Western Australia
Illicit Amphetamine Summit

July 2007

Background paper

To request copies of this document contact:

Dace Tomsons Drug and Alcohol Office PO Box 126 MT LAWLEY WA 6929

Phone: (08) 9370 0333 Fax: (08) 9272 6605

Email: dace.tomsons@health.wa.gov.au

Suggested citation: Drug and Alcohol Office. WA Illicit Amphetamine Summit July 2007- Background paper. Drug and Alcohol Office, Perth.

We gratefully acknowledge the valuable contribution made by the following:

- Prevention Directorate, Drug and Alcohol Office and School Drug Education and Road Aware (SDERA)
- Mr Greg Swensen (Drug and Alcohol Office)
- Dr Catherine McGregor (Drug and Alcohol Office)
- Dr Kyle Dyer (University of Western Australia and Drug and Alcohol Office
- Mr Chris Cruikshank (PhD student, UWA and Drug and Alcohol Office)
- Alcohol and Drug Coordination Unit, WA Police Service
- The Department of Corrections
- Dr David McCoubrie, Consultant Emergency Physician, Royal Perth Hospital
- Department for Child Protection
- Aboriginal Programs Branch, Drug and Alcohol Office
- The Aboriginal alcohol and drug workers who freely gave of their knowledge and expertise in the consultation forum

Contents

OVERVIEW	1
What are amphetamines?	1
Forms of amphetamines	1
Patterns of use	1
Amphetamine effects	2
Violence	2
Neurotoxicity	3
Depression	3
Amphetamine withdrawal	3
Availability and price	4
The cyclical nature of amphetamine use in WA - Calls to the Alcohol and Drug Information Service	5
Usage rates in WA compared to national rates	5
Trends in Western Australia	5
PREVENTION	8
Risk and protective factors	8
Prevention campaigns	8
Western Australian prevention programs	
School based drug education	9
Western Australian School Drug Education and Road Aware	10
TREATMENT	11
Attracting and retaining users in treatment	11
Treatment preferences	
Infrequent heavy use and work related use	12
Psychosocial treatment approaches	12
Pharmacological interventions	13
Management of withdrawal	13
Substitution therapy	13
Treatment in Western Australia	14
LAW ENFORCEMENT	15
Introduction	15
New and stronger partnerships are required	15
Amphetamine seizures and arrests in Western Australia	

Amphetamine use and crime	16
Clandestine laboratories	17
The involvement of organised crime and established criminal networks	18
Drug Driving	18
CORRECTIONS, COURTS AND DIVERSION	19
Prison Health Services current response	21
Diversion Programs	21
Police Diversion	22
Diversion within the court system	
Program Evaluation	
, ,	
MENTAL HEALTH	
Amphetamines and mental health problems	
Current initiatives	
Individual Service Responses	
North Metropolitan Area Health ServiceSouth Metropolitan Area Health Service	
WA Country Health Services	
Mental Health and alcohol and drug service partnerships	
Training	25
ACUTE HEALTH	26
Impact on Frontline Workers	26
Management of acute psychostimulant toxicity	26
Incidence in emergency department presentations	
Treatment	28
Significant Opportunities for WA Research	28
CHILD PROTECTION ISSUES	29
Alcohol and drug issues in care and protection applications	29
Context of the findings	30
Use of alcohol and drug services by respondents	30
Follow up of the 2004 study	30
Conclusion	31
Current initiatives	31
ABORIGINAL ISSUES	32
Feedback of the Aboriginal Consultation	32
Use of amphetamines in Aboriginal communities	
The impact of amphetamine related problems on Aboriginal communities	34
Specific initiatives for Aboriginal people	

video APPENDIX 1: TREATMENT OPTIONS FOR AMPHETAMINE DEPENDENCE AND	
THEIR EFFICACY BASED ON AVAILABLE EVIDENCE	
Pharmacotherapies	37
Acute management	37
Withdrawal and short term management	37
APPENDIX 2: CURRENT RESEARCH PROJECTS IN AUSTRALIA	39
APPENDIX 3: THE MAIN AUSTRALIAN PSYCHOSTIMULANT/AMPHETAMINE	GUIDELINES . 41
APPENDIX 4: ABORIGINAL FORUM FEEDBACK	42
REFERENCES	46

List of Figures and Tables

Figure 1:	Withdrawal symptom severity and sleep patterns during the first three weeks of abstinence	4
Table 1:	Information about methamphetamines in Western Australia	4
Table 2:	Psychosocial treatment options and indications of efficacy based on available evidence	13
Table 3:	Number, weight and percentage change of Western Australian Amphetamine type stimulants (ATS) Seizures 2004-05 and 2005-06	16
Table 4:	Number and percentage change of ATS arrests 2004-05 and 2005-06 - Western Australia	16
Table 5:	Number of clandestine methamphetamine laboratories dismantled in WA 2003- YTD 2007	16
Table 6:	Number of ATS seizures made by Customs 2004/05 and 2005/06	18
Table 7:	Lifetime and recent use of amphetamines - National Drug Strategy Household Survey results compared to ASSIT screening results	19
Table 8:	Frequency of use by offenders: Amphetamines	19
Table 9:	Risk levels of use: Amphetamines	20
Table 10:	Injecting history: all drugs	20
Table 11:	Male principal drug of concern	20
Table 12:	Female principal drug of concern	20
Table 13:	Percentage of clients across all program, amphetamines principal and other drug of concern	23
Table 14:	Number of treatment episodes for amphetamines for Aboriginal people	34

OVERVIEW

Information sheets and a statistical bulletin that cover the following information in greater detail are included in your Information Pack.

What are amphetamines?

The term 'amphetamine' is a contraction of ' α -methylphenethylamine' and may refer to a number of compounds including amphetamine and methamphetamine.¹

Amphetamine and methamphetamine share similar pharmacological profiles. In recent years, methamphetamine has come to represent 97% of the two illicit amphetamines identified by forensic analysis in Australia.¹

The two terms, methamphetamine and methylamphetamine, are often used to describe the same compound which is formally designated N-methyl-1-phenyl-propan-2-amine

An illicit crystalline form of S-methamphetamine hydrochloride has become increasingly prevalent in illicit Australian markets within the last decade $^{2,\ 3}$. This form of the drug is distinct in appearance and by its markedly higher purity compared with other illicit methamphetamine forms 4

As a result of its high purity, crystalline methamphetamine presents a unique profile of administration characteristics and associated harms. In particular, the use of crystalline methamphetamine can be consumed by smoking its vapours, and is associated with greater risk of dependence and psychosis compared with other forms ^{5, 6}.

Amphetamine

Methamphetamine

Forms of amphetamines

Amphetamines come in these common forms:

- Powder
- Pills
- Base
- Crystalline form

Patterns of use

There are substantial differences in how people use amphetamines. Levels and methods of use differ and include:

- Chronic and dependent abuse by the socially marginalised usually injected
- Use by young, often socially well-integrated people in recreational settings swallowed and snorted
- Instrumental use of psychostimulants by certain occupational groups or in particular work settings ⁷

The risk of amphetamine-related harms is greater in dependent users. Dependence is, in turn, related to the route of administration. Modes of administration associated with rapid onset and high bioavailability such as smoking and injection of methamphetamine are more likely to produce a dependence syndrome.

Amphetamines are commonly used as part of a polydrug use pattern. The National Drug Strategy Household Survey (2004) found that recent amphetamine use occurred concurrently with:

- alcohol (87%)
- cannabis (68%)
- MDMA (49%)
- tranquillisers (7.1%) ⁸

Amphetamine effects

As central nervous system stimulants, amphetamines produce a range of dose dependent effects including increased alertness, sexual arousal, heart rate and blood pressure and reduced appetite and fatigue.

Negative health consequences are common to all amphetamines. The risk of these harms is increased when amphetamine is injected or smoked.

Common negative side effects associated with amphetamine use include agitation, anxiety, restlessness, disturbed sleep and loss of appetite.

Both injectors and smokers of methamphetamine report experiencing problems including dependence and psychosis. Agitation and aggression, hallucinations, paranoid delusions and psychosis may occur.

The impact of extremely agitated, psychotic methamphetamine users on accident and emergency and psychiatric units has been the subject of widespread media attention both nationally and in Western Australia. A recent study in Western Australia found that 1.2% of emergency department presentations may result from amphetamine use and that these tend to be high impact cases. ⁹

The proportion of mental health admissions to hospitals due to amphetamines was 1.7 % in 2005-06 (448 of 25,855), having peaked at 2% in 2001-02 (580 or 29,274). This represents unique individuals rather than episodes of treatment. In 2006, 1.5% of outpatient episodes in mental health services (representing 560 of 36,890 unique individuals) were due to amphetamines. The number of outpatient episodes presenting at mental health services has substantially increased since 2001.

Additional risks include risk of dependence, sexual risk taking behaviours and risks associated with the unknown content and purity of the drug. Of concern is the finding that users may be unaware of the risks to health and other harms associated with amphetamine use ⁷.

Violence

Methamphetamine related violence has attracted media attention however the relationship between methamphetamine use and aggression is not straight-forward. Methamphetamine use can increase aggression, but not all users become aggressive when they use methamphetamines. McKetin et al in their 2005 study of the Svdnev

methamphetamine market found that violent crime was no more common among methamphetamine users than other heavy drug users. Methamphetamine users that do commit violent crime are likely to have pre-existing tendency to anti-social behaviour. Violent behaviour can however be related to methamphetamine psychosis. ¹⁰

Neurotoxicity

Neurotoxic effects associated with amphetamine use include short and longer term disruption to brain neurotransmitters. Short term effects may include hyperactivity, mental confusion, agitation, fever, tachycardia and tremor (serotonin syndrome) the effects of which can be fatal. Neurotransmitter depletion can lead to low mood, lethargy and anhedonia (lack of enjoyment of life) post use.

Neurophysiological changes associated with motor slowing and memory impairment have been identified in methamphetamine users who had been abstinent for at least 11 months. ¹¹ However, these effects may be partially reversible with protracted abstinence (12 - 17 months). ¹²

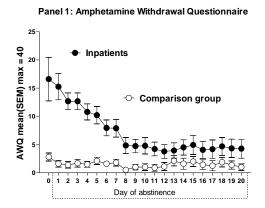
Depression

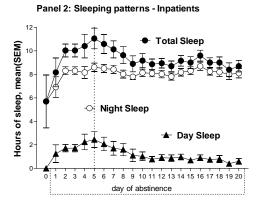
Depression is substantially higher in stimulant-dependent individuals in comparison to the general community ¹³. Depression is commonly identified in treatment samples ¹⁴⁻¹⁶ and community samples ^{17, 18} of amphetamine users. Dysphoric symptoms may persist for several years after treatment even where substance use is reduced ^{19.}

Amphetamine withdrawal

Amphetamine withdrawal symptoms include: dysphoria, fatigue, vivid, unpleasant dreams, insomnia or hypersomnia, increased appetite and psychomotor retardation or agitation. ²⁰ The amphetamine withdrawal syndrome has been characterised in an unmedicated inpatient sample of daily methamphetamine smokers (see Figure 1). ²¹

Figure 1: Withdrawal symptom severity and sleep patterns during the first three weeks of abstinence





Withdrawal symptoms reduced over the first week and remained relatively stable for the second and third weeks of abstinence. Mean hours of sleep peaked on the fifth day of abstinence. Sleep patterns remained stable and within normal limits for the second and third weeks of abstinence. However, there are reports of persistent depression (including suicidal ideation) and sleep disturbances for prolonged periods in some users ²⁰.

Availability and price²

The Illicit Drug Reporting System (IDRS) provides indicators of emerging drug trends at the national and state level. The IDRS reports include information obtained from interviews conducted with injecting drug users, a sentinel group for emerging drug trends. These users report all forms of amphetamines as 'easy" to get however in the last year powder has been harder to obtain and crystalline methamphetamine easier to obtain. ²² Amphetamines are usually bought in parts of grams or grams. A "point" is 0.1gram.

Prices vary and are based on the perceived purity of the drug with the crystalline form being most expensive. Prices have remained relatively stable and vary from about \$300 for a gram of powder to \$400 for a gram of crystalline methamphetamine.

Table 1: Information about methamphetamines in Western Australia

Form	Common name	Perceived Purity	Availability	Price	Mode of use
Powder	"speed"	Variable 10%- 20%	Harder to get than in 2005	\$300 per gram	Injection Snorting In a drink
Paste Not preferred	"base"	Large variation 25% -70%	Least common in WA	\$325 per gram	Swallow it In a drink Can be injected but not preferred
Crystalline form	"crystal" or "ice"	Average 45-50% can be up to 80%	Most common - easy to get	\$400 per gram	Injection Snorting In a drink Smoking

² Each year (since 1999) the Illicit Drug Reporting System (IDRS) surveys 100 intravenous drug users in WA and a range of key stakeholders including workers in the alcohol and drug sector to gain a picture of the intravenous illicit drug using scene in WA. As this survey covers the more "entrenched" end of the user population the results cannot be extrapolated to the broader population. The value of this information is in charting trends and providing information about availability and purity which does apply to the broader market.

The cyclical nature of amphetamine use in WA - Calls to the Alcohol and Drug Information Service

Drug related telephone calls received through the Alcohol and Drug Information Service (ADIS) tend to be a leading indicator of drug use trends. These calls show that in Western Australia there has been a cyclical pattern of ATS related problems with peaks in 1995, 2000 and late 2004. From a peak of 772 calls in the September quarter 2004 calls numbers declined to 512 calls in the March quarter of 2005. Since then call numbers have again increased to levels approaching those in 2004 ²³.

Usage rates in WA compared to national rates

Amphetamines continue to be a real and serious problem in Western Australia. The 2004 National Drug Strategy Household Survey (NDSHS) reports Western Australia's annual rate of amphetamine use at 4.5% while this is a reduction from the 5.8% in 2001, it is well above the national rate of 3.2%. Three other jurisdictions reported rates above the national average, the Australian Capital Territory (4.3%), South Australia (4.1%) and the Northern Territory (3.9%) 8.

The reasons behind the higher usage rates in Western Australia are unclear. One possible explanation is that the greater prevalence of amphetamine use in Western Australia may be related to the state's affluence and the high demand for labour in the current economic climate. Thus there is a high level of disposable income in the state. There are longstanding anecdotal reports that some workers who are required to undertake regular drug testing in the workplace will use amphetamines in preference to cannabis to avoid positive test results. ³

The 2005 Australian School Students Alcohol and Drugs (ADSSAD) national survey found that 6.5% of all Western Australian students aged 12 - 17 year reported using amphetamines in the last year. This is a significant decrease from 10.3% reported in the same survey in 2002 however it is still higher than the national average of 4.2%. In the 2005 survey 5.5% of students reported having used diverted dexamphetamines in the previous year. Western Australia has the highest rates of prescription of dexamphetamine in Australia and it is likely that the use of this form of amphetamine accounts for a substantial amount of the overall amphetamine use by school students.

Trends in Western Australia

Recent studies have been encouraging, showing the rate of use is declining; police seizures are increasing; and more people are accessing treatment services than anywhere else in the country.

While amphetamine use increased significantly in Western Australia after 1996, there have been positive reductions reported in recent years.

• The latest National Drug Strategy Household survey in 2004 showed the general population was now less likely to use amphetamines with 4.5% of the population aged 14 years and over reporting having used in the last year. This is significantly less than the 5.8% rate of use that was reported in 2001.

³ Amphetamines can be detected through urinalysis for 2-3 days after use. Cannabis use will return positive results for much longer. Detection will depend on level of use and can vary from 1 to 4 weeks or longer with regular heavy use.

- The rate of use among people aged 14 to 19 years reported in the National Drug Strategy Household Survey dropped from 11.7 % in 2001 to 5.7 % in 2004. Among people in their 20s, the rate of use fell from 17.6 % in 2001 to 15.4 % in 2004.
- The 2005 Australian School Students Alcohol and Drugs (ADSSAD) national survey found that 6.5% of all Western Australian students aged 12 17 year reported using amphetamines in the last year. This is a significant decrease from 10.3% reported in the same survey in 2002.
- In the 2005 survey 5.5% of students reported having used diverted dexamphetamines in the previous year. Western Australia has the highest rates of prescription of dexamphetamine in Australia and it is likely that the use of this form of amphetamine accounts for a substantial amount of the overall amphetamine use by school students.
- From 2004/05 to 2005/06 there was a 17.8% increase in the numbers of seizures of amphetamine type stimulants and a 28.4% increase in the amount seized. While the trend to 30 June 2006 indicates an increasing number of seizures by weight, a few large seizures, or conversely, large numbers of small seizures, can have a significant impact upon the final total and on long term trends.
- Increasing seizures of illicit drugs are usually associated with increasing rates of use. Higher levels of seizures and reduced rates of use suggest that occasional users are diminishing while more chronic and therefore marginalized users are using greater quantities. These users will be experiencing greater levels of harm.
- In line with national trends since 1997/98, there has been a significant increase in the number of clandestine laboratories dismantled annually in WA to mid June 2007. The number of WA laboratories detected increased from 3 in 1997/98, stabilised at 22 detections annually for the 2000-2002 period and then increased again to a high point of 58 detections in 2005/06. In the current financial year to date annual detections appear to have stabilised but it is important to note that the number of WA detections remain high and, in total, 283 laboratories were dismantled during the entire period.
- In 2005-06, 22.5 % of all drug treatment episodes involved amphetamines (4,213 of a total of 18,610). This is around twice the national average and indicates that West Australian services are attracting and retaining people in treatment.
- A study completed by Gray et al at Royal Perth Hospital in 2005 found that 1.2% of all Emergency Department presentations are directly related to the health effects of amphetamine use. This represents 624 (estimate) presentations per year. Currently metropolitan emergency adult attendance census is approximately 341,000 patients per year. Extrapolation of the above data across all emergency departments would represent an approximate amphetamine presentation burden of 4,090 patients per year across the metropolitan area.
- The proportion of mental health admissions to hospitals due to amphetamines was 1.7 % in 2005-06 (448 of 25,855), having peaked at 2% in 2001-02 (580 or 29,274). This represents unique individuals rather than episodes of treatment. In 2006, 1.5% of outpatient episodes in mental health services (representing 560 of 36,890 unique individuals) were due to amphetamines. The number of outpatient episodes presenting at mental health services has substantially increased since 2001.

- The use of amphetamine type stimulants is significantly higher amongst those who are imprisoned than among the general population. Results of the ASSIST (Alcohol, Smoking and Substance Involvement Screening Test) which is administered to prisoners on entry into prison found that 86% or female receivals into Bandyup and 74% of males receivals at Hakea reported lifetime use of amphetamines.
- A study conducted by the then Department for Community Development (DCD) in 2004 ²⁴ explored drug and alcohol use as a factor in applications to the Children's Court for protection orders and found that parental drug and alcohol use was a contributing factor to the protection application in 57% of the 100 legal cases studied

PREVENTION

This section was prepared in consultation with the Prevention Directorate of the Drug and Alcohol Office and School Drug Education and Road Aware (SDERA)

Most young people who use drugs including amphetamine do not develop ongoing problems with use. However, any person using may experience or cause problems as a result of their intoxication.

Decreasing amphetamine problems may be variously achieved by:

- preventing and delaying the onset of use. If individuals have not used before reaching their early twenties, they are significantly less likely to use and experience the harms associated with regular amphetamines use;
- preventing occasional users from progressing to regular use; and
- reducing the problems associated with regular use.

Social and community norms and environments that discourage amphetamine use contribute to preventing use and decreasing harms.

Risk and protective factors

There are a number of factors that place a young person at risk of drug use or act as protective factors in developing drug use problems. The impact of the factors will vary according to the development stage of the young person. Healthy family life during childhood is emerging as a critical influence that can reduce the risk of subsequent social and behavioural problems including drug use. ²⁵

Young people at risk of drug use are also more likely to experience other problems such as truancy, unemployment, and offending and poor mental and physical health.

Addressing multiple risk and protective factors results in positive outcomes across a range of areas. Early intervention programs that target "at risk" families have a positive effect in a range of outcomes including lower rates of licit and illicit substance use. ^{7,26}

Prevention campaigns

Prevention and early intervention activities aimed at amphetamine use, although considered to have a positive impact, have not been extensively evaluated. 7

Evidence ²⁷ suggests that social marketing strategies should be part of an integrated comprehensive program of strategies that seek to raise awareness about amphetamine-related harm, decrease the social acceptability of amphetamine use and create environments that discourage use and reduce associated harm. Mass media activity in itself is not enough to reduce problematic drug use. It raises awareness and change community acceptance of drug use and associated problems, and increased support for safer environments.

Targeted campaigns provide information to an "at risk" population and secondary groups that provide the social and physical environment, which discourages use and reduces associated problems. Best practice in the development and implementation of targeted campaigns is contingent upon:

- clearly defined target audience
- a clear understanding of the prevailing beliefs and attitudes of this group
- credible messages that have been tested with the target audience
- use of media and methods appropriate for the target audience.

Western Australian prevention programs

The *Drug Aware* illicit drug public health campaign uses youth communication mediums in targeting young people. The current campaign has focused on amphetamines. Resource availability has resulted in decisions to:

- focus campaign strategies on the Perth metropolitan area; and
- focus on the most cost effective reach to the target population being youth and gay entertainment, press, single station youth radio and internet hotmail.

Campaigns are supported in local communities by the community drug service teams, local drug action groups, area health services, population health units and police. These services meet in a statewide prevention forum for planning and capacity building.

Entertainment events and night venues such as hotels and night clubs are an inherent part of Australian culture and are environments where young people in particular can be exposed to alcohol and other drug-related harm. Entertainment events and night venues can adopt policies and practices that discourage drug use and better manage amphetamine-related problems when they arise.

The Night Venues and Entertainment Events Program (NVEEP) operates in conjunction with Drug Aware and includes a drug user education program, staff risk management training, and policy development, implementation and enforcement to reduce the risk factors among the high-risk group of people who attend night venues. The NVEEP is a collaborative project involving the Drug and Alcohol Office, WA Police, Department of Racing, Gaming and Liquor, Cabaret Owners' Association, Australian Hotels' Association, National Drug Research Institute and the WA Substance Users' Association.

School based drug education

School based drug education is limited in the extent to which it can be expected to address the range of risk factors that contribute to a young person developing drug use problems. Work with school based alcohol education has shown that sound, evidence based interventions can effect small changes in alcohol using behaviour and if the programs are broadly applied over entire populations the overall benefit of a good program can be large. ²⁸

A review of current research and theory about school based drug education (reference) was undertaken in 2004 and used as an evidence base to develop Principles for School Drug Education. The Principles provide a framework to support schools develop and implement effective drug education practice. Key themes that arise from the Principles are that school drug education:

• be comprehensive and evidence based,

- promote a positive school climate and relationships,
- target needs and context, and
- employ effective pedagogy.

Key evidence based components of an effective school drug education program are: Ensuring that the lesson material is relevant to the experiences of the young people

- Offering booster sessions
- Providing interactive activities
- Providing teacher training
- Adopting a harm minimisation approach
- Focussing on behaviour change rather than influencing knowledge and attitudes.²⁸

A need for targeted interventions for different groups of young people, particularly for high-risk youth, has also been identified. These programs need to be more intensive and comprehensive with both educational and skills training components and booster sessions.

Western Australian School Drug Education and Road Aware

School Drug Education and Road Aware (SDERA) is a joint initiative of the Association of Independent Schools, the Catholic Education Office and the WA Department of Education. SDERA is funded predominantly through the Drug and Alcohol Office to provide support to schools to deliver best practice drug education as guided by the Principles for School Drug Education. The strategic alliance of the education systems and sectors and SDERA's alignment to the WA Drug and Alcohol Strategy 2005-2009 allows SDERA to form influential partnerships at central and regional levels to support school based drug education throughout the state.

In practical terms SDERA builds a school's capacity to deliver drug education by providing: professional development, curriculum support materials (K-12), policy advice and advocacy support. The range of programs provided by SDERA focus on prevention and early intervention including an acknowledgement of the need for a harm reduction approach where indicated.

To assist students who may have drug use issues school based staff are offered professional development in early intervention practices and strategies which are applicable across the whole school community. This initiative serves to increase knowledge and understanding around drug use issues and to increase awareness of procedures, strategies and support pathways to aid in managing students with such issues in schools.

TREATMENT

This section was prepared with the assistance of Dr Catherine McGregor (Drug and Alcohol Office), Dr Kyle Dyer (University of Western Australia and Drug and Alcohol Office) and Mr Chris Cruikshank (PhD student, UWA and Drug and Alcohol Office).

In response to the growing problems associated with psychostimulant use in Australia the Commonwealth Department of Health and Aging commissioned a consortium of clinicians and researchers to update the 1998 National Drug Strategy Monograph No 32: *Models of Intervention and Care for Psychostimulant users.* The update monograph No. 51 represents the most comprehensive information available in Australia and provides a valuable resource for Summit participants. The monograph was edited by Dr Amanda Baker, Dr Nicole Lee and Ms Linda Jenner. Dr Nicole Lee from Turningpoint in Melbourne will be a speaker at the Summit.

Counselling, withdrawal and pharmacotherapy options for amphetamine users are not as well defined as for heroin or alcohol treatment and, with no standard pharmacotherapy in place for the management of methamphetamine withdrawal, some clients may be less inclined to seek help or access services.

Attracting and retaining users in treatment

Amphetamine users are difficult to attract and retain in treatment. Kamieniecki et al in 1998⁷ found that amphetamine users did not see alcohol and drug services as attractive or relevant to them as they commonly target alcohol and or heroin users. Wright and Klee (1999)⁷ found that users found it difficult to seek help because of paranoid and aggressive behaviour linked to their amphetamine use. Strategies recommended to attract amphetamine users included:

- Public display of agency policies especially about confidentiality
- Education and training for health professionals including communication skills and strategies to deal with aggressive behaviour
- Drop in centres that allow users to seek support and advice in an informal setting
- · Partnerships between agencies to facilitate referrals and
- Interventions to inform and support families.

In recent work done by through Turningpoint in Victoria (2007) dependent methamphetamine users and treatment service staff were interviewed about treatment utilisation and barriers to accessing treatment. Results showed that polydrug use was high, resulting in complex presentations for withdrawal and treatment. Self-detoxification was also high with over 80% managing their own withdrawal through self-medication with other drugs (including heroin and benzodiazepines). Half the user sample reported barriers to treatment including not knowing about treatment options. More than half the service providers did not use formal withdrawal scales and reported that on average only 41% of methamphetamine users completed withdrawal. They rated effectiveness of current treatment as low and their confidence in working with methamphetamine users as moderate. ²⁹

Amphetamine users do, however present in a range of other settings, including general practitioners, emergency departments, and psychiatric units and these can provide an important intervention and referral point. Enhancing the capacity of these agencies to deal effectively with amphetamine users can be achieved through workforce development,

improved linkages with specialist alcohol and drug services, development of resources such as treatment guidelines and specialised advice and support.

Treatment preferences

Work done by Hando et al in 1997³⁰ looked at treatment preferences among 200 regular users. Amphetamine dependence was determined as the key factor causing people to seek treatment. Users had a clear preference for seeking help through GPs or trying to moderate use alone or with the support of friends or family. In view of the preference for GP treatment Hando et al recommended further GP training in the management of amphetamine related problems and shared care arrangements between GPs and treatment agencies be encouraged.

Given the high rates of mental health comorbidity among amphetamine users Vincent et al in 1998³¹ recommended that clinicians working with amphetamine users need to be upskilled in assessment, management and referral of people with comorbidity problems.

Infrequent heavy use and work related use

Recommendations for interventions for infrequent heavy users and work related users made by Hando and Hall in 1993³² focused on providing information about the risks and adverse consequences of heavy use and the risks of driving and having a false sense of competence when using amphetamines. There has been no further published research on the efficacy of using simple interventions of this type. There may be opportunities for peer based education for professional groups known to use amphetamines (truck drivers, chefs, mine workers, building trades, fishermen and students) but there is no available research on the efficacy of this approach.

Psychosocial treatment approaches

Psychosocial approaches include outpatient interventions and residential treatment including therapeutic communities. Evidence on the efficacy of the various approaches is limited and there is some suggestion that positive outcomes have been due mainly to the intensity of the treatment rather than the form of treatment used.

There is limited evidence available that is based on well conducted research. The following table provides a summary of the efficacy of various treatment options based on the limited evidence available. An in depth description of the psychosocial treatment options and the evidence for their efficacy is appended as Appendix 1.

Current best practice remains the psychosocial treatment approach developed by Baker and colleagues. Randomised controlled trials of brief interventions comprising motivational interviewing and cognitive-behaviour therapy (CBT) showed an increased likelihood of abstinence from amphetamines and a reduction in levels of depression. ³³ However, CBT requires the ability to focus, hold, and sustain attention and to learn new coping skills. ³⁴ There is evidence that these functions are impaired in stimulant users and other approaches should be investigated.

Table 2: Psychosocial treatment options and indications of efficacy based on available evidence

Treatment	Indications of efficacy based on available evidence	Comments
Motivational interviewing	Effective in helping users recognise the severity of their problem	Usually the initial stage of intervention and treatment engagement
Outpatient cognitive behavioural therapy (CBT) - Includes skills training and practice dealing with cravings and high risk situations	Current best practice	Requires user to focus and attend. These abilities may be impaired for some users.
Contingency management - Based on rewards for good behaviour such as vouchers or privileges.	Has been shown to be effective with cocaine users in the US.	
Residential treatment	Outcomes enhanced when behaviour therapy or CBT are included	Outcomes based on retention in treatment.
Narrative therapy in combination with mitrazapine (medication for withdrawal management)	Positive results from 5 week trial	Dyer et al - study conducted in Perth
12- step (AA and NA)	Evidence is equivocal	Considered a useful ongoing support
The Matrix model Includes CBT, education about the drug, family education, 12 step programs and positive reinforcement	Good results initially but not sustained beyond 6 months post treatment	

Pharmacological interventions

The use of medications for the management of withdrawal symptoms and as substitution therapy can be effective treatment tools and are attractive options for users. An in depth description of current research on pharmacological treatment options for amphetamine dependence is included in Appendix 1.

Management of withdrawal

Clinical trials have been conducted in Australia in the use of midazolam sedation to assist in behaviour management and modafinil for management of cravings and withdrawal symptoms with some positive results. Joint research has been undertaken with UWA, Drug and Alcohol Office's Next Step services and the NSW Langton Centre to assess the suitability of the anti-depressant Mitrazapine as a treatment drug for Amphetamine-type stimulant problems.

Substitution therapy

Although significant research has been conducted, especially in the treatment of cocaine dependency, no pharmacotherapy has been conclusively shown to be an effective substitution therapy in the management of psychostimulant dependency. Some results are

promising, but the use of replacement pharmacotherapies remains experimental. There is a need for rigorous controlled studies with adequate follow-up, sample sizes and subject selection.

There have been some positive reports of dexamphetamine substitution treatment. A recent controlled study from the UK (unpublished) found no advantage of dexamphetamine substitution treatment over treatment as usual (psychosocial program). A controlled trial of dexamphetamine substitution treatment in amphetamine dependence is currently underway in South Australia and interim results have shown a trend towards greater reductions in amphetamine use and better treatment retention for the dexamphetamine group. ³⁵

Treatment in Western Australia

In 2005-06, 22.5 % of all drug treatment episodes involved amphetamines (4,213 of a total of 18,610). This is around twice the national average and indicates that, notwithstanding the significant number of people with amphetamine related problems, West Australian services are relatively more successful in attracting and retaining people in treatment.

This in turn presupposes that services have incorporated the elements identified as key to treatment outcomes for amphetamine users into general programs. ⁷

In Western Australia, with the exception of specific medications for withdrawal, there are no exclusively amphetamine programs. Treatment services are offered through:

- A state wide network of twelve Community Drug Service Teams (CDSTs) provide outpatient counselling and treatment services to amphetamine users and their families. CDSTs also support local communities in implementing prevention campaigns.
- The Drug and Alcohol Office's Next Step services comprise a specialist clinic providing outpatient services, a residential detoxification centre including dedicated beds for Aboriginal patients, and clinics throughout the metropolitan area that are in the process of being integrated as part of the community drug service teams.
- A comprehensive range of predominantly non-government organisations, including specialist youth, women's and family services, offer outpatient counselling and residential rehabilitation. Some residential services, of which there are nine in WA, have a majority of their clients in treatment for amphetamines.

LAW ENFORCEMENT

This section was prepared by the Alcohol and Drug Coordination Unit, WA Police Service

Introduction

Amphetamine use is a concern to Police because:

- it is an illicit drug which is readily available in the community,
- clandestine laboratories which produce amphetamines pose considerable dangers to the surrounding community and those on the premises,
- amphetamine use is closely associated with crime and organised crime is involved in the importation, manufacture, distribution and sale of amphetamines, and
- the aggressive and violent behaviour of amphetamine users pose risks to Police, health service staff and the community.

New and stronger partnerships are required

The traditional law enforcement role focuses upon reducing the supply of illicit drugs. However, a growing recognition of the complex impact of drug and alcohol use in the community requires stronger interagency collaboration to implement strategies to reduce supply, demand and overall harm.

The violent and paranoid behaviour of some amphetamine users increases the occupational health and safety risks to Police officers, the public and to drug users themselves through injury, spread of blood borne disease and other problems.

To intervene more appropriately, Police, hospital and community agency staff require a better knowledge about amphetamine related problems and treatment and an improved understanding of each agency's operational role.

Amphetamine seizures and arrests in Western Australia

The availability of amphetamines in Western Australia is a concern to all. Amphetamines are the second most commonly group of illicit drugs used by Western Australians, after cannabis. 36

The data in the tables below indicates that while there has been a significant increase in the number and weight of amphetamine seizures in Western Australia, the number of arrests declined slightly over the period.

The increase in the number and weight of amphetamine seizures in Western Australia in 2005-06 is an important indicator of the market for illicit amphetamines, including phenethylamines such as MDMA.

Table 3: Number, weight and percentage change of Western Australian Amphetamine type stimulants (ATS) Seizures 2004-05 and 2005-06 37

Number			Weight (grams)		
2004-05	2005-06	% change	2004-05	2005-06	% change
2,454	2,891	17.8	19,602	25,165	28.4

It is important to note that these figures vary widely. While the trend to 30 June 2006 indicates an increasing number of seizures by weight, a few large seizures, or conversely, large numbers of small seizures, can have a significant impact upon the final total and on long term trends. This data includes all amphetamine type stimulants including MDMA (Ecstasy).

Table 4: Number and percentage change of ATS arrests 2004-05 and 2005-06 - Western Australia

Arrests			
2004-05	2005-06	% Change	
2,045	1,903	- 6.9%	

Apart from reducing supply, Police also have a role in reducing harm to drug users and to the community generally by directing people who are eligible for drug diversion programs to treatment. Since the beginning of 2005 for example, more than 80% of referrals to WA Police All Drug Diversion were for people with amphetamine related problems.

Amphetamine use and crime

Regular methamphetamine users have a high level of contact with Police. The most common crimes involving methamphetamine users are illicit drug offences such as trafficking and possession and property crimes such as breaking and entering and theft.

McKetin et al (2005) surveyed regular methamphetamine users in Sydney and reported:

- two in three had been arrested at some point in their life,
- most are arrested for illicit drug offences and theft,
- one third had been in prison, and
- almost half had committed a crime in the past month (apart from using illicit drugs).

Drug Use Monitoring Australia (DUMA) urine analysis results obtained from men apprehended by WA Police and held at the East Perth Watchhouse during 2006 survey periods reflect similar findings:

- of male detainees who committed violent crimes (n=96) such as robbery and aggravated assault, 25% tested positive to methamphetamines,
- 50% of male detainees whose most serious offence was a drug offence (n=24) tested positive to methamphetamine,
- of male detainees who committed property crimes such as fraud, car theft and other theft (n=61), 39% tested positive to methamphetamines and
- of male detainees who committed traffic offences (n=33) 33% tested positive to methamphetamines.

It appears that most methamphetamine users are involved in crime before the age of first use of methamphetamine and before the age of first contact with Police for drug use.

All methamphetamine users are not offenders, however, the use of methamphetamine increases the likelihood of violent, erratic behaviour, a point reinforced by a recent USA study by Sommers and Baskin.³⁸ Sommers and Baskin's interviews with 205 methamphetamine users concluded that methamphetamine use heightens the risk of violence in some drug users. A large proportion of the violence reported by methamphetamine users in the study occurred in domestic situations, raising concerns regarding the incidence of family and domestic violence among this group of drug users.

Clandestine laboratories

In line with national trends since 1997/98, there has been a significant increase in the number of clandestine laboratories dismantled annually in WA to mid June 2007.

The number of WA laboratories detected increased from 3 in 1997/98, stabilised at 22 detections annually for the 2000-2002 period and then increased again to a high point of 58 detections in 2005/06.

In the current financial year to date annual detections appear to have stabilised but it is important to note that the number of WA detections remain high and, in total, 283 laboratories were dismantled during the entire period.

Figure 5: Number of clandestine laboratories dismantled in WA 1997/98 - 2006/07 YTD (mid June 2007)⁴

Year	Number Dismantled
1997/98	3
1998/99	8
1999/00	17
2000/01	22
2001/02	22
2002/03	36
2003/04	33
2004/05	44
2005/06	58
2006/07 YTD	40
Total	283

Please note that these figures include all illicit drugs, however, the majority of the laboratories were manufacturing amphetamines

The Australian Crime Commission Illicit Drug Data Report 2005-06³⁷ notes that tablets with ATS content, powder and liquid methamphetamine and crystal methamphetamine have been seized by Customs.

_

⁴ Unpublished WA Police data - Organised Crime Division.

Table 6: Number of ATS seizures made by Customs 2004/05 and 2005/06

Year	Number of Detections	Weight of Seizures (Kg)
2004-05	205	154
2005-06	423	88

These figures reflect a trend towards the increased detections of smaller size shipments of ATS.

The involvement of organised crime and established criminal networks

The diversion of precursor chemicals for the manufacture of amphetamines and the extent of supply, distribution and sale of finished amphetamine suggest a significant level of involvement by organised crime and established criminal networks.

An environmental scan of alcohol and drug issues facing policing in Australia, conducted in 2005, concluded that the involvement of organised crime in the importation, manufacture, supply and selling of amphetamines is likely to increase in the future. ³⁹

Moreover, tighter domestic restrictions on over-the-counter sales of pseudoephedrine based pharmaceuticals and controls on the acquisition of precursor chemicals and equipment from industry may lead to the establishment of larger laboratories overseas, requiring considerable financial and other resources to establish and operate. ³⁹

There continues to be a need for improved, ongoing and timely sharing of intelligence and technical expertise between Police Services in all States, the Australian Federal Police and law enforcement bodies overseas.

Drug Driving

Illicit drugs impair judgement and coordination, particularly when combined with alcohol, making driving a vehicle more dangerous to the driver, other road users and pedestrians.

While there is a history of amphetamine use within sections of the heavy road transport industry, the extent to which illicit drug use contributes to road traffic accidents involving passenger vehicles is not fully understood.

However, there is clear evidence from the WA 2006 DUMA survey that a significant proportion of detainees at East Perth Watchhouse driving a vehicle prior to arrest had recently used methamphetamine, cannabis and other drugs.

Of the male detainees surveyed who committed traffic offences (n=33) 33% tested positive to methamphetamines. Of those charged with drink driving (n=17), 29% tested positive for methamphetamines.

Drivers withdrawing from methamphetamine use also pose a significant driving risk due to fatigue, anxiety and the possibility of falling asleep while driving. ³⁹

It is anticipated that a drug driving initiative will commence in WA during the last half of 2007 focusing upon saliva testing for methamphetamines, as well as THC (cannabis) and MDMA (Ecstasy).

CORRECTIONS, COURTS AND DIVERSION

This section was prepared in consultation with the Department of Corrections

The use of amphetamine type stimulants is significantly higher amongst those who are imprisoned than among the general population and poly drug use is the norm rather than the exception among this group. Imprisonment provides a unique opportunity for people who may otherwise be difficult to engage in treatment.

The management of prisoners with amphetamine dependency problems can be complicated by pre-existing mental health problems, behaviour problems and poor impulse control that contributed to their offending behaviour and have been exacerbated by the amphetamine use. The propensity to violent and disruptive behaviour can pose a management problem for prison staff.

The following report provides a summary of the results of the ASSIST (Alcohol, Smoking and Substance Involvement Screening Test) screen being undertaken by the Prison Addictions Service Team at Hakea and Bandyup Prisons between March 2006 and February 2007. The ASSIST screen is a brief self report case finding questionnaire which screens for hazardous, harmful and dependent use of all psychoactive substances by offenders prior to entering prison.

Table 7: Lifetime and recent use of amphetamines - National Drug Strategy Household Survey results compared to ASSIT screening results⁵

	Female receivals (Bandyup)	Male receivals (Hakea)	WA population aged 14 years and over
Lifetime use of amphetamines (ever used)	86%	74%	12.2%
Used in the last year	n/a	n/a	4.5%
Used in the last 3 months before entering prison	79%	45%	n/a

Table 8: Frequency of use by offenders: Amphetamines

Gender	Daily/weekly	Less than weekly	Never
Female	68%	16%	16%
Male	34%	37%	29%

Note: Daily/weekly amphetamine use by female offenders is double that of male offenders.

WA Illicit Amphetamine Summit July 2007- Background paper

⁵ Results from the ASSIST screen have been compared where possible to data collected from the National Household Survey 2004 for benchmarking purposes.

Table 9: Risk levels of use: Amphetamines

	High	Moderate	Low
Aboriginal (female)	53%	30%	17%
Non Aboriginal (female)	54%	27%	20%
Aboriginal (male)	15%	27%	58%
Non Aboriginal (male)	25%	36%	38%

Table 10: Injecting history: all drugs

Injecting history	Female receivals	Male receivals	Baseline community levels
Ever injected drugs	81%	60%	2%
Injected in the last 3 months	68%	39%	0.4%

A comparison of results collected from the Department of Corrections PICASO data base between the periods 2004/5 and 2005/6, indicates a dramatic increase in those who report amphetamine use as their principal drug of concern over the 2 year reporting period. ⁶

Table 11: Male principal drug of concern

Male principal drug of concern	2004 - 2005	2005 - 2006
Heroin	68%	45%
Other opioids	15%	24%
Amphetamine	9 %	18%
Alcohol	3%	9%

Table 12: Female principal drug of concern

Female principal drug of concern	2004 - 2005	2005 - 2006
Heroin	36%	22%
Other opioids	39%	29%
Amphetamine	11%	28%
Alcohol	6 %	14%

Amphetamines present a significant strain on the prison resources including health services, counselling and custodial staff. A range of issues have been identified that impact on the management of people coming into prison and their through care back into the community.

⁶ The PICASO data base, which is used by the Prison Addictions Services Team and community AOD agencies, collects data for the National Minimum Data Set for drugs, including details on patient's primary drug of concern.

- No systematic screening tool is currently used state wide to identify those at risk (no regional DCS data available)
- Restricted resources available to provide treatments to amphetamine users while in prison
- Many staff (custodial, health and allied) require training in working with amphetamine users for day to day management purposes
- Lack of electronic patient information sharing systems between agencies provides a significant impediment to effective and co-ordinated through care management.

Prison Health Services current response

A specialist Health Services, Prison Addictions Service Team has been operating within the prison system since 2003. This Team initially provided a range of pharmacotherapy interventions, primarily to opioid using offenders. The Team has expanded its remit to provide a limited range of interventions to amphetamine using offenders. However due to limited resources, these following treatments are mainly restricted to metropolitan prisons:

- Screening: The ASSIST screen is currently being undertaken on new receivals to both Hakea and Bandyup prisons only. Based on the results of the screen, offenders are referred to a range of treatment options based on their identified need.
- Withdrawal treatment: A small number of offenders require a medically supervised withdrawal regime due to the severity of their withdrawal symptoms and associated behaviour. Those offenders are offered a 6 day withdrawal regime which comprises of Diazepam and Olanzapine (mood stabiliser). This treatment is available at all prisons.
- Brief Interventions: All offenders who score moderate or high on the ASSIST screen are offered a one to one brief intervention related to the substance they have been using. This intervention is currently available at Hakea and Bandyup prisons only.
- Referral: Offenders who are identified through the ASSIST screen as using a drug at high risk levels are referred for full AOD assessment and ongoing management if appropriate.
- Co-Morbidity: Currently offenders who are experiencing addiction and mental health problems are jointly managed by the addictions and mental health staff. A new model of care, which is currently being implemented, involves the creation of an integrated addictions and mental health intervention model which will offer a "one stop shop" for these offenders.
- Training Video: A training video on the management of amphetamine affected offenders has been developed for custodial staff by the Prison Addictions Service Team in partnership with custodial staff at Hakea Prison.

Diversion Programs

Drug diversion programs direct drug users into treatment through the coercive capacity of the criminal justice system. They can be effective by increasing the incentives for drug users to identify and address their illicit drug use at the earliest opportunity in their contact with police and/or courts.

The Western Australian Diversion Program (WADP) is part of the Council of Australian Governments' (COAG) Illicit Drug Diversion Initiative (IDDI), which consists of a number of early intervention police and court diversion programs. Referrals to treatment programs are made by police or through the court system.

Police Diversion

At the point of detection, police have the discretion to divert adult offenders into education and treatment rather than charging them through the All Drug Diversion program. This option exists only for adult offenders detected with small quantities of drugs, and offenders are only eligible for participation once.

Police can divert juveniles away from the criminal justice system to the Juvenile Justice Teams (JJTs). Once presenting to the JJT, juveniles can be referred into drug treatment through the Young Person's Opportunity Program (YPOP). Juveniles presenting for court case conferencing can also be referred to YPOP for assessment and treatment.

Diversion within the court system

Adults with underlying drug use problems appearing in magistrates' courts may be eligible for diversion into treatment.

There is a range of programs offered. Eligibility for programs is determined by the severity of the drug use and offending behaviour:

Pre-sentence Opportunity Program (POP) and Indigenous Diversion Program (IDP) are low intensity programs targeting those with less severe drug problems. The program includes education and outpatient counselling over a 6 to 8 week period.

Supervised Treatment Intervention Regime (STIR) targets people with moderate level offending and drug use problems. Programs run for 3-4 months and may include residential and outpatient programs.

Drug Court (adult and children) programs target offenders at the high level of dependency and criminal offending behaviour. Offenders are individually case managed and programs are tailored to meet individual needs. Participants are closely monitored and supervised.

Program Evaluation

Results from a recent evaluation conducted by the Crime Research Centre ⁷ indicate that clients who completed diversion programs had:

- Improved to physical and mental health and relationships;
- Significantly reduced drug use;
- Were less likely to be re-arrested (all offences and drug offences);
- Had a longer median time to first arrest; and
- Were less likely to be imprisoned post-program than those who did not complete the program.

Amphetamine cases in diversion programs

When diversion clients attend treatment, the principal and other drug of concern as stated by the client are determined and recorded. The following table shows the percentage of clients across all programs that nominated amphetamines as the principal and other drug of concern.

WA Diversion Program - Evaluation Framework (POP/STIR/IDP) Final Report. Crime Research Centre, University of Western Australia

Table 13: Percentage of clients across all program, amphetamines principal and other drug of concern

	2003	2004	2005	2006
Principal drug of concern %	43.2%	47.9%	34.6%	27.1%
Other drug of concern %	11.2%	8.6%	5.7%	6.4%

While the percentage of clients reporting amphetamine type stimulants as their principal or other drug of concern has decreased, the overall numbers have increased with the expansion of the programs. In 2003 there were 142 episodes of care, whereas in 2006 there were 642 episodes of care where amphetamine were the principal drug of concern.

MENTAL HEALTH

Amphetamines and mental health problems

Amphetamine treatment is complicated by high rates of mental health co-morbidities. Research by Drug and Alcohol Next Step alcohol and drug treatment services has found that 46% of methamphetamine dependent clients have a previously diagnosed psychological health problem with 30% of these cases requiring psychiatric hospital admission. Depression was also found to be present in 35% of methamphetamine dependent clients.

The proportion of mental health admissions to hospitals due to amphetamines was 1.7% in 2005-06 (448 of 25,855), having peaked at 2% in 2001-02 (580 or 29,274). This represents unique individuals rather than episodes of treatment. In 2006, 1.5% of outpatient episodes in mental health services (representing 560 of 36,890 unique individuals) were due to amphetamines. The number of outpatient episodes presenting at mental health services has substantially increased since 2001.

Current initiatives

Dedicated triage staff are located within each Community Mental Health Team to provide assistance, management and onward referral when required for people presenting with amphetamine related problems. Specialist Mental Health Nurse Liaison positions within Emergency Departments (ED) at Royal Perth Hospital, Bentley Hospital, Fremantle Hospital, Rockingham Hospital, Armadale Hospital, Sir Charles Gairdner Hospital, and Swan Districts Hospital, provide mental health triage and comprehensive assessment services. Emergency liaison positions can facilitate referral to community based and inpatient services and other agencies to ensure on-going care where indicated. Referrals include those to alcohol and other drug services.

The Mental Health Emergency Response Line (MHERL) is a 24-hour, seven day a week emergency response line, staffed by experienced Mental Health professionals. The mental health call centre provides expert and accurate assistance for individuals, their families and or/carers, who are experiencing a mental health crisis situation. If triage staff consider a caller as requiring urgent, emergency response, referrals are made to the appropriate area specific Community Emergency Response Teams (CERT's) to attend and assess the individual in need of assistance.

CERTS exist within the North and South Metropolitan Areas (Joondalup, Nedlands, Swan, Armadale, Fremantle, Bentley, and Peel and Rockingham / Kwinana - Park), and consist of highly trained professionals, who visit the individuals within the community and provide treatment in emergency situations.

Individual Service Responses

North Metropolitan Area Health Service

An outreach worker from the WA Substance Users Association attends the Graylands admission unit once per week, to discuss drug use with newly admitted patients.

South Metropolitan Area Health Service

Two dual diagnosis liaison officers (Park Community Mental Health Service and Fremantle Hospital) provide clinical expertise, training and information on co-morbidity issues for staff.

WA Country Health Services

Specialist mental health nurse liaison positions within Emergency Departments (ED) at Geraldton Hospital and Bunbury Regional Hospital, provide mental health triage and comprehensive assessment services. Emergency department liaison positions can facilitate referral to community based and inpatient services and other agencies to ensure on-going care where indicated. Referrals include those to alcohol and other drug services.

Rurallink telephone response line, staffed by experienced mental health professionals (after hours) provides triage, support, counselling and referral for people with mental health concerns within all WACHS regions. The SouthWest 24 provides a 24/7 telephone service that provides support and counselling for people with mental health concerns within the SouthWest region of WA.

Inpatient units at Bunbury, Albany and Kalgoorlie provide care for people with comorbidity issues. The Southwest Community Drug and Alcohol Service Team provides an inreach service into the Bunbury Acute Psychiatric Unit.

Mental Health and alcohol and drug service partnerships

The State Dual Diagnosis Planning Group has produced a Dual Diagnosis Kit to support formal and robust linkages, reflected in memoranda of understanding, between local mental health and alcohol and drug services. These will assist services to work together to provide services for patients experiencing comorbidities.

A memorandum of understanding exists between Youthreach South, Youthlink, Mission Australia, and Next Step youth services regarding the management of young people with dual diagnosis.

Other formal agreements are in preparation following the dissemination of the 'Dual Diagnosis Resource Kit'.

Training

Many mental health clinicians have expertise and understanding of the clinical issues and management of the co-morbidities of amphetamine use and mental illness. Training for staff on clinical management of mental heath service consumers with concurrent amphetamine use is provided by dual diagnosis liaison officers or through collaborations with the Drug and Alcohol Office such as the key worker training

ACUTE HEALTH

This section was prepared with the assistance of the Dr David McCoubrie, Consultant Emergency Physician, Royal Perth Hospital. Dr McCoubrie, Associate Professor Daniel Fatovich, Dr Suzanne Gray and Dr Frank Daly are the authors of the first paper to be published in Australia on amphetamine related presentations in an Emergency Department. The results of that study are included in this section. Associate Professor Fatovich will be a speaker at the Summit.

Impact on Frontline Workers

The increased rates of psychosis among regular methamphetamine users can have an impact on frontline workers and methamphetamine psychosis presentations can be extremely resource-intensive. The degree of hostility exhibited by some users when they become psychotic presents a crisis situation for both police and health workers, who often have to apprehend these people for their own safety and for the safety of bystanders.

The main occupational health and safety risk associated with the management of psychotic methamphetamine users is the risk of injury while trying to restrain them or being hit by them because of their unruly behaviour. In addition, research has found an elevated risk of disease transmission because of the high level of physical contact with the user while attempting to apprehend or treat them.¹⁰

The Adelaide City Watch House Community Nursing Service is a joint initiative between South Australian and Drug and Alcohol Services South Australia DASSA. Nurses employed by DASSA are located within the Adelaide City Watch House to provide a number of interventions to detainees and to support police in the management of drug users including those affected by amphetamines.

The East Perth Watchhouse similarly employs a nurse on a regular basis to cover busy periods during evening and early morning as a proactive health measure for prisoners.

Management of acute psychostimulant toxicity

Psychostimulant toxicity may occur in regular and experimental users and may vary in severity. Symptoms of psychostimulant toxicity include chest pain, rapidly increasing body temperature, psychotic features (including hallucinations severe paranoia, delusions and thought disorder), severe agitation, uncontrollable behaviour, seizures, severe headaches and breathing difficulties.

Psychostimulant toxicity can be fatal, however deaths are rare. The most recent figures available for WA are for 2003 when there were three deaths where amphetamines were confirmed as an underlying cause of death. In 2002 there were two deaths and in 2001 there were 18 deaths. 8

Management involves accurate assessment, the provision of a safe environment and careful monitoring. Sedation may be required for the emergency management of acute behavioural disturbances and psychotic symptoms.

⁸ The source for this data is the Coronial Database. Data includes overdoses and deaths where the use of psychostimulants contributed to the death.

There are a range of National and WA guidelines for emergency and health care workers and police working with people with amphetamine problems. A list with website links is appended at Appendix 3.

Clinical Guidelines for the Management of Acute Amphetamine Related Problems have been produced for workers dealing with amphetamine users in health settings. This was a joint initiative between the Drug and Alcohol Office and the Department of Health's Mental Health Division. Training for use of the guidelines is being rolled out statewide.

Incidence in emergency department presentations9

The prospective study completed by Gray et al at Royal Perth Hospital in 2005 found that 1.2% of all emergency department presentations are directly related to the health effects of amphetamine use. ⁹This represents 624 (estimate) presentations per year.

Anecdotally, regional and non-tertiary presentation rates are equal to the RPH data. More serious presentations are referred to tertiary emergency departments. Currently metropolitan emergency department adult attendance census is approximately 341,000 patients per year. Extrapolation of the above data would represent an approximate amphetamine presentation burden of 4,090 patients per year across the metropolitan area.

The study found that presentations were of high acuity, resulted in prolonged length of stay in the emergency department and consumed considerable resources.

- Seventy five percent of presentations were male.
- Presentations had a mean age of 28 years (16-55 range)
- Presentation frequency was uniform over each day of the week.
- Presentations over the week end did not rise.
- Half of the people presenting had a history of prior amphetamine presentations.
- One third of presentations occurred between 1800 2400 hours
- 20% of amphetamine related presentations required police involvement at some stage.

Of all presentations 40% were admitted to hospital.

- 50% of these were managed in emergency department observation units.
- 5% of admissions were to the intensive care unit.
- 20% of admissions were to a psychiatric ward.

The burden on the emergency department was significant.

- one third required sedation for agitation
- greater than one third required psychiatric review
- mean time in the emergency department was 6 hours (range 0.5-24 hours)

⁹ Gray, S., Fatovich, D., McCoubrie, D. & Daly, F. *Amphetamine- related presentations to an inner-city tertiary emergency department: a prospective evaluation* Med J Aust. 2007 Apr 2;186(7):336-9

Treatment

Benzodiazepines are the accepted first line treatment for amphetamine induced tachycardia, hypertension, mild hyperthermia, and agitation associated with amphetamine toxicity. For a patient with amphetamine related psychosis early administration of atypical anti-psychotic agents is associated with improved outcome

A team approach including security, nursing, medical, psychiatric, and drug and alcohol staff is vital to staff and patient safety and appropriate case management. Timely drug and alcohol review should be available/offered to all amphetamine related presentations during their emergency department stay.

Currently initial management of amphetamine related presentations are managed by emergency department specialists and/or advanced trainees in emergency medicine. Timely psychiatric review is occurring. Specialist toxicologist review is available at the bed side at Sir Charles Gardiner Hospital and RPH. Treatment advice is available to other institutions via telephone consultation. Input from specialist drug and alcohol staff is very limited.

Significant Opportunities for WA Research

Ongoing prevalence and emergency department burden data is currently not being collected. Resourcing including a clinically experienced project officer to oversee data collection and collation would be required for this to occur.

Possible areas for future research:

- Impact of provision of specialist alcohol and drug services within emergency departments on amphetamine presentation rates.
- Impact of provision of specialist alcohol and drug services within emergency departments on uptake of treatment
- Clinical research into acute and chronic health effects.

Appropriate funding of research infrastructure would be necessary to take advantage of the above stated valuable research priorities.

CHILD PROTECTION ISSUES

This section was prepared in consultation with the Department for Child Protection

Many people who have problematic alcohol and other drug (AOD) issues have dependent children in their care. In some cases, but not all, the quality of parenting is impaired, putting the children at risk of harm or neglect.

Agencies working with families need to be aware of the impact of alcohol and drug use on parenting. While having children can be a prime motivator for some people in changing their alcohol and other drug-taking behaviours, the challenges of parenting can also contribute to the maintenance of drug use and can impact upon the likelihood and the severity of any relapse. Parenting issues can also affect a client's engagement in treatment.

There is clear evidence that drug and alcohol use by parents or guardians is a significant factor in many circumstances where a child concern is made known to the Department for Child Protection. A study conducted by the then Department for Community Development (DCD) in 2004 ²⁴ explored drug and alcohol use as a factor in applications to the Children's Court for protection orders and found that parental drug and alcohol use was a contributing factor to the protection application in 57% of the 100 legal cases studied. Further details are provided under 'research findings' in this document.

Where alcohol and drug use of a parent/care giver impacts on the wellbeing of a child there is a need for the agencies involved to take a comprehensive view of the needs of the whole family and not focus only on the individual with the substance problem. Where the Department for Child Protection is involved because of child protection concerns then it is essential that there is a high degree of coordination of services between the family and all involved agencies.

Alcohol and drug issues in care and protection applications

Research conducted by the Department for Community Development (DCD) in 2001 showed that drug and alcohol use was a contributing factor to 71% of care and protection application cases in the year 2000. ⁴⁰

A further study in 2004 (Parental Drug and Alcohol Use as a Contributing Factor in Care and Protection Applications 2003) found:

- Drug and alcohol use was found to be a contributing factor in 57% the 100 legal cases studied.
- Neglect was the most common of all reasons for the care and protection application with drug and alcohol use the next most common contributing factor.
- Other common reasons (i.e. with a frequency of 10% or more) were physical abuse (41%); domestic violence (38%); emotional abuse (29%); sexual abuse (14%); psychiatric illness (14%); homelessness (12%) and psychological problems (11%).
- Drug and alcohol use was the main reason in 23% of the 60 cases where a single main reason for an application could be determined.
- 44% of the 191 respondents to care and protection applications were drug and alcohol 'users'.

• Of the DCP respondents known to be 'users' (n=85), 46% were using alcohol, 42% were using psychostimulants and 36% were using cannabis. One in four of the respondents were using opioids. Many (54%) were poly drug users.

Context of the findings

The findings of the DCP study were consistent with national and international research in terms of the damaging effect of drug and alcohol misuse on individuals and families. Drug use has a significant negative impact on the ability of parents to provide safe care for children and the outcome can see them being harmed and entering out-of-home care. People aged between 18 and 35 are the group most likely experience problems associated with illicit drug use and also the most likely to bear children.

The DCP study also showed that drug and alcohol use rarely occurs in isolation but these families face many complex problems. Alcohol and drug misuse is strongly linked to neglect and domestic violence, physical abuse and homelessness or a transient lifestyle

The link between social disadvantage and drug use (particularly alcohol) is most evident among Aboriginal and Torres Strait Islanders. *The National Drug Strategy Household Survey Urban Aboriginal and Torres Strait Islander Peoples Supplement*, 1994 shows that for every type of drug considered, this group has higher rates of 'risky' use than the rest of the Australian population. This translates into higher rates of harm, in particular, deaths caused by alcohol and tobacco. Aboriginal people are over-represented in child protection cases.

Use of alcohol and drug services by respondents

Families in the 2004 study had received services from a range of agencies, including alcohol and drug services: Details of drug rehabilitation service contact were found for 51 out of the 85 respondent 'users'. For three quarters of these 51 'users', drug rehabilitation was made part of the wardship order or agreed to by them during the legal process (39% and 37% respectively). Almost one in four (24%) had attended drug rehabilitation services prior to the care and protection application. This data supports the important role alcohol and drug services can play in child protection cases.

Follow up of the 2004 study

A follow-up to the 2004 study has recently been completed. While the 2004 study provided information in terms of the reasons for the protection application and details of family characteristics, family history and drug and alcohol use, it did not explore the outcomes for the children (other than wardship details). A series of follow-ups of the 175 children in the study provided further information on the longer term impact of both parental drug and alcohol use and the other complex issues facing the families. The overall aim of the follow-up study was to examine whether there were differences in the patterns of experiences in care dependent on the reasons the child/ren entered care. The research showed that where parental drug and alcohol use was a contributing factor to the protection application (in comparison to where it was not) there is:

- A quicker Court outcome (more orders granted within 12 months of apprehension);
- Children with a greater number of placements; and
- More children aged less than 1 year at apprehension.

This study also highlighted the co-existence of parental drug and alcohol use and domestic violence. For 16 children who were placed on orders until they are 18 years of age, both parental drug and alcohol use and domestic violence were contributing factors.

Conclusion

The DCP studies confirm what the sector has known for some time, which is that drug and alcohol use has a significant negative impact on the ability of parents to provide safe care for children and an outcome of this is the entry of children into out-of-home care. This poses particular challenges for service providers, not only because of the complex nature of addiction but also the many other issues with which these families are struggling. Clearly these are not cases that DCP or any agency can deal with alone. Close linkages between AOD services, child, parenting, family support services and child protection services are required to provide effective interventions.

Current initiatives

The *Impact of Parental Drug and Alcohol Use on Babies and Infants Working Party* has been formed to improve the coordination of relevant services which address parental alcohol and drug use, and to provide a focus for the enhancement and further development of services.

The working party will identify best practice for service provision and support its implementation through six key areas:

- An agreed policy framework and principles
- Workforce development
- Case coordination and referral pathways
- Interagency protocols
- Improvement of internal systems
- Service development

The membership is representative of:

- The Drug and Alcohol Office (DAO)
- King Edward Memorial Hospital
- Child and Adolescent Health Service, WA Health
- Child and maternal clinical network, WA Health
- Department for Child Protection
- Women's and Infants Research Foundation KEMH
- Wanslea family services
- Cyrenian House
- Women's Health Services
- Office of Aboriginal Health, Department of Health.

Concurrently, the Drug and Alcohol Office and the Department for Child Protection are progressing the development of formal and robust linkages between local services and building the capacity of these services to work more effectively with these families.

ABORIGINAL ISSUES

This section has been completed in consultation with the Aboriginal Programs area at the Drug and Alcohol Office.

To ensure broad and appropriate consultation with Aboriginal people and communities, consultations were conducted as part of the Aboriginal Alcohol and Drug Forum in May 2007.

The Drug and Alcohol Office, funded through the Commonwealth Department of Health and Aging, has recently completed a training video for Aboriginal health workers about amphetamines. As a national resource, the production crew travelled around Australia and consulted broadly with Aboriginal people in a range of urban, regional and remote settings. The information from that consultative process is included in this section.

Feedback of the Aboriginal Consultation

Each year the Drug and Alcohol Office (and this year in partnership with the WA Network of Alcohol and Drug Agencies) organises a forum for Aboriginal alcohol and drug workers. This forum provides a valuable opportunity to exchange information and update workers on new initiatives. Participants are from across the state and represent agencies located in metropolitan, regional and remote communities. This gathering of Aboriginal workers presented a unique opportunity for consultation to occur about how amphetamines were impacting on their communities and workplaces. As well as being provided to the WA Illicit Amphetamine Summit the feedback from the consultation will be used in the development of the National Amphetamine Strategy.

A detailed transcript of the outcomes of the consultation forum is attached at Appendix 4. Mrs Wendy Casey, Principal Adviser Drug and Alcohol Office, will report on the outcomes of the consultation to the summit.

Key feedback from the Aboriginal consultation included:

- In the development and implementation of amphetamine prevention, treatment and law enforcement strategies, seek to strengthen Aboriginal culture, aboriginal families and build community capacity.
- Incorporate harm reduction into all aspects of prevention, treatment and law enforcement to educate amphetamine users of strategies to reduce harm and importance of preventing the transmission of blood borne viruses.
- Focus on family and group interventions to address drug and alcohol use in a holistic manor within appropriate settings, rather then conventional western approaches which can deter Aboriginal people from accessing assistance.
- Develop specific measures to support Aboriginal grandparents and other carers who
 may be looking after children as a result of family drug and alcohol problems.
- Improve early detection and management of co-existing mental health and drug and alcohol problems through improved coordination between drug and alcohol, mental health and acute health services.

- Enhancement of workforce training programs to develop the drug related and Aboriginal cultural knowledge/skills of drug and alcohol workers, mental & acute health staff, police, child protection staff, corrections workers and magistrates.
- Improve shared case management and transparency between drug and alcohol, corrections and child safety agencies to improve continuity of care and reduce structural barriers to clients with drug and alcohol problems accessing assistance.
- Promote, enhance and expand drug diversion programs for Aboriginal people in coordination with local Aboriginal communities.
- Expand justice programs that incorporate aspects of Aboriginal culture and law in hearing, sentencing and paroling Aboriginal offenders.
- Need to develop youth specific drug and alcohol treatment programs that are tailored to the needs of children and adolescents and are provided in a range of settings.

Use of amphetamines in Aboriginal communities

While recent West Australian and national survey results have been encouraging, showing the rate of use is declining, these improvements have not occurred in the Aboriginal community.

The 2004 NDSHS survey showed 15% of population had used an illicit drug in the previous 12 months compared to 28% for Aboriginal people. 10% of Aboriginal people used an illicit drug other than cannabis compared to 8% of other Australians.

The rates of recent amphetamine use (in the past 12 months) among Aboriginal people are more than twice that of the non-Aboriginal population. 3.2% of total national population had used amphetamines in the previous 12 months compared to 7% for Aboriginal people. 9

A positive indicator, however, is the significant number of Aboriginal people accessing treatment in Western Australia for amphetamine related problems. The percentage and number of Aboriginal people attending treatment for amphetamines has been on a steady increase from a low of 11% (38) in 1999 to a high of 16.4% (219) in 2005. 2006 was slightly lower at 15.6% (212).

Table 14: Number of treatment episodes for amphetamines for Aboriginal people

Year	All treatment episodes for Aboriginal people	No. amphetamine treatment episodes for Aboriginal people
1999	345	38 (11.0%)
2000	609	63 (10.3%)
2001	1108	110 (9.9%)
2002	1076	123 (11.4%)
2003	1122	175 (15.6%)
2004	1318	171 (12.9%)
2005	1331	219 (16.4%)
2006	1346	212 (15.6%)

The impact of amphetamine related problems on Aboriginal communities

The problems associated with amphetamine use can be exacerbated in Aboriginal communities that are already stressed and have limited resources and capacity. Specifically these include:

- Aggressive and violent behaviour lack of services to deal with extreme behaviours with often only Police available.
- Impact on parenting and child protection issues.
- Financial- Funds leaving the community to pay for drugs and money being spent on drugs that is better spent on things for the family. This is especially a problem in families and communities that are already suffering from financial hardship.
- Risks associated with injecting lack of access to clean equipment. Recent data indicates increasing rates of hepatitis C among Aboriginal people in WA. This may be as a result of factors such as increasing injecting drug use in Aboriginal communities, overrepresentation of Aboriginal people in adult and juvenile correctional settings, and poor access to services including educational, prevention and treatment services.¹⁰ In 2005, the age-standardised rate (ASR) of newly acquired hepatitis C notifications for Aboriginal people was 39 per 100,000 population compared to 4 per 100,000 population for non-Aboriginal people (Rate Ratio = 11:1)
- Reduction in participation in sport, work, family life and cultural activities.
- Increase in criminal behaviour.

Specific initiatives for Aboriginal people

Dedicated Aboriginal beds with Aboriginal staff have been established in the Drug and Alcohol Office Next Step inpatient detoxification service (four beds) and the Cyrenian House residential rehabilitation service (six beds) in the North Metropolitan area to improve access to culturally secure drug and alcohol treatment programs for Aboriginal

¹⁰ The source of this data is the Australian Government Department of Health and Ageing 2005, *National Hepatitis C Strategy 2005- 2008*, Commonwealth of Australia, Canberra.

people. The development of dedicated Aboriginal beds will continue with the addition of a further six rehabilitation beds at Palmerston Farm in the South Metropolitan area.

All Drug and Alcohol Office Next Step and funded non government programs will be supported to comply with the WA Health Aboriginal Cultural Respect Framework.

The Indigenous National Alcohol and other Drugs Workforce Development Program, funded by the Department of Health and Ageing, helps build the capacity of partner jurisdictions to deliver nationally-recognised alcohol and drug training to the Western Australian Aboriginal alcohol and drug workforce as well as support the use of culturally secure evidence based practice.

The development of culturally secure resources including the "speed" video on amphetamines.

Summary of consultations undertaken in WA as part of the production of the "speed" video.

Responses were diverse and reflected the individual's own experience of the impact of amphetamine use. As a result, differing views occurred even within the same community. Reports on the level of use varied from "not here yet" to "causing a lot of concern, but not as much as alcohol and gunja". The impact of speed on families and communities was dependant on the degree of exposure that community had. Speed was associated with negative outcomes across all domains - destroying families and communities through family breakdowns, financial costs, physical and psychological harms, increase in criminal activities and violence, alienation and loss of respect for elders and cultural breakdown.

It was suggested that there was a lack of knowledge about speed and its effects. Because of the high levels of poly-drug use, amphetamines were just seen as part of the mix.

There was general disapproval and concern that the 'young' people using were not aware of the long term effects. There was strong disapproval of intravenous drug use. Where there was an awareness of speed people expressed feeling powerless - couldn't do anything to stop supply - knew who dealers were but feared retribution.

People were keen to see prevention strategies put in place that would include information about amphetamines and raise community awareness of the problems. People wanted localised messages in language where possible and strongly supported by visual materials, which were informative and solution focused. Where speed was present and presenting problems in the community it was considered people needed to understand how to manage and support family members who were using, but also keep the rest of the family safe.

APPENDIX 1: TREATMENT OPTIONS FOR AMPHETAMINE DEPENDENCE AND ABUSE AND THEIR EFFICACY BASED ON AVAILABLE EVIDENCE

Current best practice

Current best practice remains the psychosocial treatment approach developed by Baker and colleagues³³. Randomised controlled trials of brief interventions comprising motivational interviewing and cognitive-behaviour therapy (CBT) showed an increased likelihood of abstinence from amphetamines and a reduction in levels of depression. However, CBT requires the ability to focus, hold, and sustain attention and to learn new coping skills ³⁴. There is evidence that these functions are impaired in stimulant users and other approaches should be investigated. The University of Western Australia and the Drug and Alcohol Office are currently conducting two trials examining cognitive deficits and their relationship to treatment outcomes in amphetamine users. Contact person - Kyle Dyer (kdyer@meddent.uwa.edu.au).

Psycho-social treatment

Recent studies have provided evidence for contingency management (CM) as an intervention for methamphetamine dependence. Contingency management in drug treatment is based on the principle that if a good behaviour is rewarded, it is more likely to be repeated. Contingency management employs a system of recognition and positive rewards such as vouchers or privileges such as take home medication. Contingency management principles have been used successfully in a variety of treatments setting including drug free, residential and methadone maintenance. While there is evidence supporting the use of both contingency management (CM) and cognitive-behavioural therapy (CBT) in the treatment of stimulant users, a recent study compared these two interventions directly. CM produced better retention and lower rates of stimulant use during the 16-week treatment period but outcomes were comparable to CBT at the 12 months follow up.³³

Acceptance and Commitment Therapy was compared to treatment as usual (Relapse Prevention Skills Training). ⁴¹ There were no differences in outcomes and both groups significantly reduced their self-reported amphetamine use and related negative consequences.

A study of Narrative Therapy (five-weeks) in combination with mirtazapine (14 days) showed significant improvement in methamphetamine withdrawal symptoms, dependence, methamphetamine use and depression. 42

The Matrix model utilises an approach based on cognitive behavioural therapy, stimulant education, family education, 12-step programs and positive reinforcement for behaviour change and treatment compliance. Evaluation showed that treatment retention, clinic attendance, incidence and duration of methamphetamine abstinence (confirmed by urinalysis), was significantly greater in those individuals assigned to receive treatment using the Matrix model. However, while gains in terms of improvements in substance use and psychosocial functioning remained, group differences did not persist at six months follow-up. ⁴³

The phase III Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) project will investigate the efficacy of a brief intervention to reduce ASSIST scores in people who score in the moderate risk range for either cannabis, cocaine, amphetamine-type stimulants or opioids. This project aims to develop a manual of patient and clinician resources incorporating instructions for administering the ASSIST and brief intervention,

self-help materials on specific drug information and generic self-help strategies to reduce drug use, information on injecting risk and feedback card on current drug use. WHO/Drug and Alcohol Services South Australia (DASSA). Due for completion in 2007. Contact person - Rachel Humeniuk Phone (08) 8274 3388.

Pharmacotherapies

Acute management

Evaluation of a sedation protocol to assist with client management and transportation. In this trial, midazolam, a fast-acting benzodiazepine with sedative and amnesic properties is administered by paramedics with police assistance. 44

Withdrawal and short term management

A recent randomised controlled trial identified methylphenidate (Ritalin®) as an effective treatment for reducing amphetamine use in amphetamine-dependent outpatients. ⁴⁵ In this study, amphetamine-dependent individuals were randomly assigned to receive aripiprazole, methylphenidate or placebo for 20 weeks. Patients allocated to aripiprazole had significantly more amphetamine-positive urine samples than patients in the placebo group whereas patients who received methylphenidate had significantly fewer amphetamine-positive urine samples than patients who had received placebo. While this study is the first to show a benefit from a pharmacotherapeutic treatment, it is worth noting that the positive effects of the study medication was not evident until the eighteenth week of treatment.

Trials of baclofen and gabapentin ⁴⁶ sertraline ⁴⁷ and ondansetron ⁴⁸ have eliminated these medications as potential pharmacotherapies for amphetamine dependence treatment.

The safety and efficacy of modafinil, bupropion, mirtazapine and naltrexone in methamphetamine withdrawal and dependence have been tested in pilot studies. $^{49-52}$ While all of these medications were well tolerated, modafinil showed the greatest promise of efficacy and is now the subject of trials in South Australia, Victoria and NSW. 53

A study being conducted by the Sydney South West Area Health Service aims to identify the safety and acceptability of monoamine precursors (tyrosine, phenylalanine, and 5-hydroxytryptophan) in the management of psychostimulant withdrawal, engagement and retention in treatment when combined with a cognitive behavioural intervention. The significance of the project lies in assessing the clinical utility of a non-abusable, biologically plausible, safe and inexpensive alternative to prescription psychotropic medications for the management of psychostimulant withdrawal. Sydney South West Area Health Service. Due for completion in 2007. Contact person. Adam Winstock Phone (02) 9378 1316.

A new scale for the measurement of amphetamine withdrawal symptoms has recently been developed. The Amphetamine Cessation Symptom Assessment (ACSA) is a 16-item self-report scale designed to be completed once daily. The ACSA could play an important role in providing clinical outcome data, particularly in outcome evaluations of new treatment protocols. ²¹

Psychostimulant withdrawal: Natural history and options for intervention. This study aims to understand the natural history of psychostimulant use, dependence and withdrawal, focusing on pathways to dependence and experiences of treatment; to develop withdrawal

protocol/s for the various psychostimulants and to examine the role and efficacy of, and to develop guidelines for, psychosocial interventions for psychostimulant users in withdrawal. In addition it will examine the feasibility of using modafinil and dexamphetamine during withdrawal as an aid for withdrawal and entry into further treatment. The study uses a mixed methodology of literature review, client and key informant interviews and case studies. This project is due for completion in December 2006. http://www.turningpoint.org.au/research/si_research_cr_proj.htm

Long term substitution therapy

Although there have been a number of positive reports of dexamphetamine substitution treatment, a recent controlled study from the UK (unpublished) found no advantage of dexamphetamine substitution treatment over treatment as usual (psychosocial program).

A controlled trial of dexamphetamine substitution treatment in amphetamine dependence is currently underway in South Australia and interim results have shown a trend towards greater reductions in amphetamine use and better treatment retention for the dexamphetamine group. ³⁵

A trial of assertive community care treatment for methylamphetamine-induced psychosis. This recently completed project compared the efficacy of an assertive community care program with routine clinical care as treatment for patients who have been discharged from hospital after an episode of methylamphetamine psychosis. Both groups had reduced methamphetamine use at 6 month follow-up. ⁵⁴

APPENDIX 2: CURRENT RESEARCH PROJECTS IN AUSTRALIA

Brief descriptions of current Australian amphetamine-related studies can be found at http://www.radar.org.au/browseNodes.aspx.

RADAR Register of Alcohol and Drug Research in Australia - Current research relevant to amphetamines

Undefined

The Information and education needs of psychostimulant drug users in NSW

Alcohol and other Drugs Council of Australia

Psychostimulants Scoping Project

Australian Institute of Criminology

• Drug Use Monitoring in Australia (DUMA)

Australian National University. Centre for Mental Health Research

• Mental health, cognition and well-being among MDMA and/or amphetamine users: results from a community sample of young adults.

Drug and Alcohol Services South Australia (DASSA)

- Designer Drug Early Warning Network (D2EWS)
- Functional use of amphetamine-type stimulants amongst high-risk occupational groups
- WHO ASSIST Phase III Project: a randomized controlled trial of the effectiveness of a brief intervention linked to ASSIST scores

Griffith University

The impact of amphetamine use on psychotic symptoms in an inpatient sample

National Centre for Education and Training on Addiction

 The Attitudes project - health professionals' attitudes towards licit and illicit drug users: a training resource

National Drug and Alcohol Research Centre

- Adolescents' beliefs about psychostimulants and psychostimulant drug education
- Demographics, circumstances, toxicology and major organ pathology of psychostimulant-related deaths in Australia
- Methamphetamine Treatment Cohort Study Establishment of a multi-site study
- Technical co-operation with UNODC on improving information on amphetamine-type stimulants in East Asia and the Pacific

• The characteristics of amphetamine treatment clients

National Drug Research Institute

- Development of the National Amphetamine-Type Strategy 2007-2009
- Illicit Drug Reporting System (IDRS)
- Improving understanding of psychostimulant-related harms in Australia: an integrated ethno-epidemiological approach.
- The harms associated with concurrent alcohol and party drug use amongst young people: Risk environments and the implications for prevention.

Swinburne University of Technology. Centre for Neuropsychology. Drugs and Driving Research Unit

• The relationship between illicit drug use, driving performance, neuropsychological performance and sobriety testing

Swinburne University of Technology. Drugs and Driving Research Unit

 The Acute effects of d-amphetamine and methamphetamine on simulated driving performance, cognitive functioning, brain activity, and the standardised field sobriety tests

Turning Point Alcohol & Drug Centre

- Amphetamine Clinical Treatment Guidelines
- Psychostimulant withdrawal: natural history and options for intervention
- Psychostimulants information and education resources
- Victorian Psychostimulant Monitoring Project (PMP)
- Assessment of drug treatments and recommendations for improved responses for amphetamine-type substance use and

APPENDIX 3: THE MAIN AUSTRALIAN PSYCHOSTIMULANT/AMPHETAMINE GUIDELINES

WA Guidelines

Clinical Guidelines: Management of Acute Amphetamine Related Problems (published

under the auspices of the State Dual Diagnosis Planning Group)

Available on the following websites:

Drug and Alcohol Office: http://www.dao.health.wa.gov.au
Office of Mental Health: http://www.mental.health.wa/gov.au

Western Australian Drugs and Therapeutics Committee: http://www.watag.org.au

Psychostimulant Information for Health Care Workers.

Available on the Drug and Alcohol Office website: http://www.dao.health.wa.gov.au

National Guidelines

Management of Patients with Psychostimulant Toxicity: Guidelines for Emergency Departments. Australian Government Department of Health and Aging

Management of Patients with Psychostimulant Use Problems: Guidelines for General Practitioners. Australian Government Department of Health and Aging

Psychostimulants - Management of Acute Behavioural Problems: Guidelines for Police Services. Australian Government Department of Health and Aging

Management of Patients with Psychostimulant Toxicity: Guidelines for Ambulance Services. Australian Government Department of Health and Aging These publications are available on the National Drug Strategy publications page at http://www.nationaldrugstrategy.gov.au/internet/drugstrategy/publishing.nsf/Content/publications-illicit

APPENDIX 4: ABORIGINAL FORUM FEEDBACK

1. In the development and implementation of amphetamine prevention, treatment and law enforcement strategies, seek to strengthen aboriginal culture, aboriginal families and build community capacity.

Strengthening Aboriginal culture is a protective factor in preventing drug and alcohol misuse as it helps to build resilience, especially amongst Aboriginal children and adolescents. Drug and alcohol programs which seek to educate Aboriginal people about pre-colonisation life, the impact of colonisation and the current difficulties faced by Aboriginal people in relation to issues such as oppression and trans-generational trauma, build understanding of the historical determinants of substance use. Activities such as yarning circles and bush/mens' camps help to develop cultural skills among participants, build resilience, self-esteem and respect for elders.

Programs also need to focus on the underlying social determinants of drug and alcohol use as well as historical/cultural factors. These determinants include lack of education, employment, inadequate housing and inactivity. Utilising Aboriginal specific promotions on regional media like GWN or Yamatje news can be effective prevention strategies as well as help to counter the continual negative portrayal of Aboriginal people in the media.

2. Incorporate harm reduction into all aspects of prevention, treatment and law enforcement to educate amphetamine users of strategies to reduce harm and importance of preventing the transmission of blood borne viruses.

There is a need for harm reduction programs specifically relating to injecting drug use amongst Aboriginal people which include culturally appropriate messages as to how to use more safely, risks of overdose and unsafe sex as well as how to look after friends who are also using. There is also a need to link treatment practice with Blood Borne Virus and Sexually Transmitted Disease (STD) prevention and expand the Needle and Syringe program in rural and remote areas focussing on Aboriginal injecting drug users.

Having appropriate outlets for needle and syringe programs rather than hospital settings is also an important strategy as they are visible to the broader public and Aboriginal people are not as likely to access them. The rise of amphetamine also increases the risk of dental health problems amongst Aboriginal people. Therefore, there is likely to be an increased need for appropriate dental services for Aboriginal people in particular in rural and remote areas.

3. Focus on family and group interventions to address drug and alcohol use in a holistic manner within appropriate settings, rather then conventional western approaches which can deter Aboriginal people from accessing assistance.

Utilising family centred approaches to address drug and alcohol problems can act to strengthen Aboriginal families through: the development of parenting skills such as managing behaviour and money, promoting men as positive role models, active parent involvement in schooling/education and developing cooking and nutrition skills. These strategies seek to address the environmental factors that impact on drug and alcohol use. Family interventions provided in an outreach capacity also form primary drug prevention strategies for the children of these parents.

4. Develop specific measures to support Aboriginal grandparents and other carers who may be looking after children as a result of family drug and alcohol problems.

Amphetamines use is placing a considerable burden on grandparents and other carers who may be looking after the children/dependents of drug using parents. Many grandparents in the Aboriginal community are caring for children without any financial assistance and are becoming sick, depressed and distressed as a result trying to manage with out external support.

There is a need to support grandparents/carers groups at the local level through financial support, support and advice when dealing with the Department for Child Protection, respite support and assistance when getting children assessed for health problems such as Attention Deficit-Hyperactivity Disorder (ADHD) and Foetal Alcohol Spectrum Disorder (FASD) type problems.

5. Improve early detection and management of co-existing mental health and drug and alcohol problems through improved coordination between drug and alcohol, mental health and acute health services.

There is a need for alcohol and drug services to work closer with mental health services in the early intervention for Aboriginal people with co-existing drug and alcohol and mental health issues. At present, mental health do not support people until they become extremely unwell threatening self-harm or harm to others. Community drug services and other Aboriginal organisations bear a considerable burden with clients who have mental health problems but who are not deemed to be critical enough for mental health interventions.

There is also a growing perception amongst community drug services that mental health services are not effectively assessing Aboriginal people who have co-existing drug and mental health problems and are increasingly dismissing psychosis displayed by clients as purely being drug related. There are also reports that the cost of pharmacotherapies for clients with co-existing mental health and drug and alcohol problems may be encouraging clients to 'self-medicate' with illicit drugs which can be more easily accessible and affordable.

Formal arrangements between local drug and alcohol and mental health services need to be made to ensure that clients with both mental health and drug and alcohol problems are effectively case-managed. There is also a need for more Aboriginal mental health workers within the WA Health System who can work with Aboriginal drug and alcohol workers to effectively assist these clients with co-existing problems and improve information exchange between the two agencies.

6. Enhancement of workforce training programs to develop the drug related and aboriginal cultural knowledge/skills of drug and alcohol workers, mental & acute health staff, police, child protection staff, corrections workers and magistrates.

There is a need to continue to foster, develop and expand the Aboriginal drug and alcohol workforce through continuing training, peer support and professional development to ensure that they are able to meet the growing demand for culturally appropriate drug and alcohol services for Aboriginal people. This development should also seek to develop the skills of drug and alcohol workers in relation to mental health screening and assessment.

In terms of mainstream services, there is a need to develop the drug and alcohol and cultural competence of acute health staff, general practitioners and mental health

professionals on an ongoing basis due to staff turnover. There is also a need for more cultural training for police officers especially new recruits to the force.

7. Improve shared case management and transparency between drug and alcohol, corrections and child safety agencies to improve continuity of care and reduce structural barriers to clients with drug and alcohol problems accessing assistance.

The perception in the community is that there are often confusing policies and processes regarding the removal of children from Aboriginal families due to child safety concerns. The relationship between drug and alcohol services and child safety agencies needs to be improved to ensure that these policies and procedures are widely understood in the community and across agencies, are transparent and way up community concerns relating to the 'stolen generation' with the safety and protection of children.

There is a real need for child safety treatment plans to match with drug and alcohol treatment plans and more consultation is required between the two agencies to ensure clear expectations for families affected. Department for Child Protection staff needs to be aware of what support to tap into when mandating treatment for clients especially given the high turnover of staff within the agency.

8. Promote, enhance and expand drug diversion programs for Aboriginal people in coordination with local Aboriginal communities.

Gaining support from and promoting the effectiveness of drug diversion programs to magistrates and police throughout the state, to ensure they understand the benefits, is a key strategy to address drug and alcohol problems given the high success of diversion programs currently operating. In addressing these problems utilising a diversion approach there is a need to make it easier for amphetamine use to be tackled by drug diversion program, at present it is difficult to sort out peoples infringing issues when they are involved in amphetamine related crimes.

9. Expand justice programs that incorporate aspects of Aboriginal culture and law in hearing, sentencing and paroling Aboriginal offenders.

Promoting the use of Aboriginal courts and incorporation of aspects of Aboriginal law into mainstream legal practices will ensure that outcomes are more appropriate for aboriginal people as well as tackling some of the underlying determinants of drug use by helping to restore the role/stature of elders and males within aboriginal communities.

The expansion of community based policing initiatives and increased support for drug and alcohol programs for Aboriginal people in prison will also benefit support broader initiatives to address drug and alcohol misuse. Prisoners also require additional support prior to their release with things such as Centrelink payments, Homeswest housing and access to drug rehabilitation/treatment services immediately post incarceration or whilst on parole.

10. Need to develop youth specific drug and alcohol treatment programs that are tailored to the needs of children and adolescents and are provided in a range of settings.

There are currently limited drug and alcohol services through the state that are specifically focussed on youth and adolescents. Programs which seek to engage young people using peer support or mentor programs both within schools and in the community assist to develop the skills of at-risk children/youth and build resilience. There is also a need to expand youth and recreation programs outside of school settings which incorporate

the p	romotion ot access	of harm treatmen	reduction t in a trad	and suici itional set	de preventior ting.	ı messages	as mos	t at-risk	youth

REFERENCES

- 1. ACC. *Illicit Drug Data Report 2004-05.* Canberra: Australian Crime Commission; 2006.
- 2. Topp L, Degenhardt L, Kaye S, Darke S. The emergence of potent forms of methamphetamine in Sydney, Australia: a case study of the IDRS as a strategic early warning system. *Drug and Alcohol Review.* 2002;21:341-348.
- 3. Degenhardt L, Roxburgh A. 2005 Cocaine and methamphetamine related druginduced deaths in Australia. Sydney: National Drug and Alcohol Research Centre; 2007.
- 4. Jenner L, McKetin R. Prevalence and patterns of psychostimulant use. In: Baker A, Lee NK, Jenner L, eds. *Models of intervention and care for psychostimulant users, 2nd Edition*. Canberra: Australian Government Department of Health and Ageing; 2004:13-35.
- 5. McKetin R, Kelly E, McLaren J. The relationship between crystalline methamphetamine use and methamphetamine dependence. *Drug Alcohol Depend.* Dec 1 2006;85(3):198-204.
- 6. Perez-Reyes M, White WR, McDonald SA, et al. Clinical effects of daily methamphetamine administration. *Clinical Neuropharmacology*. Aug 1991;14(4):352-358.
- 7. Baker A, Lee NK, Jenner L, eds. *Models of intervention and care for psychostimulant users, 2nd Edition.* Canberra: Australian Government Department of Health and Ageing; 2004. National Drug Strategy Monograph Series No. 51.
- 8. Australian Institute of Health and Welfare. *National Drug Strategy Household Survey 2004: Detailed Findings.* Canberra: Australian Institute of Health and Welfare; 2005. AIHW Drug Statistics Series No.16.
- 9. Gray SD, Fatovich DM, McCoubrie DL, Daly FF. Amphetamine-related presentations to an inner-city tertiary emergency department: a prospective evaluation. *Med J Aust.* Apr 2 2007;186(7):336-339.
- 10. McKetin R, McLaren J, Kelly E. *The Sydney methamphetamine market: Patterns of supply, use, personal harms and social consequences. NDLERF Monograph Series No. 13.* Commonwealth of Australia: National Drug Law Enforcement Research Fund. National Drug and Alcohol Research Centre, University of New South Wales; 2005.
- 11. Volkow ND, Chang L, Wang GJ, et al. Association of dopamine transporter reduction with psychomotor impairment in methamphetamine abusers. *American Journal of Psychiatry*. Mar 2001;158(3):377-382.
- 12. Volkow ND, Chang L, Wang GJ, et al. Loss of dopamine transporters in methamphetamine abusers recovers with protracted abstinence. *Journal of Neuroscience*. 2001;Dec 1;21(23):9414-9418.
- 13. Kosten TR, Markou A, Koob GF. Depression and stimulant dependence: neurobiology and pharmacotherapy. *Journal of Nervous and Mental Disease*. Dec 1998;186(12):737-745.
- 14. Cantwell B, McBride AJ. Self detoxication by amphetamine dependent patients: a pilot study. *Drug and Alcohol Dependence*. Jan 1 1998;49(2):157-163.
- 15. Jenner L, Saunders JB. Psychostimulant withdrawal and detoxification. In: Baker A, Lee NK, Jenner L, eds. *Models of intervention and care for psychostimulant users, 2nd Edition*. Canberra: Australian Government Department of Health and Ageing; 2004:102-119.
- 16. Zweben JE, Cohen JB, Christian D, et al. Psychiatric symptoms in methamphetamine users. *American Journal of Addiction*. Mar-Apr 2004;13(2):181-190
- 17. Newton TF, Kalechstein AD, Duran S, Vansluis N, Ling W. Methamphetamine Abstinence Syndrome: Preliminary Findings. *The American Journal on Addictions*. 2004;13:248-255.

- 18. London ED, Simon SL, Berman SM, et al. Mood disturbances and regional cerebral metabolic abnormalities in recently abstinent methamphetamine abusers. *Archives of General Psychiatry*. Jan 2004;61(1):73-84.
- 19. Rawson RA, Huber A, Brethen P, et al. Status of methamphetamine users 2-5 years after outpatient treatment. *Journal of Addictive Diseases*. 2002;21(1):107-119.
- 20. DSM-IV-TR. *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision.* Washington DC: American Psychiatric Association; 2000.
- 21. McGregor C, Srisurapanont M, Jittiwutikarn J, Laobhripatr S, Wongtan T, White JM. The nature, time course and severity of methamphetamine withdrawal. *Addiction*. Sep 2005;100(9):1320-1329.
- 22. Fetherston J, Lenton S. WA Drug Trends 2006 Findings from the Illicit Drug Reporting System (IDRS) NDARC Technical Report No. 268 Perth, Western Australia: National Drug Research Institute, Curtin University of Technology; 2007.
- 23. Alcohol and Drug Information Service. Drug and Alcohol Office, Western Australia.; 2007.
- 24. Leek L, Seneque D, Ward K. *Parental Drug and Alcohol Use as a Contributing Factor in Care and Protection Applications 2003.* Perth: Department for Community Development. Government of Western Australia.; 2004.
- 25. Drug and Alcohol Office. *Western Australian Alcohol and Drug Plan 2006-2009.* Perth: Drug and Alcohol Office; 2006.
- 26. Loxley. W, Toumbourou J, Stockwell T, et al. *The Prevention of Substance Use, Risk and Harm in Australia: A review of the evidence.* Canberra: National Drug Research Institute and Commonwealth Department of Health and Aging; 2004.
- 27. Egger G, Donovan R, Spark R. *Health and the Media; Principles and Practices for Health Promotion*. Australia: McGraw-Hill; 1993.
- 28. Midford R, McBride N. *Alcohol education in schools: in WA Alcohol Plan 2006 -2009.* Perth: Drug and Alcohol Office; 2001.
- 29. Kenny P, Pennay A, Harney A, Lee N. Treatment utilization and barriers to treatment among dependent methamphetamine users: Results from a survey of dependent users and service providers. *College on Problems of Drug Dependence*. Quebec, Canada; 2007.
- 30. Hando J, Topp L, Hall W. Amphetamine-related harms and treatment preferences of regular amphetamine users in Sydney, Australia. *Drug and Alcohol Dependence*. Jun 6 1997;46(1-2):105-113.
- 31. Vincent N, Shoobridge J, Ask A, Allsop S, Ali R. Physical and mental health problems in amphetamine users from metropolitan Adelaide, Australia. *Drug and Alcohol Review.* 1998;17:187-195.
- 32. Hando J, Hall W. *Amphetamine Use Among Young Adults in Sydney. Australia Research Grant Report No. B93/2.* Sydney: NSW Drug & Alcohol Directorate and National Drug and Alcohol Research Centre; 1993.
- 33. Baker A, Lee NK, Claire M, et al. Brief cognitive behavioural interventions for regular amphetamine users: a step in the right direction. *Addiction*. Mar 2005;100(3):367-378.
- 34. Aharonovich E, Hasin DS, Brooks AC, Liu X, Bisaga A, Nunes EV. Cognitive deficits predict low treatment retention in cocaine dependent patients. *Drug Alcohol Depend.* Feb 28 2006;81(3):313-322.
- 35. Longo M, Wickes W, White JM. Randomised controlled trial of dexamphetamine maintenance for the treatment of amphetamine dependence. Paper presented at: Australasian Professional Society on Alcohol and other Drugs (APSAD), 2006; Cairns Australia, 6-8 November 2006.
- 36. Australian Institute of Health and Welfare. *National Drug Strategy Household Survey 2004: State and territory supplement.* Canberra: Australian Institute of Health and Welfare; 2005. AIHW cat. no. PHE 61. Canberra:.
- 37. Australian Crime Commission. *Illicit Drug Data Report 2005-2006.* Canberra: Australian Crime Commission; 2007.

- 38. Sommers I, Baskin D. Methamphetamine Use and Violence. *Journal of Drug Issues*. 2006:1:77-96.
- 39. Nicholas R, Shoobridge J. *Alcohol and other drug issues facing policing in Australia*. Adelaide: Australian Centre for Policing Research; 2005.
- 40. Farate E. *Prevalence of Substance Abuse in Care and Protection Applications: A Western Australian Study*: Department for Community Development. Perth. Government of Western Australia; 2001.
- 41. Smout M, Longo M, Krasnikow S, et al. An empirical comparison of two psychotherapies for methamphetamine abuse. Paper presented at: Australasian Professional Society on Alcohol and other Drugs (APSAD), 2006; Cairns Australia, 6-8 November 2006.
- 42. Cruickshank CC, Dyer KR, Montebello M, E, Blaszczyk J. Preliminary results from a randomised double-blind placebo-controlled trial of mirtazapine for the management of methamphetamine withdrawal. Paper presented at: MedPharm, 2006.
- 43. Rawson RA, Marinelli-Casey P, Anglin MD, et al. A multi-site comparison of psychosocial approaches for the treatment of methamphetamine dependence. *Addiction.* Jun 2004;99(6):708-717.
- 44. Jenner L, Spain D, Whyte I, Baker A, Carr VJ, Crilly J. *Management of patients with psychostimulant toxicity: guidelines for ambulance services.* Canberra: Australian Government Department of Health and Ageing; 2006.
- 45. Tiihonen J, Kuoppasalmi K, Fohr J, et al. A comparison of aripiprazole, methylphenidate, and placebo for amphetamine dependence. *Am J Psychiatry.* Jan 2007;164(1):160-162.
- 46. Heinzerling KG, Shoptaw S, Peck JA, et al. Randomized, placebo-controlled trial of baclofen and gabapentin for the treatment of methamphetamine dependence. *Drug Alcohol Depend.* Dec 1 2006;85(3):177-184.
- 47. Shoptaw S, Huber A, Peck J, et al. Randomized, placebo-controlled trial of sertraline and contingency management for the treatment of methamphetamine dependence. *Drug Alcohol Depend.* Oct 15 2006;85(1):12-18.
- 48. Johnson BA, Ait-Daoud N, Elkashef AM, et al. A preliminary randomized, double-blind, placebo-controlled study of the safety and efficacy of ondansetron in the treatment of methamphetamine dependence. *Int J Neuropsychopharmacol*. May 1 2007:1-14.
- 49. McGregor C, White J, M, Srisurapanont M, Mitchell A, Wickes W. Open-label pilot trials of mirtazapine and modafinil in inpatient methamphetamine withdrawal: symptoms and sleep patterns. NIDA Research Monograph 186: Problems of Drug Dependence 2005: Proceedings of the 67th Annual Scientific Meeting; 2005.
- 50. Longo M, McGregor C, Cahill S, et al. Investigation of bupropion (Zyban®) as a potential pharmacotherapy in the treatment of acute amphetamine withdrawal. Paper presented at: Australasian Professional Society on Alcohol and other Drugs (APSAD), 2006; Cairns Australia, 6-8 November 2006.
- 51. Cruickshank CC, Montebello ME, Dyer KR, Blaszczyk J, Tomkins S. Preliminary results from a double-blind randomised placebo-controlled trial of mirtazapine for the management of methamphetamine withdrawal. Paper presented at: Australasian Professional Society on Alcohol and other Drugs (APSAD), 2006; Cairns Australia, 6-8 November 2006.
- 52. Jayaram-Lindstrom N, Wennberg P, Beck O, Franck J. An open clinical trial of naltrexone for amphetamine dependence: compliance and tolerability. *Nord J Psychiatry*. 2005;59(3):167-171.
- 53. Shearer J, Rodgers C, Brady D, et al. Randomised placebo controlled trial of modafinil (200 mg/day) in methamphetamine dependence. *World Psychiatric Association International Congress.* Melbourne, Australia; 2007.

54.	McIver C, Flynn J, Baigent M, et al. <i>Methamphetamine Psychosis & Assertive Community Care for the Post-discharge Treatment of Methamphetamine Psychosis. DASSA Research Monograph No. 21 Research Series.</i> Adelaide, South Australia: Drug
	and Alcohol Services South Australia; 2006.