol use for the community. cl

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project **notes**

Comorbidity and Trauma Study (CATS)

Richard Mattick, Maree Teesson, Louisa Degenhardt, Elizabeth Conroy, Michelle Torok, Cherie Kam, Elizabeth Maloney and Caitlin McCue (NDARC), Elliot Nelson (Washington Uni), Michael Lynskey (Washington Uni), Grant Montgomery (QIMR) Dixie Stratham (QIMR), Megan Campbell (QIMR), Yong Pan (POWH) and Bill Rawlinson (POWH)

NDARC is one of three collaborating centres conducting a large case-control study of heroin dependence and its relationship to childhood trauma. The study is funded by the National Institute on Drug Abuse and is being conducted in collaboration with Washington University, St Louis and the Queensland Institute of Medical Research, Brisbane.

The aim of the research is to examine childhood trauma as a covariate and potential moderator variable in the examination of candidate genes that may be associated with the risk of opioid dependence. Specifically, the study aims to:

a) Interview and collect blood samples from 1500 cases and 1500 controls, matched on the basis of age [+/–2 years], gender and employment status

b) Identify polymorphisms and/or mutations in candidate genes to be typed in cases and controls

c) Assess retrospective history of childhood trauma to enable its inclusion as a risk modifying variable

d) Analyse genotype and interview data to test for candidate gene effects on opioid dependence, and the moderation by history of childhood trauma.

Participants complete a face-to-face, structured, clinical interview that covers topics such as alcohol and other drug use and relapse, mood, personality, violence and other trauma, and adverse childhood events (physical and sexual abuse). Participants also provide a small blood sample for genetic analysis and hepatitis C research. The interview is administered as a computer-administered diagnostic interview (CADI). The axis I diagnostic sections will be taken from the lifetime version of the Composite International Diagnostic Interview (CIDI). These sections will enable DSM-IV, ICD-10, and DSM-III-R diagnoses to be made including opioid abuse and dependence, other drug abuse and dependence (including cannabis, sedatives, stimulants, cocaine), alcohol abuse and dependence, nicotine dependence, post-traumatic stress disorder, and major depressive disorder. The childhood abuse assessment incorporates sections on sexual abuse and physical abuse modified from the Christchurch Health and Development Study. An assessment of subsequent victimization from this source has also been included. Sections derived from the interview used in the Australian National Survey of Mental Health and Well-being and the Diagnostic Interview Schedule (DIS) will be used to screen for borderline personality disorder (BPD) and to assess antisocial personality disorder (ASPD) respectively. Information on demographics and ancestral origin is obtained using a section from SSAGA-OZ (modified from the SSAGA for use in Australian populations for ongoing genetic studies). Finally, family history information is collected using a modified instrument that combines components of the Family History Screen (FHS) and the Family History Assessment Module (FHAM).

Project Background

Opioid dependence has been long-recognized as a familial disorder. More recently, the additive genetic contribution to opioid dependence liability has been found to account for more than 50% of the variation in risk, and to be largely specific to dependence on opioids, versus other drugs. Twin studies have also found evidence for an individual-specific environmental contribution to liability. Published reports support a role for childhood abuse (i.e. childhood sexual abuse or physical abuse) as an environmental exposure associated with increased risk for opioid dependence. Long-term pathophysiologic changes that have been found to be associated with early trauma exposure in humans and animals suggest potential routes by which this association may be mediated. Given that preliminary evidence for genotype x environment (G x E) interactions involving related phenotypes (e.g. antisocial behaviour) has already been reported, we propose to incorporate childhood abuse history in our analyses as an environmental variable that may modify genetic risk-factor effects.

Although molecular genetic investigations of opioid dependence have not yet identified any candidate genes, the current project is designed to circumvent factors that appear to be responsible for problems in this area: limited power, inadequate correction for multiple testing (particularly post-hoc analyses), variability in the phenotypes examined, and error secondary to population stratification. Specific areas in which the design seeks to improve upon prior work include: 1) greater power provided by a large sample (1500 cases and 1500 matched controls; several-fold larger than prior studies); 2) a well-defined, well-characterized phenotype (i.e. DSM-IV opioid dependence diagnosis made via in person interview using the CIDI); 3) conservative corrections for multiple testing; 4) genomic controls to control for population stratification; and 5) incorporating childhood abuse history as a risk modifying variable in analyses to determine whether evidence is found for significant G x E interactions; 6) selecting candidate genes based on information from animal and human studies, focusing on reports of association with opioid dependence and related phenotypes as well as studies that have demonstrated persistent pathophysiologic changes in adult animals and humans with a history of early trauma.

The candidate genes that we plan to examine for an association with opioid dependence risk, and a brief summary of the rationale for the inclusion of each, is provided in Table 1. As the literature in this area is rapidly evolving, we plan to periodically update this list prior to the beginning of genotyping to reflect the impact of pertinent publications to the relative priority assigned to each candidate. It is expected that this process will lead to the removal of some candidates from this list to the addition of others for whom support has emerged.

It is hoped that the current project will be of benefit in enabling interventions to be designed to reduce the rates of heroin dependence among people who have suffered childhood trauma. It will also be used to examine patterns

Table 1 Summary of putative candidate genes and the rationale for their inclusion

CANDIDATE GENE	SUMMARY OF THE RATIONALE FOR INCLUSION
MOR	primary site for opioid actions; human reports of association; rodent QTL's in area associated with various opioid effects; rodent evidence that rewarding effects are via actions at these receptors; tonic inhibition of HPA axis via these receptors
DOR	complementary effects to MOR; knockouts do not develop morphine tolerance and have increased alcohol intake; agonists display rewarding effects; antagonists inhibit morphine tolerance and withdrawal
KOR	QTL for morphine antinociceptive effects maps to region of locus in mice; involved in morphine withdrawal with attenuation in knockouts and potentiation by antagonists; agonists aversive; evidence for effects that oppose those of MOR and DOR in pathways mediating reward
CRF-1 receptor	stress-induced opioid (and other drug) relapse; knockout mice display delayed and prolonged alcohol consumption following severe trauma
CRF	ligand for the CRF-1 receptor; evidence of long term changes in humans and animals after severe trauma
NPY	human reports of association with alcohol-related phenotypes; QTL for alcohol consumption in alcohol-preferring rats; evidence for greater alcohol consumption in knockouts and similar reductions with over-expression; opioid-mediated antinociceptive effects; attenuation of opioid withdrawal; evidence of long-term changes in transmission in animals and humans after severe trauma
NPY-1 receptor	NPY effects on alcohol consumption via these receptors; similarly, opioid-mediated antinociceptive effects
GABA-A receptor subunit complex	evidence of long term changes in rodents after severe trauma; frequent comorbid abuse of drugs with effects on these receptors; rewarding effects of opioids thought to occur via MOR on GABAergic interneurons; human linkage reports to alcohol-related phenotypes and nearby region in mixed substance dependence group
CB-1 receptor	human reports of association; knockouts have reduced rewarding effects of opioids; some evidence for cross-tolerance of CB and opioids; antagonists impair acquisition of morphine CCP
CCK-B receptor	knockouts have opioid -mediated basal hyperlocomotion and increased locomotor response to morphine and exhibit evidence for upregulation of opioid system; antagonists suppress morphine withdrawal, block formation of morphine CPP, and reversed attenuation of morphine CPP following chronic mild stress
Neurokinin-1 receptor	knockout mice fail to show morphine self-administration, CPP, and locomotor effects
BDNF	human reports of linkage to area near locus for substance dependnece; involvement in rewarding effects of cocaine and mediation of the long term effects of opioids
COMT	human reports of association
NMDA receptor comps	evidence of involvement in opioid tolerance and withdrawal; persistent changes in transmission after morphine treatment
5-HT-1B receptor	QTL for morphine's antinociceptive effects in mice maps near locus; increased morphine intake with drugs that have other 5-HT mechanisms
NE transporter	knockouts display potentiated analgesic response to morphine; long term changes in NE receptor numbers in LC after severe trauma
D-2 receptor	human reports of association; DA involved in common reward for opioids and other drugs; knockouts display potentiation of MOR and KOR analgesic effects and fail to demonstrate morphine CPP when in deprived state
Beta-endorphin	primary endogenous ligand for MOR; heterozygotes for gene non-expression have increased alcohol self-administration
Linkage study candidates	several regions with linkage initially reported in studies of alcohol dependence and replication in large group with mixed substance dependence

of comorbidity among this group, and its relationship to relapse, treatment seeking and treatment outcome.

Feasibility: the pilot study

During the period from October-December, 2002 a pilot study was conducted in which 25 individuals enrolled in the NSW methadone maintenance program and 25 matched controls were interviewed using the structured questionnaire designed for this study. A blood sample was collected from each participant. Potential cases receiving maintenance treatment for opioid dependence at two clinics in the Central Sydney Area Health Service were approached at the clinics and invited to participate. Controls were recruited through placing advertisements in employment agencies in the same geographic areas in which the clinics were located. Individuals expressing possible interest in participating were screened for eligibility and also to match them to cases: controls were of the same sex, age (within a 2 year range) and employment status as cases, but were required to have had no or minimal opioid use (<5 occasions). A total of 142 people phoned the office to express interest in participating in the study: a brief screen for eligibility and to match controls to cases was administered: 25 individuals were interviewed.

All interviews were successfully completed. Consistent with NSW state wide data, the majority of cases (60%) were male and their mean age was 37.1 years (controls: mean = 36.0). The rates of physical abuse resulting in injury and childhood sexual abuse involving attempted or completed oral, anal or vaginal intercourse were high in the cases (44-56%) and were significantly higher than in controls. Rates of lifetime non-opioid drug dependence were also high in the cases: nicotine dependence 88%, alcohol dependence 44%, cannabis dependence 52%, cocaine dependence 40%, (other) stimulant dependence 52%, and sedative dependence 56%. There were no significant differences between cases and controls in rates of alcohol and dependence reflecting considerable use in those recruited through employment agencies (a feature of our design which will increase our ability to identify candidate genes with effects specific to opioid dependence).

Sex Workers in Sydney

Louisa Degenhardt, Amanda Roxburgh, Jan Copeland and Briony Larance

The last two decades have seen an increasing interest in the study of sex workers as a marginalised group at increased risk for poorer mental and physical health outcomes, inequitable access to housing and the problematic use of illicit drugs. Previous research has documented the risks of blood borne virus (BBV) transmission and sexually transmitted infections among sex workers due to unprotected sex with clients, the relatively high rates of HIV among sex workers in some countries, and the potential risks posed to the broader community via BBV transmission through clients to the general population. The literature also suggests that the risks faced by sex workers are further compounded by drug use. Studies have found that sex workers are a group characterised by high levels of drug dependence, and have also documented associations between sex workers' drug use and the poorer safety outcome of the sex encounter.

While much of the previous research on sex workers has focused on risk behaviours (such as needle sharing, and illicit drug use), working conditions and demographic characteristics, this study aims to examine key psychological disorders such as post-traumatic stress disorder (PTSD) and depression. PTSD and depression are common among individuals with substance use disorders, and accordingly, this study also aims to document the prevalence of substance dependence, and comorbidity of psychological disorders among sex workers. This project will provide a better understanding of psychopathology among sex workers which is essential for the provision of relevant mental health and drug treatment services to this population.

Face to face interviews will be conducted with approximately 100 female sex workers. Information will be obtained about demographics, drug use history, injecting drug use, working environment, safe sex practices, needle sharing practices, various psychological disorders, suicide attempts and suicidal thoughts, child sexual assault, and unwanted sexual activity after age 16.

This study is funded by the Australian Government Department of Health and Ageing. **cl**

abstracts

General practitioners' role in preventive medicine: scenario analysis using alcohol as a case study

Drug and Alcohol Review 23, 399-404

Christopher M. Doran, Anthony P. Shakeshaft and Julia E. Fawcett

The purpose of this analysis is threefold: first, to extract from the literature, current levels of GP detection of at-risk drinking by their patients, rates at which general practitioners (GPs) offer an intervention; and the effectiveness of these interventions; secondly, to develop a model based on this literature to be used in conjunction with scenario analysis; and thirdly, to consider the cost implications of current efforts and various scenarios. This study deals specifically with Australian general practice. A two-step procedure is used in the scenario analysis, which identifies opportunities for detection, intervention, effectiveness and assigning probabilities to outcomes. The results suggest that increasing rates of GP intervention achieves greatest benefit and return on resource use. For every 5% point increase in the rate of GP intervention, an additional 26 754 at-risk drinkers modify their drinking behaviour at a cost of $231.45 per patient. This compares with a cost per patient modifying drinking behaviour of $232.60 and $208.31 for every 5% point increase in the rates of detection and effectiveness, respectively. The knowledge, skill and attitude of practitioners towards drinking are significant, and they can be the prime motivators in persuading their patients to modify drinking behaviour.

Cannabis use and psychotic disorders: an update

Drug and Alcohol Review 23, 433-443

Wayne Hall, Louisa Degenhardt and Maree Teesson

This paper evaluates three hypotheses about the relationship between cannabis use and psychosis in the light of recent evidence from prospective epidemiological studies. These are that (1) cannabis use causes a psychotic disorder that would not have occurred in the absence of cannabis use; (2) that cannabis use may precipitate schizophrenia or exacerbate its symptoms; and (3) that cannabis use may exacerbate the symptoms of psychosis. There is limited support of the first hypothesis. As a consequence of recent prospective studies, there is now stronger support for the second hypothesis. Four recent prospective studies in three countries have found relationships between the frequency with which cannabis had been used and the risk of receiving a diagnosis of schizophrenia or of reporting psychotic symptoms. These relationships are stronger in people with a history of psychotic symptoms and they have persisted after adjustment for potentially confounding variables. The absence of any change in the incidence of schizophrenia during the three decades which cannabis use in Australia has increased makes it unlikely that cannabis use can produce psychoses that would not have occurred in its absence. It seems more likely that cannabis use can precipitate schizophrenia in vulnerable individuals. There is also reasonable evidence for the third hypothesis that cannabis use exacerbates psychosis.

The effect of a reduction in heroin supply on fatal and non-fatal drug overdoses in New South Wales, Australia

Medical Journal of Australia 182, 20-23

Louisa Degenhardt, Elizabeth Conroy, Stuart Gilmour and Wayne Hall

Objective: To examine the impact of a sudden and dramatic decrease in heroin availability, concomitant with increases in price and decreases in purity, on fatal and non-fatal drug overdoses in New South Wales, Australia.

Design and setting: Time-series analysis was conducted where possible on data on overdoses collected from NSW hospital emergency departments, the NSW Ambulance Service, and all suspected drug-related deaths referred to the NSW Court.

Main outcome measures: The number of suspected drug-related deaths where heroin and other drugs were mentioned; ambulance calls to suspected opioid overdoses; and emergency department admissions for overdoses on heroin and other drugs.

Results: Both fatal and non-fatal heroin overdoses decreased significantly after heroin supply reduced; the reductions were greater among younger age groups than older age groups. There were no clear increases in non-fatal overdoses with cocaine, methamphetamines or benzodiazepines recorded at hospital emergency departments after the reduction in heroin supply. Data on drug-related deaths suggested that heroin use was the predominant driver of drug–related deaths in NSW, and that when heroin supply was reduced overdose deaths were more likely to involve a wider combination of drugs.

Conclusion: A reduction in heroin supply reduced heroin-related deaths, and did not result in a concomitant increase, to the same degree, in deaths relating to other drugs. Younger people were more affected by the reduction in supply.

The effect of a reduction in heroin supply in Australia upon drug distribution and acquisitive crime

British Journal of Criminology 45, 2-24

Louisa Degenhardt, Elizabeth Conroy, Stuart Gilmour and Linette Collins

In early 2001, Australia experienced a sudden, significant reduction in the availability of heroin, following a number of years of unprecedented availability of high-grade heroin. This study examines changes in the scale, method, structure and visibility of heroin and other drug distribution in New South Wales (NSW), and in the incidence of possession and use of heroin and other drugs associated with this reduction in heroin availability. Police incident data on possession/use of illicit drugs and on incidents of acquisitive crime were analyzed using time-series analysis. Key informants (n=71) from NSW law enforcement and health agencies and heroin users (n=53) were interviewed regarding changes in the drug market following the reduced availability of heroin. NSW police reports were accessed for information on police investigations into drug crime and related activities. Drug distribution in NSW appeared to change around the time of the heroin shortage. High-level distribution of heroin, cocaine and methamphetamine may have remained somewhat discretely managed by different organized crime groups but greater collaboration occurred between these groups. Among mid-level distributors, there appeared to be a shift in emphasis from heroin to other drug distribution. Low-level dealers may have made a short-term shift from heroin to cocaine distribution. Low-level drug dealing also appeared to shift towards mobile and less overt methods of dealing. The number of street-level dealers reduced and in the longer-term, visibility of the drug markets decreased. There were significant decreases in police incidents of heroin possession/use reported by police, which were more marked among males and younger persons. At the same time, increases were observed in incidents for cocaine possession/ use. There was a sustained decrease in theft offences but a temporary increase in robbery offences during the peak period of reduced availability. This appeared to represent a shift in the criminal behaviour of users remaining in the market and was associated with changes in drug use patterns. Although the motivation behind the offending behaviour remained the same over time, cocaine use was associated with more violent crime. The method and structure of illicit drug distribution changed along with reduced heroin supply and carried implications for the policing of drug markets. Australia does not have a large cocaine market and the findings may have differed in countries where cocaine is in more ready supply.

Estimating the prevalence of problematic drug use: a review of methods and their application

Bulletin on Narcotics, vol. LIV, Nos1 and 2, 15-32

Matthew Hickman, Colin Taylor, Aminda Chatterjee, Louisa Degenhardt, Martin Fischer, Gordon Hay, Kate Tilling, Lucas Wiessing, Paul Griffiths and Rebecca McKetin

Policy makers increasingly need estimates of the prevalence of problematic drug use, such as injecting and the use of "crack". In the present article, the authors review indirect methods of estimating the prevalence of problematic drug use. Those methods utilize existing data on a sample of problematic drug users as "raw" material and then "indirectly" estimate the proportion of the total number of problematic drug users sampled in the raw material; that is, the methods estimate the sampling intensity of the raw data. That analogy is used to explain a number of indirect estimation techniques, focusing on capture-recapture and multiplier methods, the methods most often used in settings in developing countries. Assumptions underpinning indirect estimation techniques are presented, together with examples of their application. In addition, there is a discussion of the need to develop routine data sources that can be used in indirect prevalence estimation procedures.

Injecting and non-non injecting cocaine use in Sydney, Australia: physical and psychological morbidity

Drug and Alcohol Review 23, 391-398

Sharlene Kaye and Shane Darke

This study aimed to examine the physical and psychological harms of cocaine use and investigate the role of injecting versus non-injecting routes of administration in the severity of such harms. Two hundred and twelve cocaine users from inner-city and south-western Sydney were administered a structured interview containing section on demographics, drug treatment history, drug use history, cocaine use patterns, cocaine dependence and physical and psychological problems associated with cocaine use. Serious physical and psychological symptoms were prevalent among both injecting and non-injecting cocaine users. The prevalence and extent of symptoms was greater among injecting cocaine users, however route of administration did not prove to be a significant independent predictor of harm when other factors, such as frequency of use and level of dependence, were taken into account. While the level of physical and psychological harm was greater among cocaine injectors, it would appear that factors engendered by injecting, such as more frequent use and higher levels of dependence, result in higher levels of harm, rather than the route of administration per se. Physical and psychological problems were also reported among infrequent users, suggesting that cocaine can cause harm irrespective of frequency or method of use. Harm reduction initiatives should be targeted towards all cocaine users, not just those who seek treatment for dependence or present with acute medical complications. **cl**

recent **publications**

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