South Australia

R. Sutherland and L. Burns

SA TRENDS IN ECSTASY AND RELATED DRUG MARKETS 2012
Findings from the Ecstasy and Related Drugs Reporting System (EDRS)

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SOUTH AUSTRALIAN TRENDS IN ECSTASY AND RELATED DRUG MARKETS 2012

Findings from the Ecstasy and Related Drugs Reporting System (EDRS)

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ABBREVIATIONS

1,4B	1, 4 butanediol
2CB	4-bromo-2, 5-dimethoxyphenethylamine
2CE	5-dimethoxy-4-ethylphenethylamine
2CI	2, 5-dimethoxy-4-iodophenethylamine
4-MTA	4-methylthioamphetamine
5MEO-DMT	5-methoxy-dimethyltryptamine
ABCI	Australian Bureau of Criminal Intelligence
ABS	Australian Bureau of Statistics
ACC	Australian Crime Commission
ACPR	Australian Centre for Policing Research
ADIS	Alcohol and Drug Information Service
AFP	Australian Federal Police
AGDH&A	Australian Government Department of Health and Ageing
AIHW	Australian Institute of Health and Welfare
AODTS-NMDS	Alcohol and Other Drug Treatment Services National Minimum Data Set
A&TSI	Aboriginal and/or Torres Strait Island
AQFV	Alcohol Quantity Frequency and Variability Assessment
AUDIT	Alcohol Use Disorders Identification Test
BAC	Blood alcohol concentration
BBVI	Blood-borne viral infection(s)
BMI	Body Mass Index
BZP	Benzylpiperizine(s)
CI	Confidence Intervals
CME-DIS	Client Management Engine-DASC Information System
DASC	Drug and Alcohol Services Council
DASSA	Drug and Alcohol Services of South Australia
DOB	2, 5-dimethoxy-4-bromoamphetamine
DOI	2, 5-dimethoxy-4-iodoamphetamine, 'Death on Impact'
DOM	2, 5-dimethoxy-4-methylamphetamine
DMT	Dimethyltryptamine
DSM-IV-TR	Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, text revision
DXM	Dextromethorphan hydrobromide
ED	Emergency Department
EDRS	Ecstasy and Related Drugs Reporting System
ERD	Ecstasy and related drug(s)
EPS	Emerging psychoactive substances
GBL	Gamma-butyrolactone
GHB	Gamma-hydroxybutyrate
GP	General practitioner
HBV	Hepatitis B virus
HCV	Hepatitis C virus
HIV	Human immunodeficiency virus
HPV	Human papillomavirus (genital warts)
HSI	Heavy Smoking Index

ICD-9	International Statistical Classification of Diseases and Related Health Problems, Ninth Revision
ICD-10	International Statistical Classification of Diseases and Related Health Problems, Tenth Revision
IDRS	Illicit Drug Reporting System
IDU	Person(s) who inject(s) drugs; injecting drug user(s)
K10	Kessler Psychological Distress Scale
KE	Key expert(s)
LSD	*d*-lysergic acid
MDA	3, 4-methylendioxyamphetamine
MDEA	3, 4-methylene dioxyethylamphetamine
MDMA	3, 4-methylendioxymethamphetamine
Ml	Millilitres
N	(or n) Number of participants
NDARC	National Drug and Alcohol Research Centre
NDLERF	National Drug Law Enforcement Research Fund
NDSHS	National Drug Strategy Household Survey
NHMD	National Hospital Morbidity Database
NNDSS	National Notifiable Diseases Surveillance System
NSP	Needle and syringe program
OCD	Obsessive compulsive disorder
OTC	Over the counter
PDI	Party Drugs Initiative
PMA	Para-methoxyamphetamine
PPA	Price, purity and availability
QOL	Quality of life
RAH	Royal Adelaide Hospital
RC	Research chemicals
REU	Regular ecstasy users(s)
ROA	Route of administration
ROL	REM onset latency
SA	South Australia
SAPOL	South Australia Police
SEN	Simple Expiation Notice
SD	Standard deviation
SDS	Severity of Dependence Scale
SPSS	Statistical Package for the Social Sciences
STI	Sexually transmitted infection
TFMPP	3-trifluoromethylphenylpiperazine
WHO	World Health Organization

GLOSSARY OF TERMS

Binge	Use over 48 hours without sleep
Eightball	3.5 grams
Halfweight	0.5 gram
Illicit	Illicit refers to pharmaceuticals obtained from a prescription in someone else's name, e.g. through buying them from a dealer or obtaining them from a friend or partner
Indicator data	Sources of secondary data used in the EDRS (see Method section for further details)
Key expert(s)	Also referred to as KE; persons participating in the Key Expert Survey component of the EDRS (see Method section for further details)
Licit	Licit refers to pharmaceuticals (e.g. benzodiazepines, antidepressants and opioids such as methadone, buprenorphine, morphine and oxycodone) obtained by a prescription in the user's name. This definition does not take account of 'doctor shopping' practices; however, it differentiates between prescriptions for self as opposed to pharmaceuticals bought on the street or those prescribed to a friend or partner
Lifetime injection	Injection (typically intravenous) on at least one occasion in the participant's lifetime
Lifetime use	Use on at least one occasion in the participant's lifetime via one or more of the following routes of administration: injecting; smoking; snorting shelving/shafting; and/or swallowing
Opiates	Opiates are derived directly from the opium poppy by departing and purifying the various chemicals in the poppy
Opioids	Opioids include all opiates but also include chemicals that have been synthesised in some way e.g. heroin is an opioid but not an opiate, morphine is both an opiate and opioid
Point	0.1 gram although may also be used as a term referring to an amount for one injection
Recent injection	Injection (typically intravenous) in the six months preceding interview
Recent use	Use in the six months preceding interview via one or more of the following routes of administration: injecting; smoking; snorting; and/or swallowing
Shelving/shafting	Use via insertion into vagina (shelving) or the rectum (shafting)
Use	Use via one or more of the following routes of administration: injecting; smoking; snorting; shelving/shafting; and/or swallowing

Guide to days of use/injection

180 days	Daily use/injection* over preceding six months
90 days	Use/injection* every second day
24 days	Weekly use/injection*
12 days	Fortnightly use/injection*
6 days	Monthly use/injection*

* As appropriate

EXECUTIVE SUMMARY

This report presents the findings from the twelfth year in which data has been collected in South Australia. The Ecstasy and Related Drugs Reporting System (EDRS; formerly the Party Drugs Initiative, or PDI), monitors the price, purity and availability of 'ecstasy' (MDMA) and other drugs such as methamphetamine, cocaine, gamma-hydroxybutyrate (GHB), *d*-lysergic acid (LSD), 3,4-methylendioxyamphetamine (MDA) and ketamine. It also examines the demographic characteristics and patterns of drug use among regular ecstasy users (REU), the prevalence of risk-taking and harms related to drug use, as well as the level of criminal involvement among this group. It utilises data from three sources: (a) surveys with regular ecstasy users (REU); (b) surveys with key experts (KE) who have contact with REU through the nature of their work; and (c) the analysis of existing data sources that contain information on ecstasy and related drugs (ERD). The EDRS surveys are not representative of ecstasy and other drug users in the general population. The REU are a sentinel group that provides information on patterns of drug use and market trends.

The findings from each year not only provide a snapshot of the ERD market in Australia, but in total they help to provide an evidence base for policy decisions; for helping inform harm reduction messages; and to provide directions for further investigation when issues of concern are detected. Continued monitoring of the ERD markets in Australia will help add to our understanding of the use of these drugs; the price, purity and availability of these drugs and how these may impact on each other; and the associated harms which may stem from the use of these drugs.

Drug trends in this publication primarily represent trends in Adelaide, where new drug trends are likely to emerge. Patterns of drug use may vary among other groups of REU in Adelaide and in regional areas.

Demographic characteristics of regular ecstasy users

Ninety two participants were recruited to the 2012 sample. As in previous years, the REU interviewed were young, with a median age of 22 and three-quarters of the participants were male (73%). Almost one-third of the sample (30%) reported being in full-time employment with a mean income of $510 per week. Most participants were well educated and about half of the sample had completed some kind of post school qualification, while 9% were full-time students. The large majority of the sample identified as heterosexual and 3% were currently undergoing treatment for their drug use. In comparison to participants in 2011, the 2012 sample were generally similar; however, there were significant decreases in heterosexuality, employment on a part-time/casual basis and completion of a university or college course.

Patterns of drug use among participants

Alcohol was the main drug of choice nominated by participants, meaning that, for the second year running, ecstasy had dropped out of favour as the preferred drug of choice among REU. However, of the illicit drugs, ecstasy re-emerged as the main drug of choice, followed by cannabis and then cocaine. Aside from ecstasy, alcohol was the most commonly used drug among REU, followed by cannabis, tobacco and methamphetamine. As in 2011, polydrug use was common among this sample, with participants having tried a median of eleven different drugs in their lifetime, and six within the preceding six months. In 2012, there were significant decreases in the recent use of methamphetamine powder and nitrous oxide.

The proportion of participants who reported recent bingeing on ecstasy or other related drugs increased slightly in 2012. The type of drugs that participants reported as being used in a binge session were similar to those reported in 2011. Alcohol was the most commonly used drug in a binge session, followed by ecstasy, tobacco, cannabis and crystal methamphetamine.

Injecting drug use remained low in 2012, with only five participants reporting that they injected any drug within the preceding six months.

Ecstasy

Although the ecstasy market appears to have made a small recovery in 2012, there has been little change in the parameters of ecstasy use, with the reported median age of first use, 'average' or 'most' amount used in a typical session, and median days of use in a six month period all remaining relatively stable. The proportion of participants who reported using more than one tablet in a typical session increased, albeit non-significantly, to 92%. Over two-fifths of REU reported that they had binged on ecstasy in the past six months, stable from 2011. Swallowing was the main route of administration (ROA) for ecstasy pills and capsules, whilst snorting was the main ROA for ecstasy powder. Approximately half of the sample reported that the last time they consumed ecstasy they had been at a nightclub.

The proportion of participants who reported using other drugs 'with ecstasy' increased slightly in 2012, whilst the use of other drugs to come down from ecstasy decreased (although neither of these changes were significant). Cannabis was the most common drug used to come down from ecstasy, whilst alcohol was the most common drug used in combination with ecstasy.

The reported price of ecstasy remained stable in 2012, at $20 for a pill. This was confirmed by almost two-thirds of the sample who reported that price had remained stable over the preceding six months. Availability continued to be considered 'easy' or 'very easy' by participants. There was, however, a significant increase in the proportion of REU who reported that ecstasy was 'very easy' to obtain, and an inverse significant decrease in those who reported availability to be 'difficult'. The largest portion of REU reported that current purity of ecstasy was medium, although there was a significant increase in the proportion of REU who perceived purity to be high and an inverse decrease in those who reported in to be low. This increase in purity is verified by data from the Australian Crime Commission (ACC) who reported that the median purity of South Australian Police (SAPOL) seizures of phenethylamines almost doubled in 2010/11, from 6.8% in 2009/10 to 11.8% in 2010/11.

Ecstasy was generally purchased for both self and others, with three participants reporting purchasing ecstasy for others only. Ecstasy was purchased from a median of four people in the six months prior to interview. The majority of participants purchased ecstasy one to 12 times in that period, with 11% purchasing ecstasy between 13−24 times in that period. REU obtained a median of five pills on the last occasion of purchase, and mainly purchased ecstasy from friends.

Methamphetamine

In 2012, the proportions of the participant sample reporting recent use of crystal and base remained relatively stable, whilst there was a significant decrease in the use of methamphetamine powder. The frequency of use within the preceding six months remained relatively stable, and low (range 2.5−6 days) for all three forms of methamphetamine. In the six months prior to interview, smoking emerged as the preferred route of administration for both base and crystal methamphetamine, whilst

snorting and smoking were the preferred methods for administering powder methamphetamine.

The price for a point of crystal methamphetamine remained stable in 2012, whilst the price for a point of base and methamphetamine powder increased to $85 and $100 respectively. However, despite these changes in the median price, the majority of participants reported that the price of all three forms of methamphetamine had remained stable in the six months preceding interview.

The purity of all three forms of methamphetamine was largely perceived as high, with crystal methamphetamine appearing to have the highest purity according to participant reports. In addition, seizures analysed by South Australia Police (SAPOL) revealed that the median purity of methamphetamine in 2010/11 had more than quadrupled compared to 2009/10. All forms of methamphetamine were considered easy to very easy to obtain recently, and participants reported that this had remained stable within the last six months.

Overall, participants mostly reported obtaining all three forms of methamphetamine from friends, and at their friend's home.

Of the illicit drugs, most key experts (KE) considered methamphetamine to be an issue of particular concern at the moment. This was attributed to its high prevalence and the effects (health, mental and social) that it has on both the individual and their family/friends.

Cocaine

There were slight, albeit non-significant, declines in the proportion of REU who reported lifetime and recent use of cocaine in 2012. Among those who had used cocaine in the six months preceding interview, frequency of use remained low and stable at a median of two days.

The median price paid for a gram of cocaine decreased slightly to $350, although the majority of those able to answer perceived that the price had remained stable in the six months preceding interview. Reports regarding the purity of cocaine were mixed, with almost equal proportions reporting it to be low (30%), medium (33%) and high (27%). Interestingly, seizures analysed by SAPOL revealed that the median purity of cocaine in 2010/11 had more than halved compared to 2009/10. Participants largely reported that cocaine was 'difficult' to obtain.

LSD

Almost one-fifth of the participant sample in 2012 reported recent use of LSD, declining slightly from 2011. Frequency of LSD use was stable and remained consistently low. The amount of LSD used in a typical and heavy session remained stable, and the majority of participants reported being at a private venue (own/friend's home) at last time of intoxication.

The median price of LSD remained stable in 2012, at $15 for a tab. The purity of LSD was perceived as high, and participants largely believed this had remained stable over the past six months. The availability of LSD remained stable in 2012, with almost equal proportions reporting that LSD was easy or difficult to obtain.

Virtually all of the KE reported that the prevalence of LSD was very low, and that they had seen very little of it among their clientele. One KE noted that LSD had been replaced with 2, 5-dimethoxy-4-iodoamphetamine (Death on Impact – DOI), although another reported that there had been a decrease in DOI as well. A couple of KE also

noted the emergence of 25-B-NBOMe, a low dose hallucinogen that is often sold as LSD.

Cannabis

The prevalence of cannabis use remained exceptionally high in 2012, with 98% of the sample reporting lifetime use and 88% reporting use within the preceding six months. The frequency of recent cannabis use by participants remained stable in 2012, at a median of 48 days within a six month period. Participants reported spending most of their time, whilst intoxicated, at their own home or at a friend's home.

The price reported for a bag of hydro/bush remained stable in 2012, as did the availability (with participants reporting that cannabis was easy or very easy to obtain). The purity of both hydro and bush was reported as high, with the purity of both types of cannabis perceived as stable in the previous six months.

Emerging psychoactive substances

Participants in 2012 were asked about their use of a range of emerging psychoactive substances (EPS). Those most recently used were herbals highs, unknown capsules and synthetic cannabinoids. Interestingly, there were significant decreases in the recent use of 4-bromo-2,5-dimethoxyphenethylamine (2CB), 2,5-dimethoxy-4-ethylphenethylamine (2CE), 2,5-dimethoxy-4-iodophenethylamine (2CI) and DOI.

It was reported by KE that in 2011 there were 20 new drugs that entered the SA drug market. Three KE reported that MDPV was the main analogue drug in Adelaide; however, reports regarding the remaining EPS were somewhat mixed. Other drugs of concern were benzylpiperizine (BZP), 3-trifluoromethylphenylpiperazine (TFMPP), 25-B-NGOMe, growth hormones and pre-workout analogues.

It was interesting to note that, despite the resurgence of the ecstasy market, over a third of the sample still reported the use of 'any' EPS in the six months preceding interview. This may suggest that, even if the ecstasy market were to make a full recovery, participants would continue to experiment with a range of different drugs.

Other drugs

For the first time in the history of the SA EDRS, alcohol emerged as the main drug of choice nominated by participants. As in previous years, the large majority of the participant sample reported recent use of alcohol, and frequency remained stable at a median of 48 days in a six month period (approximately twice a week). Many KE considered alcohol to be a particularly problematic drug due to its widespread prevalence, availability and social acceptability. Binge drinking and pre-loading were raised as issues of particular concern.

Almost the entire sample reported lifetime use of tobacco, and 85% reported use of tobacco in the six months preceding interview. Almost two-thirds of REU reported daily tobacco use, and this continues to far exceed the daily smoking prevalence rate among the general population.

Twenty-four percent of participants reported recent use of illicit benzodiazepines, at a frequency of less than once a month. Only one participant reported recent use of illicit antidepressants.

Recent use of nitrous oxide decreased significantly in 2012, with a fifth of the sample reporting use within the preceding six months. The prevalence of recent amyl nitrate use remained stable at 17% of the sample. Frequency of use remained low for both

inhalants. There were no significant changes in the use of ketamine, GHB or MDA; however, it is interesting to note that two KE from the law enforcement field reported a resurgence in the GHB market.

Lifetime use and recent use of illicit pharmaceutical stimulants remained stable in 2012. One-quarter of the sample reported that they had used magic mushrooms in the six months prior to interview, although frequency remained low. Recent use of heroin and other opioids remained low and stable, there were no participants that reported recent steroid use and there were significant decreases in the recent use of over the counter (OTC) codeine and stimulants.

Health-related issues

The prevalence of recent (past 12 month) stimulant overdose remained stable in 2012, whilst there was a slight, non-significant decrease in the prevalence of recent depressant overdose. Overall, 60% of REU reported that they had overdosed on either a stimulant or depressant drug in the 12 months preceding interview. When analysing this data it is important to keep in mind that this is self-report data, with overdose defined as symptoms that occurred "outside your normal drug experience, or where professional assistance would have been helpful".

Thirteen percent of participants reported having accessed professional help for a drug and alcohol related issue in the six months prior to interview, and one in five participants reported that they had thought about seeking help for their drug and alcohol use. The most commonly accessed services were psychologists and drug and alcohol workers.

The proportion of clients attending Drug and Alcohol Services South Australia (DASSA) treatment services, with ecstasy as the primary drug of concern, remained stable in 2012 and accounted for a very small proportion of total attendances. Alcohol dominated as the primary drug of concern for the largest proportion of total clients to DASSA treatment services, followed by amphetamines, cannabis, opioid analgesics and heroin.

Telephone calls made to the SA Alcohol and Drug Information Service (ADIS) remained stable for ecstasy, cocaine and cannabis; increased for methamphetamine; and decreased for alcohol.

In 2012, 28% of the participants were assessed at high to very high risk of psychological distress as measured by the Kessler Psychological Distress Scale (K10), in the four-weeks prior to the survey.

Risk behaviour

Injecting risk behaviour

Seven percent of the sample reported that they had ever injected any drug. Five participants reported recently injecting any drug in 2012, most commonly heroin. With regard to longer-term trends, there was no evidence of a change in the prevalence of recent injecting amongst participants across the years. Among those who had injected in the past six months, there were no participants who reported that they had shared needles or injecting equipment.

Sexual risk behaviour

Evidence of risky sexual behaviour was again apparent among the participant sample in 2012. Of the participants who reported having had penetrative sex with a

casual partner in the last six months, about a third of the sample reported that they did not use protection during their last sexual encounter, regardless of whether they were sober or intoxicated. In addition, the vast majority of those who reported recent penetrative sex reported having done so whilst under the influence of drugs – most commonly ecstasy, followed by alcohol and cannabis. Seven participants reported that they had been diagnosed with a sexually transmitted infection (STI) in the past year, most commonly Chlamydia.

Driving risk behaviour

Fifty-seven percent of those who had driven in the six months prior to interview reported that they had driven whilst under the influence of alcohol; of these participants, the majority reported driving over the legal blood alcohol concentration (BAC) limit on a median of two occasions in that period. Fifty-six percent of recent drivers reported driving after consuming an illicit drug, and these participants had done so on a median of six times in the six months prior to interview. Cannabis and ecstasy were the most commonly used illicit drugs prior to driving.

Alcohol risk behaviours

The Alcohol Use Disorders Identification Test (AUDIT) is a brief screening tool which is used to identify individuals with alcohol problems. Using this test, participants scored a mean of 16.2. Eighty-eight percent of the sample scored eight or more; these are levels at which alcohol intake may be considered hazardous.

Law enforcement-related trends

The prevalence of past month criminal activity among REU remained stable in 2012. Drug dealing continued to be the most common offence which had been committed, followed by property offences. Fraud and violent crime remained low among REU. The number of participants reporting past-year arrest remained stable.

Two-thirds of the sample reported that the level of police activity had remained stable over the preceding six months, while one-third reported an increase in activity.

Special topics of interest

Heavy Smoking Index nicotine dependence

Among those who had smoked daily, about one-third reported waiting 60 minutes or longer before smoking their first cigarette, and 45% reported smoking 10 or less cigarettes a day. Approximately one-fifth of daily smokers scored 6 or above, indicating high-very high dependence, with the mean Heavy Smoking Index (HSI) score being 3.0.

Neurological history

Traumatic brain injury (TBI) was surprisingly common among REU, with 44% of the sample reporting a lifetime history of a TBI. Among those who had a lifetime history of traumatic brain injury, almost half reported being under the influence of alcohol at the time of injury, a fifth had been under the influence of illicit drugs and three-quarters reported that they had experienced neuropsychological sequelae following the injury.

Body image

Fourteen percent of REU reported that they had used illicit psycho-stimulants at some stage in their life to help them lose or maintain weight. The most commonly used drugs for this purpose were ecstasy and methamphetamine. Participants who had ever used illicit psycho-stimulants to help control their weight were significantly

more likely to be female and were also more likely to be worried about gaining weight should they cease their psycho-stimulant use.

Drug policy attitudes

In 2012, participants were asked a number of questions regarding their attitudes towards a range of different policy initiatives. In regards to policies that are designed to reduce the problems associated with heroin, it was found that REU were most supportive of needle and syringe programs, methadone/buprenorphine maintenance programs and regulated injecting rooms. In addition, the majority of the sample supported legalisation of cannabis, and over a third supported the legalisation of ecstasy. Forty-two percent of REU supported increased penalties for the sale or supply of heroin, and approximately one-third supported increased penalties for the sale or supply of methamphetamine.

Ecstasy dependence

Over one-third of the sample (37%) obtained a score of zero on the ecstasy Severity of Dependence Scale (SDS), and 14% obtained a score of 1 on the scale. This indicates that half of the sample reported no or few symptoms of dependence in relation to ecstasy use.

Conclusions

The results reported here describe trends in the use of ERD in 2012 in Adelaide, South Australia, and provide comparisons with the findings of the 2011 study. Many characteristics of ERD in the current study were comparable to previous years and remained stable. The notable changes in 2012 centred on the re-emergence of the ecstasy market. More specifically, there were significant increases in the reported availability and purity of ecstasy; these reports were supported by the ACC data which found that the median purity of phenethylamines seizures almost doubled in the 2010/11 financial year. Perhaps in response to the recovery of the ecstasy market, there were significant decreases in the recent use of methamphetamine, nitrous oxide, OTC codeine and stimulants, 2CI, 2CB, 2CE and DOI.

However, despite the decreases noted above, the use of emerging psychoactive substances remained common, with over a third of REU reporting that they had used some form of EPS in the six months preceding interview. In addition, alcohol appears to be gaining popularity among REU; for the first time in the history of the SA EDRS it was nominated as the primary drug of choice, and its use remains highly prevalent.

Behaviours such as inconsistent condom use, driving under the influence of alcohol and other drugs, criminal activity, bingeing and overdose remained stable in 2012, and continue to carry serious public health concerns.

Implications

The findings from the 2012 SA EDRS have policy and research implications, and several recommendations are outlined below. It is worth noting that several of these issues may have already received attention and/or may be in the process of further investigation.

- The apparent re-emergence of the ecstasy market, and in particular the increase in purity, raises concerns regarding the potential to overdose. As such, it is essential that harm reduction messages − such as only taking one pill (or less) to start with − be promoted among REU.

- Continued use by REU of multiple drugs in combination, and binge use of drugs, warrants continued education regarding the harms associated with such behaviour, and continued promotion of harm reduction strategies.
- The majority of REU reported that they had overdosed on either a stimulant or depressant drug in the 12 months preceding interview. This is a serious public health concern, and it is essential that education and harm reduction be developed to address this issue.
- The use of emerging psychoactive substances remains popular among REU, and as such it is important that we continue to monitor this market and assess the harms associated with these drugs. If the ecstasy market continues its recovery, it will be interesting to observe whether this signals a shift away from the EPS market.
- Given the prevalence of supply of ecstasy to friends among REU, there is a need for education strategies to better inform this group of the illegality of their behaviour and the consequences of such behaviour. This is highlighted by the lack of knowledge participants had about the laws surrounding the trafficable quantities of MDMA.
- Increased promotion of 'safe sex' practices is needed within this population of illicit drug users, especially regarding casual sexual experiences.
- Given the prevalence of drink and drug driving among REU, and the introduction of roadside drug testing in SA, there is a need for development and implementation of education and harm-reduction programs, targeted at young people, addressing the harms associated with such behaviour and the effects of different drug types upon driving ability.
- Considering the prevalence of alcohol-related harm among REU, and daily alcohol consumption by some REU, specific harm reduction information is needed to target this group. Key experts also noted that binge drinking and pre-loading were problems that need to be addressed. The high prevalence of tobacco use among REU continues to be an issue of grave concern.
- Considering the substantial prevalence of mental health issues, development and implementation of strategies is needed to address issues associated with drug misuse and dependence.

1 INTRODUCTION

The EDRS evolved from the Illicit Drug Reporting System (IDRS), an ongoing annual project which has been conducted in South Australia (SA) since 1997 and in all states and territories of Australia since 2000. To date, the purpose of the IDRS has been to provide a coordinated approach to monitoring the use of illicit drugs, in particular heroin, methamphetamine, cannabis and cocaine. It is intended to serve as an early warning system, identifying emerging trends of local and national concern in various illicit drug markets. The study is designed to be sensitive to such trends, providing data in a timely fashion, rather than to describe phenomena in detail, such that it will provide direction for more detailed data collection on specific issues.

In June 2000, the National Drug Law Enforcement Research Fund (NDLERF) funded a two-year, two state trial in New South Wales and Queensland on the feasibility of monitoring emerging trends in the ecstasy and related drugs market using the extant IDRS methodology. In addition, Drug and Alcohol Services Council (DASC), now known as Drug and Alcohol Services of South Australia (DASSA), agreed to provide funding for two years to allow the trial to proceed in this state. This component of the IDRS was known as the Party Drugs Module and the term 'party drug' was considered to include any drug that was routinely used in the context of entertainment venues such as nightclubs or dance parties, and by a population of users different to those surveyed by the main IDRS. 'Party drugs' included drugs such as 'ecstasy' (3, 4-methylenedioxymethamphetamine, MDMA), methamphetamine, LSD, ketamine, 3, 4-methylenedioxyamphetamine (MDA), and gamma-hydroxy butyrate (GHB).

In 2002, the National Drug and Alcohol Research Centre (NDARC) provided funding for the Party Drugs Module to be conducted in NSW, as did DASSA in South Australia. In 2003, NDLERF provided funding for the Party Drugs Module to be conducted in all jurisdictions across Australia, under the title of the Party Drugs Initiative (PDI), representing the first year that data for this project had been collected nationally. Funding was again provided by NDLERF in 2004. In 2005, the Australian Government Department of Health and Ageing and the Ministerial Council on Drug Strategy provided funding, as a project under the cost shared funding arrangement. In 2006, the Australian Government Department of Health and Ageing provided funding. In 2006, the PDI was renamed and is now known as the Ecstasy and Related Drugs Reporting System (EDRS).

1.1 Study aims

The specific aims of the 2012 South Australian EDRS were to:

- describe the characteristics of a sample of ecstasy users surveyed in Adelaide in 2012;
- examine the patterns of ecstasy and other drug use among this sample;
- document the current price, purity and availability of ecstasy and related drugs in Adelaide;
- examine participants' perception of the incidence and nature of ecstasy and other drug-related harms, including physical, psychological, occupational, social and legal harms;
- identify emerging trends in the ecstasy and related drug markets that require further investigation; and
- where possible, compare findings of the 2011 EDRS.

2 METHOD

Methodology for this study was conducted as per the methodology trialled in the feasibility study (Breen, Topp & Longo, 2002). Data were triangulated from three sources, as follows:

- face to face interviews with current regular ecstasy users (REU) living in the Adelaide metropolitan area;
- telephone interviews with key experts (KE) who work professionally or as volunteers in the drug and alcohol area or a related field, and have knowledge of, or regular contact with, ecstasy and related drug users; and
- an examination of existing, current indicator data relating to drug use and drug-related issues.

2.1 Survey of regular ecstasy users (REU)

As detailed by White, Breen & Degenhardt (2003), ecstasy has been the most widely used of the group of drugs referred to previously as 'party drugs' in the last several years, and it was decided that regular ecstasy use should define the sentinel population of ecstasy and related drug users that the study sought to recruit. This decision was partly based on the knowledge that a market for 'ecstasy' (tablets sold purporting to contain MDMA) has existed in Australia for more than two decades, and, in contrast, other drugs used by this population have either declined substantially in popularity since the appearance of ecstasy (e.g. LSD), fluctuated widely in availability (e.g. MDA), or are relatively new in the market and are yet to be as widely used as ecstasy (e.g. ketamine and GHB).

2.1.1 Recruitment

The EDRS sample consists of people who had regularly used ecstasy at least once per month in the 6 months prior to interview. In 2012, a total of 92 regular ecstasy users were interviewed from April to July. Although this fell short of the desired sample size (i.e. 100 participants), it did represent a marked improvement from 2011 in which only 76 participants were recruited. This seems to signal a shift back towards ecstasy, although it is important to note that there has not been full recovery of the ecstasy market.

Participants were recruited through a purposive sampling strategy (Kerlinger, 1986), which included advertisements in two entertainment-focused street magazines, on university noticeboards and in several centrally located music stores. In addition, advertisements were posted on various websites. Some participants were also recruited using 'snowball' procedures (Biernacki & Waldorf, 1981). 'Snowballing' is a means of sampling 'hidden' populations that relies on peer referral and is widely used to access illicit drug users both in Australian studies (e.g. Boys, Lenton & Norcoss, 1997; Ovendon & Loxley, 1996; Solowij, Hall & Lee, 1992) and international studies (e.g. Dalgarno & Shewan, 1996; Forsyth, 1996; Peters, Davies & Richardson, 1997). For the EDRS, on completion of the survey, participants were asked to pass on information regarding the study to any friends or associates they believed may have been eligible to participate in the study, and a 'business card' with study contact details was provided for the purpose.

2.1.2 Procedure

Participants contacted the research officer either by telephone or email (via a web-site link) and were screened for eligibility. To meet entry criteria, participants had to be at least 16 years of age (due to ethical constraints), they must have used ecstasy at least six times over

the last six months, and have been a resident (not incarcerated) of the Adelaide metropolitan region for at least the last 12 months.

Participants were assured that all information they provided was strictly confidential and anonymous, and that the study would involve a face-to-face interview that would take between 30 and 60 minutes to complete. All participants were volunteers who were reimbursed $40 for their time and travel expenses. Interviews took place in varied locations convenient to the participants. Trained research interviewers with experience and understanding of how to administer the survey questionnaire conducted all interviews. The nature and purpose of the study was explained to participants before informed consent to participate was obtained, according to ethical guidelines.

2.1.3 Measures

Participants were administered a structured interview schedule based on a national study of ecstasy users conducted by NDARC in 1997 (Topp et al., 1998; Topp et al., 2000), which incorporated items from a number of previous NDARC studies of users of ecstasy (Solowij, Hall & Lee, 1992) and powder amphetamine/methamphetamine (Darke et al., 1994; Hando & Hall, 1993; Hando, Topp & Hall, 1997). The interview focused primarily on the preceding six months, and assessed:

- demographic characteristics;
- patterns of ERD use, including frequency and quantity of use and routes of administration;
- drug market characteristics: the price; purity; and availability of different ERD;
- risk behaviours (such as injecting, sexual behaviour, driving under the influence of alcohol and other drugs);
- help-seeking behaviour;
- mental and physical health, personal health and wellbeing;
- self-reported criminal activity;
- ecstasy-related problems, including relationship, legal and occupational problems;
- general trends in ERD markets, such as new drug types, new drug users and perceptions of police activity; and
- areas of special interest including nicotine dependence, ecstasy dependence, neurological history, body image and drug policy attitudes.

2.1.4 Data analysis

Statistical analyses (descriptive and inferential) were performed using the Statistical Package for the Social Sciences (SPSS) for Windows, Version 18.0. (PASW, 2009). Continuous, normally distributed variables were analysed using *t*-tests and means reported. Where continuous variables were skewed, medians were reported and the Mann-Whitney *U*-test, a non-parametric analogue of the *t*-test (Siegel & Castellan, 1988), was employed. Confidence intervals (CI) were calculated using an Excel spreadsheet available at http://www.cebm.net/index.aspx?o=1023 (Tandberg). This calculation tool was an implementation of the optimal methods identified by Newcombe (1998).

2.2 Survey of key experts (KE)

The eligibility criterion for KE participation in the EDRS was regular contact, in the course of employment or otherwise, with a range of ecstasy users throughout the last six months. Specifically, average weekly contact with at least ten ecstasy users over the time period was

required, unless individuals were considered appropriate due to their level of expertise in the field (e.g. police and intelligence analysts).

The interview schedule was a semi-structured instrument that included sections on drug use patterns, drug availability, criminal behaviour, health issues and police activity. The majority of interviews took approximately 30 minutes to conduct. Notes were taken during the interview and the responses were analysed and sorted for recurring themes. Interviews were conducted via telephone in October 2012. KE were renumerated with a small gift (e.g. box of chocolates) for their time.

There were eleven KE from various metropolitan regions of Adelaide. The majority of KE worked in the health sector, including in drug diversion, community drug and alcohol work, drug treatment services, mental health services, health promotion/information and emergency treatment. There were five KE from the law enforcement sector, ranging from forensic scientists to intelligence analysts.

In the following report, the information obtained from the KE will be presented in a qualitative fashion, by identifying the common themes and discussing them. Any major differences found between the KE reports will also be reviewed. No personal information was collected on any of the ecstasy or other drug users that KE had been in contact with.

2.3 Other indicators

To complement and validate data collected from the ecstasy user and KE surveys, a range of secondary data sources were utilised, including population surveys and other health and law enforcement data.

Data sources included in the report were:

- telephone advisory data provided by the Alcohol and Drug Information Service (ADIS) of South Australia;
- treatment services data from Drug and Alcohol Services South Australia (DASSA);
- data from the National Campaign Against Drug Abuse Household Survey of 1991 and 1993, and the National Drug Strategy Household Survey (NDSHS) of 1995, 1998, 2001, 2004 and 2007 (reports published by the Australian Institute of Health and Welfare);
- purity of drug seizures made by South Australian Police (SAPOL) and the Australian Federal Police (AFP), provided by the Australian Crime Commission (ACC);
- state-wide rates of drug-related arrests provided by SAPOL;
- national rates of methamphetamine-related and cocaine-related fatalities provided by the Australian Bureau of Statistics (ABS), in Roxburgh, A. & Burns, L. (in press) 2008;
- drug-related admissions to the Emergency Department of the Royal Adelaide Hospital (RAH), provided by the Emergency Department (ED);
- drug-related hospital admissions data (state and national) provided by the Australian Institute of Health and Welfare (AIHW) 2008.

3 DEMOGRAPHICS

Key Findings

- A total of 92 participants were interviewed for the EDRS survey in 2012.
- Participants were aged in their early-20s (median age of 22 years), predominantly male (73%), with the majority identifying as heterosexual (90%).
- The REU interviewed were well educated: just under half had gained post-secondary qualifications, while 9% were full-time students.
- Roughly one-third of the sample were currently in full-time employment, with a mean income of $510 per week. The majority were renting/owned (51%) or living in the parental/family home (47%).
- Three participants were currently in drug treatment.
- Demographic characteristics were generally consistent from 2011, except for sexuality, employment and tertiary qualifications.

3.1 Overview of the REU participant sample

3.1.1 Demographic characteristics of the REU sample

In the 2012 EDRS, 92 participants were interviewed in South Australia. Thirteen percent of the EDRS sample had participated in previous years; 1% in 2004, 1% in 2008, 2% in 2009 and 6% in 2010. One participant had participated in a previous SA IDRS survey of people who inject drugs.

In 2012, almost three-quarters (73%) of the sample interviewed were male. The mean age of the sample was 24 years (SD=7.14, range=17-48) with a median age of 22 years. The majority of participants reported their sexual identity as heterosexual (90%), and nominated English as their main language (98%). One participant was of Aboriginal and/or Torres Strait Island (A&TSI) descent.

Three-fifths (62%) of the sample reported that they were of single status, one-quarter (26%) had a partner and 8% reported to be married or living in a de facto relationship. Half (51%) lived in their own (owned or rented) accommodation and 47% lived in their parents' or family's home.

The median number of years of school education completed by the sample was 12 (range= 8-12) and three-quarters (75%) of the participants had completed year 12. Half (47%) had completed courses after school, with 12% having completed a university degree and 35% a trade/technical qualification. Just under a third of participants were employed on a full-time basis (30%), a fifth were employed on a part-time/casual basis (21%), one-third were currently students (9% full-time, 3% part-time, 23% employed & studying) and one-eighth were currently unemployed (13%). The mean weekly income was $510 (range=$30-1500). Three participants were receiving drug treatment at the time of interview, all of which were receiving counselling.

Table 1 presents key demographic characteristics across time. The demographic characteristics of regular ecstasy users recruited for the EDRS have remained relatively stable between 2004 and 2012. Demographic comparisons between the 2011 sample and 2012 sample showed a significant decrease in those who identified as heterosexual ($p < 0.05$; 95% CI: 0.01–0.16); and a significant decrease in participants who were employed on a part-time/casual basis ($p < 0.05$; 95% CI: 0.013–0.28) and had completed a university or college degree ($p < 0.05$; 95% CI: 0.04–0.28).

Table 1: Demographic characteristics of REU sample, 2004–2012

Characteristic	2004 (n=100)	2005 (n=100)	2006 (n=100)	2007 (n=100)	2008 (n=74)	2009 (n=100)	2010 (n=92)	2011 (n=76)	**2012 (n=92)**
Age (median in years)	23	22	23	24	24	22	24	21	**22**
(range)	(16-41)	(16-43)	(16-48)	(16-51)	(17-59)	(16-54)	(18-51)	(17-45)	**(17-48)**
Sex (% male)	62	58	63	53	53	65	62	68	**73**
Sexual Identity (%)									
Heterosexual	84	89	89	84	80	83	87	99	**90**
Gay male	3	3	8	4	4	5	2	-	**3**
Lesbian	3	-	-	1	7	1	3	-	**0**
Bisexual	8	8	2	10	6	10	8	1	**7**
Other	-	-	1	1	4	1	-	-	**0**
English main language spoken at home (%)	98	99	98	99	99	99	99	97	**98**
A&TSI (%)	0	1	7	2	3	4	1	1	**1**
Employment (%)									
Not employed	15	17	14	18	23	33	20	22	**13**
Full-time	34	39	28	38	22	29	30	21	**30**
Part-time/casual	23	24	27	24	26	25	34	36	**21**
Full-time student	25	19	26	3	3	4	10	8	**9**
Part-time student	3	1	-	-	-	-	2	-	**3**
Both studying & employed[#]	-	-	-	12	18	8	1	13	**23**
Home duties	-	-	-	-	1	-	3	-	**0**
Other	-	-	6	5	7	1	-	-	**1**
School education* (median in years)	12	12	12	12	12	11	12	12	**12**
(range)	(8-13)	(6-13)	(9-13)	(9-13)	(8-12)	(7-12)	(7-13)	(9-12)	**(8-12)**
Tertiary education (%)									
None	54	46	50	42	43	48	47	45	**53**
Trade/Technical	26	38	28	40	31	36	30	28	**35**
University/College	20	16	22	18	26	16	23	28	**12**
Prison history (%)	5	1	5	10	7	8	6	Not asked	**7**
Current drug treatment (%)	1	2	2	1	0	1	0	4	**3**

Source: EDRS interviews

[*] Question changed from 'How many years of school did you complete?' to 'What grade of school did you complete?'

[#] Response option added to include 'both studying and employed'

4 CONSUMPTION PATTERN RESULT

Key Findings

- For the first time in the history of the SA EDRS, alcohol was the most popular drug of choice nominated by REU. Of the illicit drugs, ecstasy emerged as the primary drug of choice.
- There were significant decreases in the recent use of methamphetamine powder and nitrous oxide.
- Six participants reported that they had ever injected a drug, which remained relatively stable from 2011.
- Over half of the sample had recently binged on ecstasy and/or related drugs. The most commonly used drugs were alcohol, ecstasy, methamphetamine and tobacco.
- When asked about changes in the drug market, the predominant theme to emerge among REU was that there had been an overall increase in drug use, or that people were switching to new drugs.

4.1 Drug use history and current drug use

In 2012, participants were asked about lifetime (i.e. ever having used) and recent (last six months) use of a broad range of drug types, including alcohol and tobacco. Table 2 presents the proportion of REU reporting lifetime and recent use of the main drug types investigated by the EDRS across the sampling years (methamphetamine, cocaine, LSD, MDA, GHB and ketamine), as well as the proportion reporting lifetime and recent use of alcohol and tobacco.

Regular ecstasy users are often described as polydrug users and the 2012 sample was no exception. Participants were asked about their lifetime and recent use of 23 different drug types[1]. Participants reported using a median of eleven (range 3-23; n=91) drug types in their lifetime and a median of six (range 3-18; n=91) in the preceding six months. An increasing proportion of REU reported the use of less commonly used substances, including many of the synthetic analogues known as 'research chemicals' including mephedrone, ivory wave, dimethyltryptamine (DMT − a powerful hallucinogen); synthetic drugs such as 2CI, 2CB and BZP; and naturally occurring drugs, such as kava (data not shown). In 2012, the EDRS included a section investigating the prevalence of use of these substances among this sample. Results can be found in Section 4.8: 'Emerging psychoactive substances (EPS) use'.

Table 2 presents the proportion of REU reporting lifetime and recent drug use across time. The drugs most likely to have 'ever' been used and to have been used in the preceding six months were alcohol, followed by cannabis and tobacco. This has remained relatively constant over the years.

[1] Drug types were ecstasy (pills, powder & capsules), methamphetamine (powder, base & crystal), pharmaceutical stimulants, cocaine, LSD, MDA, 'magic mushrooms', ketamine, GHB (includes 1,4-butanediol and gamma-butyrolactone (GBL)), amyl nitrate, nitrous oxide, alcohol, cannabis, benzodiazepines, antidepressants, tobacco, heroin, methadone, buprenorphine, over the counter (OTC) stimulants, steroids, OTC codeine and other opiates

Table 2: Lifetime and recent (last six months) use of REU, 2003–2012

	2003	2004	2005	2006	2007	2008	2009	2010	2011	**2012**
Alcohol										
Ever used (%)	100	100	100	99	98	99	96	99	99	**99**
Used last six months (%)	98	96	99	97	94	97	93	92	99	**99**
Cannabis										
Ever used (%)	100	97	97	98	97	95	98	100	97	**98**
Used last six months (%)	87	81	87	83	80	74	96	84	92	**88**
Tobacco										
Ever used (%)	81	76	90	87	86	84	90	80	93	**96**
Used last six months (%)	72	65	78	73	73	70	80	69	86	**85**
Meth. powder (speed)										
Ever used (%)	82	86	83	75	81	55	60	71	67	**59**
Used last six months (%)	65	62	66	51	53	30	30	38	45	**24**
Meth. base										
Ever used (%)	75	84	88	72	81	46	46	49	41	**41**
Used last six months (%)	70	72	82	63	64	34	21	28	24	**24**
Crystal meth. (ice/crystal)										
Ever used (%)	60	60	62	73	66	47	52	55	50	**53**
Used last six months (%)	48	47	41	62	49	34	32	26	43	**32**
Cocaine										
Ever used (%)	57	59	67	49	71	53	45	69	75	**66**
Used last six months (%)	37	26	49	31	36	20	20	42	45	**37**
LSD										
Ever used (%)	73	77	82	71	75	64	71	66	63	**52**
Used last six months (%)	30	36	48	34	33	35	37	35	30	**19**
MDA										
Ever used (%)	31	30	19	21	30	16	8	27	32	**33**
Used last six months (%)	21	14	9	9	7	1	2	7	15	**9**
Ketamine										
Ever used (%)	47	51	44	35	49	37	31	49	37	**37**
Used last six months (%)	36	39	24	11	26	20	19	13	8	**10**
GHB/1,4B/GBL										
Ever used (%)	38	35	33	31	32	19	9	24	26	**25**
Used last six months (%)	12	12	18	8	11	4	2	8	5	**12**

Source: EDRS interviews

Table 2: Lifetime and recent (last six months) use of REU, 2003–2012 (continued)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	**2012**
Amyl nitrate										
Ever used (%)	40	43	31	30	41	27	30	40	45	**32**
Used last 6 months (%)	13	16	9	9	13	7	16	8	17	**17**
Nitrous oxide										
Ever used (%)	82	74	74	67	61	50	53	59	59	**52**
Used last 6 months (%)	55	47	46	33	30	26	33	20	36	**20**
Benzodiazepines*										
Ever used (%)	49	57	54	50	49	32	34	42	53	**47**
Used last 6 months (%)	30	40	26	33	32	18	19	25	42	**32**
Antidepressants*										
Ever used (%)	24	31	31	33	39	32	25	28	28	**27**
Used last 6 months (%)	12	14	10	16	14	7	5	12	13	**13**
Pharmaceutical stimulants*										
Ever used (%)	-	54	60	49	46	28	30	45	49	**52**
Used last 6 months (%)	-	21	24	20	15	4	5	10	24	**19**
Mushrooms										
Ever used (%)	-	-	55	50	60	47	45	52	62	**69**
Used last 6 months (%)	-	-	14	18	12	5	18	14	24	**26**
Heroin										
Ever used (%)	10	19	9	9	22	19	17	12	16	**12**
Used last 6 months (%)	2	3	3	1	4	8	6	2	7	**8**
Methadone										
Ever used (%)	0	8	6	6	5	8	11	5	11	**9**
Used last 6 months (%)	-	0	0	2	1	1	1	0	4	**1**
Buprenorphine										
Ever used (%)	0	8	2	3	5	7	4	1	5	**10**
Used last 6 months (%)	-	6	1	2	1	4	1	0	5	**5**
Other Opiates										
Ever used (%)	22	24	20	21	22	19	30	15	41	**29**
Used last 6 months (%)	7	10	8	4	12	10	15	9	20	**14**

Source: EDRS interviews

* Includes both licit and illicit use

Compared to 2011, the only significant changes in consumption patterns for 2012 were:

- lower recent use of methamphetamine powder (45% in 2011 versus 24% in 2012; 95% CI: 0.06–0.34; p=0.007);
- lower recent use of nitrous oxide (36% in 2011 versus 20% in 2012; 95% CI: 0.025–0.29; p=0.03).

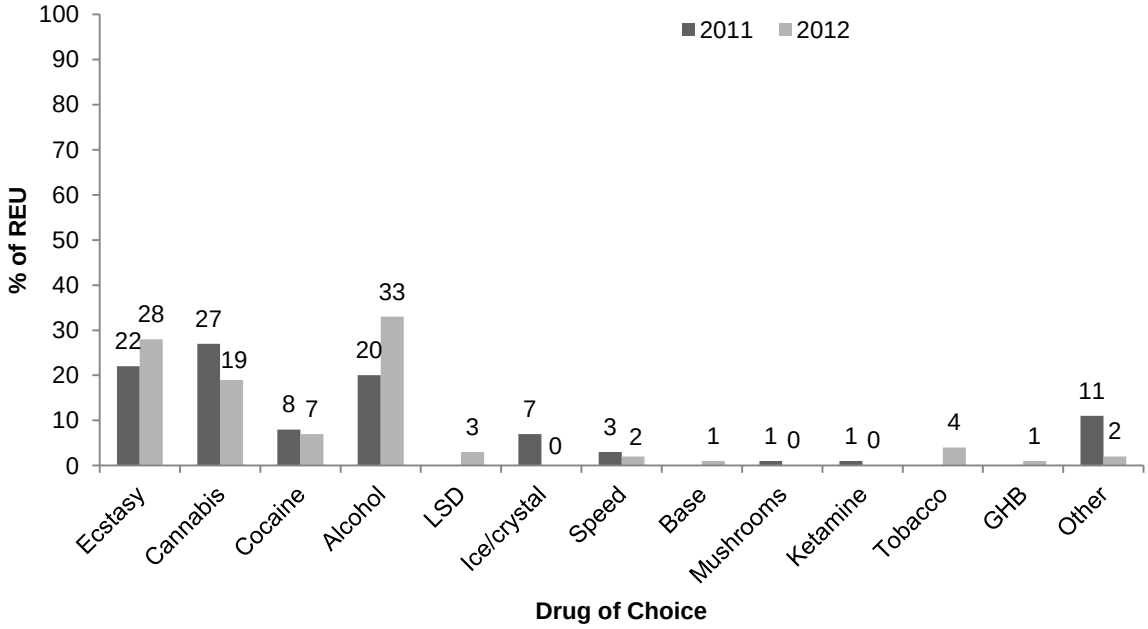
4.1.1 Injecting drug use

In 2012, 7% of the sample (n=6) reported having ever injected any drug, and of those 83% (n=5) reported injecting in the 6 months prior to interview. This has remained relatively stable from 2011. See Section 7.1 'Injecting risk behaviour' for further analyses on injecting and injecting-related risk behaviour.

4.1.2 Drug of choice and binge drug use

Figure 1 shows the main drug of choice nominated by participants in 2012. Alcohol was the preferred drug of choice for 33% of the sample, followed by ecstasy (28%). It is interesting to note that this is the second consecutive year in which ecstasy was not the most popular drug of choice nominated by REU; inversely it is the first time in the history of the SA EDRS that alcohol has been the main drug of choice. The next most preferred drug was cannabis (19%) and then cocaine (7%). There were no significant differences from 2011.

Figure 1: Drug of choice of REU, 2011 & 2012



Source: EDRS participant interviews

Participants were asked whether they had binged on ERD in the six months preceding interview. Bingeing was defined as using drugs on a continuous basis for more than 48 hours without sleep (Ovendon & Loxley, 1996). The proportion of participants who reported bingeing on ERD within the six months prior to interview was 55%, a slight increase from 2011 (48%). Bingeing occurred on a median of two occasions (range 1-24) with the median length of the longest binge being two and a half days (60 hours, range 48-216). The frequency remained stable from 2011, whilst the duration of the binge episode was slightly higher compared to 2011 which reported a median longest binge of 55 hours (range 48-120).

Amongst those who had binged for over 48 hours, alcohol emerged as the drug most commonly used in a binge session (47%). Ecstasy (43%), methamphetamine (41%), tobacco (39%) and cannabis (30%) were also commonly reported as being used in a binge session. Other drugs which were used in a binge session are listed in Table 3, and remain relatively stable from 2011.

Table 3: Proportion of participants reporting use of various drugs during a 'binge'* episode in the last six months, 2010-2012

Drug	Percent of whole sample to include drug in 'binge' episode in the last 6 months		
	2010 (n=92)	2011 (n=76)	**2012 (n=91)**
Ecstasy	32	40	**43**
Meth powder	11	11	**12**
Meth base	10	9	**10**
Meth crystal	12	21	**19**
Pharmaceutical stimulants	3	3	**1**
Cocaine	10	7	**8**
LSD	8	4	**1**
Mushrooms	1	4	**2**
MDA	1	3	**2**
Ketamine	0	3	**1**
GHB	2	3	**2**
Amyl nitrate	0	1	**1**
Nitrous oxide	2	7	**3**
Cannabis	17	28	**30**
Alcohol	24	38	**47**
<5 std drinks	1	3	**6**
>5 std drinks	23	36	**42**
Other	2	3	**4**
Benzodiazepines	0	5	**4**
Tobacco	22	36	**39**
Energy drinks	16	13	**10**

Source: EDRS participant interviews

* Defined as an episode of use of ecstasy and/or related drugs for >48 hours continuously, without sleep

4.1.3 Frequency of use in REU

In 2012, participants were asked how often they used ERD. The majority of responses reported between monthly and weekly use. In comparison to 2011, there has been a small increase in > weekly use and a slight decrease in monthly use. Only a small proportion reported using ecstasy and related drugs on a daily basis.

Table 4: Frequency of ERD use in the REU sample, 2011 & 2012

	2011	2012
	(n=76) %	(n=92) %
Not in the last month	1	0
Monthly	22	16
Fortnightly	37	37
Weekly	30	30
More than once a week	5	13
Once a day	1	2
More than once a day	3	1

Source: EDRS REU interviews

4.1.4 Change in trends of ERD use

KE and REU participants were asked to report if there was anything new happening in relation to drug use, such as new drugs, patterns etc. in the last six months. Fifty-two percent of the REU sample indicated that there had been some recent change in drug use.

Most commonly reported by participants:

> The primary theme to emerge was that there had been an increase in drug use, or that people had switched to different/new drugs (n=38). Participants reported using a range of new drugs (e.g. 'tripstacy' (ecstasy combined with LSD), DMT, LSA, 2CI, 2CB, pharmaceutical stimulants), as well as switching to some of the more established drugs such as methamphetamine and cocaine.

4.2 Ecstasy use

Key Findings

- The median age of first use remained stable at 17 years of age.
- There were no significant gender differences, for either age of first use or age of first regular use.
- Participants reported using ecstasy a median of 13 days in the preceding six months, stable from 2011.
- The proportion of participants who reported using more than one pill in a typical session, and who had consumed ecstasy in a binge session, remained relatively stable in 2012.
- Swallowing was the primary route of administration for both ecstasy pills and capsules, whilst snorting was the main ROA for ecstasy powder.
- Approximately half of the sample (49%) reported that the last time they consumed ecstasy they had been at a nightclub.

4.2.1 Ecstasy use among REU

Table 5 summarises the ecstasy use patterns of the participant sample across 2005 to 2012. The median age at which participants first tried ecstasy was 17 years (SD=4.3; range 13-40; n=92), with 77% of the sample being 18 or under. Participants reported that regular (at least monthly) ecstasy use occurred at a mean age of 19 years (SD =4.11) and at the median age of 18 years (range 14-40 years). There were no significant differences in terms of gender, for either age of first use or age or first regular use.

In 2012, participants were asked to provide information on their use of ecstasy pills, powder and capsules[2]. The median number of days participants reported using any ecstasy (pills, powder or capsules) within the previous six months was 13 (range 5-74; n=92); this was stable from 2011.

Forty-five percent of the sample reported using ecstasy (any form) once a fortnight or less (57% reported such use in 2011). Forty percent of participants reported using ecstasy between fortnightly and weekly (30% reported such use in 2011). The proportion of participants who reported use of ecstasy more than weekly was 15% (13% in 2011). Twenty-four days within six months equates to once weekly use on average. Readers are reminded that the minimum frequency of use of six days corresponds to the survey entry requirement for participants.

Participants reported that the median number of ecstasy tablets used in a typical session was two and a half tablets (range 0.75-15; n=89) and this has remained stable since 2004. There was no change in the median 'most' amount typically used in a single session, with a median of five tablets (range 1-40; n=89) reported by participants in 2012. The majority (92%) of REU reported that they typically used more than one tablet and just over a half (51%) reported using over two tablets per session. Forty-three percent reported having binged on ecstasy in the preceding six months and, amongst those who had reported

[2] This is the sixth year we have distinguished capsules from pills as a form of ecstasy.

bingeing on ecstasy, the longest binge session reported was a median of 60 hours (range 48-216 hours). This was stable from 2011.

Table 5: Patterns of ecstasy use among the participants, 2005–2012

	2005 (n=100)	2006 (n=101)	2007 (n=100)	2008 (n=74)	2009 (n=100)	2010 (n=92)	2011 (n=76)	2012 (n=92)
Median age first used ecstasy (years)	18	18	18	18	17	18	17	**17**
Median age first used ecstasy regularly (years)	19	19	19	19	19	19	19	**18**
Median days used ecstasy in the last six months (range)	15 (6-96)	12 (6-96)	12 (6-72)	12 (6-96)	16 (5-74)	12 (6-120)	12 (6-120)	**13 (5-74)**
Median tablets in typical session* (range)	2 (0.25-6)	2 (0.5-10)	2 (1-8)	2 (1-10)	2 (0.5-10)	2 (0.5-24)	2.5 (1-10)	**2.5 (0.75-15)**
Typically use >1 tablets (%)	73	80	80	70	81	81	83	**92**
Recently binged** on ecstasy (%)	57	55	59	27	38	32	40	**43**
Ever injected# ecstasy (%)	9	10	14	18	6	8	7	**3**
Use other drugs with ecstasy (%)	87	93	95	99	77	91	90	**98**
Use other drugs to come down from ecstasy (%)	83	85	85	81	60	54	67	**53**

Source: EDRS participant interviews
* A session was defined as a period of continuous drug use
** A binge was defined as an episode of use of party drugs or stimulants for >48 hours continuously, without sleep
# Refers to ecstasy 'pills' only; excludes powder and capsules
Note: Medians rounded to nearest whole number

4.2.2 Other drug use with ecstasy and when coming down from ecstasy

In regards to their last episode of ecstasy use, participants were asked to provide detail on the other substances they had used either 'with ecstasy', or when 'coming down' from ecstasy. The results are presented in Table 6.

The large majority of participants (98%) reported that on their last occasion of use, they had used other drugs in combination with ecstasy. This was a slight (albeit non-significant) increase from 2011 (90%). The most commonly used drug in this context was alcohol (82%), followed by tobacco (53%), cannabis (44%) and methamphetamine (15%). The use of other drugs in combination with ecstasy was very low. In comparison to 2011, there was a

significant decrease in the use of methamphetamine powder in combination with ecstasy (p=0.02; 95% CI: 0.03–0.2), whilst the use of other drugs remained stable.

Just over half of the sample reported that, on their last episode of ecstasy use, they had used other drugs to come down from ecstasy. This was a slight, although non-significant, decrease from 2011. Cannabis was the drug most commonly used by participants to come down from ecstasy, followed by tobacco and benzodiazepines. The use of other drugs to come down from ecstasy was uncommon.

Table 6: Proportion of participants reporting use of other drugs in combination with, and coming down from, ecstasy: by drug type, 2011 & 2012

Drug	Used in combination with ecstasy (% of participants)		Coming down from ecstasy (% of participants)	
	2011 (n=76)	**2012 (n=91)**	2011 (n=76)	**2012 (n=91)**
Methamphetamine powder	15	**3***	0	**0**
Methamphetamine base	9	**6**	1	**1**
Methamphetamine crystal	15	**6**	0	**0**
Pharmaceutical stimulants	0	**1**	0	**0**
Cocaine	4	**7**	0	**0**
LSD	4	**1**	0	**0**
MDA	4	**0**	0	**0**
Mushrooms	0	**0**	0	**0**
Ketamine	1	**1**	3	**0**
GHB	1	**1**	0	**1**
Amyl nitrate	1	**1**	0	**0**
Nitrous oxide	5	**1**	1	**0**
Cannabis	49	**44**	53	**39**

Source: EDRS participant interviews
*$p < 0.05$

Table 6: Proportion of participants reporting use of other drugs in combination with, and coming down from, ecstasy: by drug type, 2011 & 2012 (continued)

Drug	Used in combination with ecstasy (% of participants)		Coming down from ecstasy (% of participants)	
	2011 (n=76)	**2012 (n=91)**	2011 (n=76)	**2012 (n=91)**
Alcohol:	75	**82**	13	**4**
< 5 standard drinks	5	**12**	0	**2**
> 5 standard drinks	70	**70**	13	**2**
OTC codeine	3	**0**	3	**2**
Benzodiazepines	8	**3**	13	**9**
Tobacco	62	**53**	13	**10**
Energy Drinks	15	**6**	0	**0**
Other	4	**4**	5	**7**
Any	90	**98**	67	**53**

Source: EDRS participant interviews

4.2.3 Route of administration

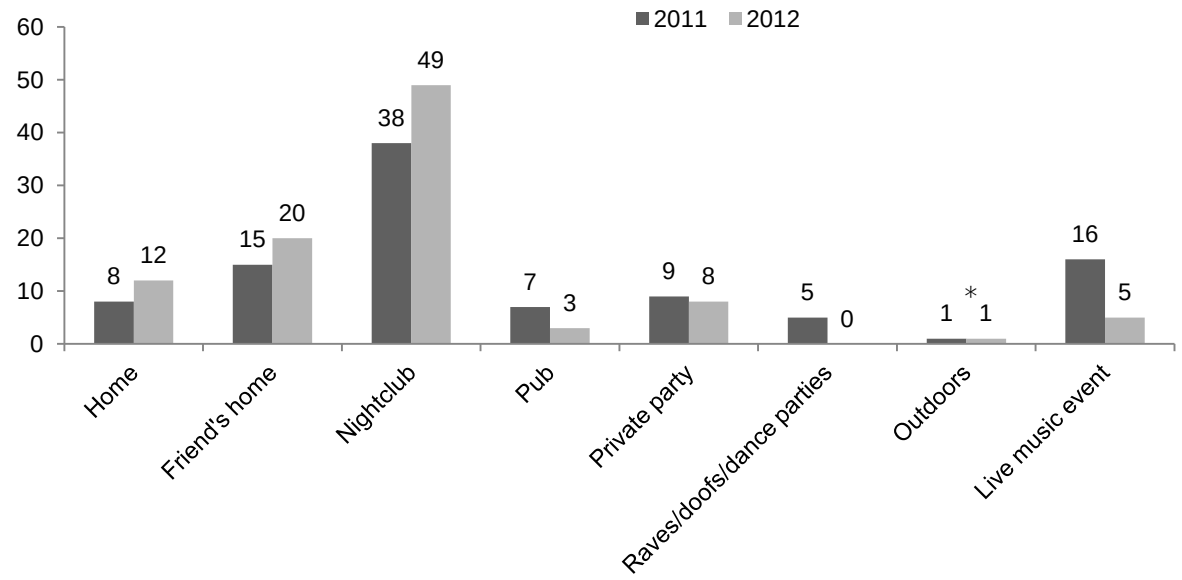
In the six months preceding the interview, 98% of participants had swallowed ecstasy pills (100% in 2011), 65% had snorted them (76% in 2011), 9% had shelved/shafted them (8% in 2011) (refers to vaginal/anal administration respectively), 3% had smoked them (7% in 2011) and 1% had injected ecstasy pills (1% in 2011). Ecstasy capsules were predominantly swallowed (28% in 2012 vs. 33% in 2011), although 16% had snorted them (18% in 2011), 2% had smoked them (0% in 2011) and 2% had shelved/shafted them (0% in 2011). No participants had injected ecstasy capsules in the preceding six months (stable from 2011). Ecstasy powder was swallowed by 7% of the sample in the preceding six months (21% in 2011), snorted by 10% (24% in 2011) and smoked by two participants. No participants reported having shelved/shafted or injected ecstasy powder during that time. The vast majority of participants (94%) nominated oral ingestion as their main route of ecstasy administration, which was a significant increase from 2011 (79%; p=0.01; 95% CI: -0.26− -0.04). Inversely, there was a significant decrease in the proportion of REU who reported snorting as their main ROA (20% in 2011 versus 7% in 2012; p=0.02; 95% CI: 0.03–0.24). No participants reported smoking, shelving or injecting as their main route of administration.

There were a number of changes in the reported routes of administration for both recent and lifetime use of ecstasy. In relation to lifetime prevalence, the main changes occurred around snorting as a route of administration. More specifically, there was a significant reduction in the proportion of REU who reported having snorted powder in their lifetime (45% in 2011 versus 28% in 2012; p=0.04; 95% CI: 0.017–0.3). There was also a slight reduction in the lifetime prevalence of snorting ecstasy pills (91% in 2011 versus 86% in 2012), and a slight

increase in the lifetime prevalence of snorting capsules. Similarly, there was a significant decline in the proportion of REU who had snorted powder in the preceding six months (24% in 2011 versus 10% in 2012; p=0.02; 95% CI: 0.03–0.26), as well as a significant decline in those who had recently swallowed methamphetamine powder (21% in 2011 versus 7% in 2012; p=0.01; 95% CI: 0.04–0.26). Prevalence of recent use by other routes of administration (smoking, injecting or shelving) remains low.

Figure 2 presents the types of locations that participants 'last used' ecstasy. It should be noted that participants were asked to consider where they were for the majority of the time they were 'under the influence' of the drug, not where they were when they 'took [administered] the drug'. The location of last ecstasy use by participants while intoxicated in the six months prior to interview was at a nightclub (49%), followed by home (32%) (own home or a friend's home), with fewer numbers reporting a private party (8%), live music event (5%), pub (3%) or outdoors (1%).

Figure 2: Location of last ecstasy use by participants, 2011 & 2012



Source: EDRS participant interviews
*p<0.05

4.2.5 Use of ecstasy in the general population

The Australian Institute of Health and Welfare has conducted household surveys over the last decade and collected data on the prevalence of use of various illicit drugs among the general population of Australia (Australian Institute of Health and Welfare, 2008).

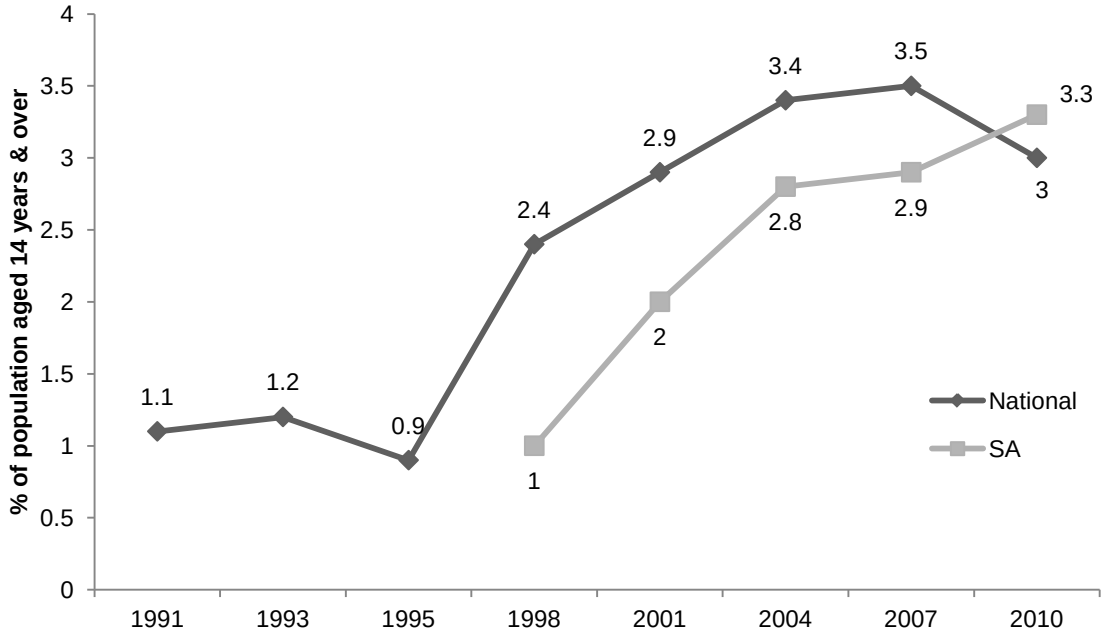
Figure 3 shows the long-term trend in the prevalence of ecstasy use in Australia from 1991 to 2010 and in South Australia from 1998 to 2010. As can be seen, from 1995−2007 there was a rapid increase in the prevalence of ecstasy use in the previous 12 months. However, in 2010 (for the first time since 1995) there was a statistically significant decline in recent ecstasy use. This decrease was seen among males and those aged between 14−19 years (Australian Institute of Health and Welfare, 2011). Recent use of ecstasy remained most prevalent among 20 to 29 year olds, with one in ten (9.9%) having used ecstasy in the previous 12 months. In general, males were more likely to be recent users of ecstasy except

among 12 to 17 year olds, where the rates were virtually equal (males 0.7% versus females 0.8%) (Australian Institute of Health and Welfare, 2011). Of those that had used ecstasy in the last 12 months, half reported using once or twice a year (53.1%), almost a third reported using every few months (31.4%), 12.2% reported monthly use and 3.3% reported daily or weekly use during that period (Australian Institute of Health and Welfare, 2011).

Figure 3 also shows that in 2010, for the first time, South Australia had a slightly higher prevalence of recent use of ecstasy than among the national population (3.3% versus 3.0%). The prevalence of recent use of ecstasy reported in 2010 (SA) was the highest recorded since data collection began for this survey.

In 2010, 10.3% of the Australian population aged 14 years and older had ever used ecstasy, an increase from 8.9% in 2007. Again, lifetime use of ecstasy was highest amongst those in the 20 to 29 year age group (24%) (Australian Institute of Health and Welfare, 2011).

Figure 3: Prevalence of recent* ecstasy use in Australia and South Australia, 1991–2010



Sources: National Campaign Against Drug Abuse Household Survey 1991, 1993; National Drug Strategy Household Survey 1995, 1998, 2001, 2004, 2007, 2010 (Australian Institute of Health and Welfare, 2005, 2008, 2011); Drug and Alcohol Services internal document 2008

* Used at least once in the last 12 months

Note: In the 2001 and earlier surveys, ecstasy was analysed as ecstasy/designer drugs, the term 'designer drugs' not being defined in the survey. The 2004 survey separated out ecstasy, ketamine and GHB and did not cover any other 'designer drugs'

Similar to the EDRS sample, the majority of recent users of ecstasy surveyed by the National Drug Strategy Household Survey (NDSHS) in 2010 reported that they had typically obtained ecstasy from a friend or acquaintance (68%), although there was a statistically significant increase in those obtaining ecstasy from a dealer (21.6% in 2007 versus 28.3% in 2010). The most common place to use ecstasy was at raves/dance parties (61.7%), with large proportions also using at public establishments (55%) and private parties (52.9%) (Australian Institute of Health and Welfare, 2011). This has remained relatively stable from 2007.

4.3 Methamphetamine use

Key Findings

- Lifetime use of methamphetamine remained stable at 74%, although there was a significant decrease in recent (past six month) use of 'any' methamphetamine.
- Frequency of use, for all three forms of methamphetamine, remained relatively stable in 2012.
- Median age of first use remained stable for powder and crystal methamphetamine, whilst increasing slightly for base.
- Smoking emerged as the most common route of administration for all forms of methamphetamine.

4.3.1 Methamphetamine use among REU

Whilst the majority (74%) of participants reported having used one or more forms of methamphetamine (speed, base and/or ice/crystal) at some stage during their lifetimes (stable from 2011), there was a significant decrease in the recent use of any form of methamphetamine (48% in 2012 versus 67% in 2011; p=0.02; 95% CI: 0.04–0.3). Six participants reported having ever injected methamphetamine. The median number of days used was 6 (range 1-150).

The distinction between three forms of methamphetamine continued in the 2012 survey. For a detailed commentary on the reasons for the differentiation into three distinct types, see White, Breen & Degenhardt (2003). The three forms of methamphetamine discussed are powder, base and ice/crystal methamphetamine.

4.3.2 Methamphetamine powder (speed)

Table 7 summarises the patterns of use of methamphetamine powder among the participants in 2012, with 2011 data for comparison. In 2012, participants reported having first used powder at a median of 18 years (range 14-23 years). Fifty-nine percent of participants reported lifetime use, and 24% of participants reported using methamphetamine powder in the six months prior to interview (declining significantly from 2011). A closer analysis of frequency of use revealed that 68% (n=15) of methamphetamine powder users had used once a month or less. A further 23% (n=5) reported using between monthly and fortnightly, and the remaining 9% (n=2) reported using on a greater than weekly basis.

With respect to the 'average' and 'most' amounts used in a single session of use, a larger number of participants provided information in terms of grams rather than points or lines. The median amount of grams used in a session was 1 (range 0.2-2), and the median amount of points was 2 (range 1-2). The 'most' amount of powder methamphetamine used in a single session reported by participants was also a median of 1 grams (range 0.5-5.5) and the median number of points was 1.5 (range 1.4-4). Compared to 2011, the 'average' and 'most' quantities reported remained relatively stable. Readers are reminded, however, that

the measure of a 'point' is likely to be variable and unreliable as a measure of quantity actually consumed.

Most users of methamphetamine powder reported smoking (55%) or snorting (55%) as a route of administration in the six months prior to interview. Forty-six percent reported having swallowed and 14% reported having injected powder, in that same time period. There were no significant changes from 2011; however, it was interesting to see smoking emerge as the main route of administration (equal to snorting). The proportion of participants reporting bingeing on powder methamphetamine increased slightly in 2012 (12% versus 22% in 2011).

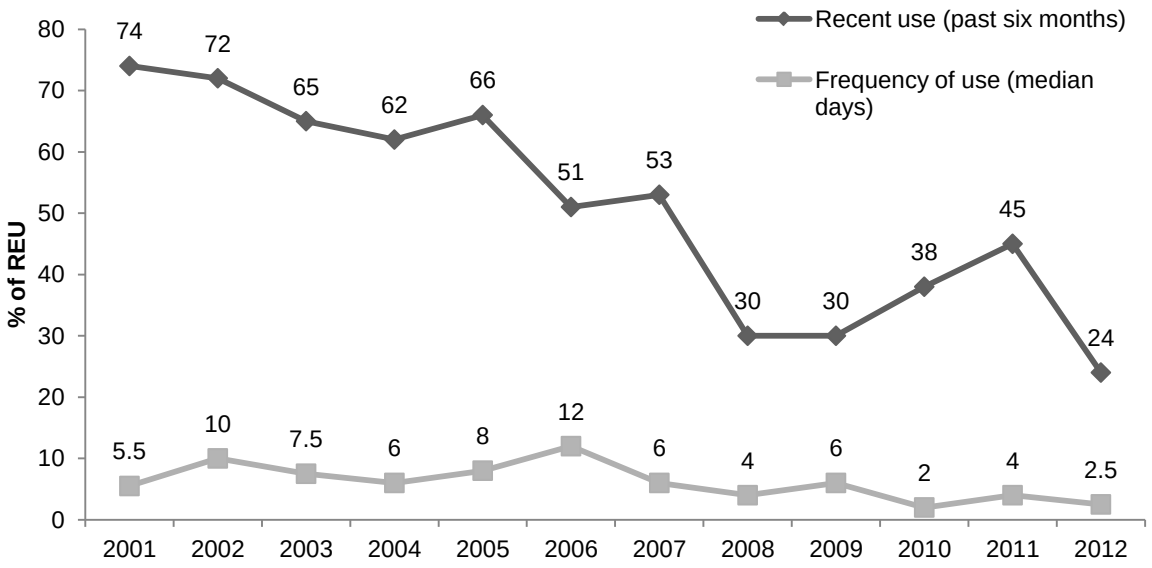
Table 7: Patterns of methamphetamine powder use and route of administration of methamphetamine powder among the participant sample, 2011 & 2012

	2011 (n=76)	**2012 (n=92)**
Age first used: median in years (range)	18 (15-29)	**18 (14-23)**
Ever used (lifetime) (%)	67	**59**
Used in last 6 months (%)	45	**24****
Days used in last 6 months[#]: median (range)	4 (1-96)	**2.5 (1-90)**
Average amount used in a single session[*]:		
Grams: median (range; n)	0.85 (0.1-3.0; 22)	**1 (0.2-2.0; 15)**
Points: median (range; n)	1 (0.25-4.0; 6)	**2 (1-2; 5)**
Lines: median (range; n)	-	**-**
Most amount used in a single session[*]:		
Grams: median (range; n)	1.5 (0.1-5.0; 23)	**1 (0.5-5.5; 16)**
Points: median (range; n)	1.5 (0.25-6.0; 6)	**1.5 (1-4; 4)**
Lines: median (range; n)	-	**-**
Routes of administration recent use[#] (%):	(n=34)	**(n=22)**
Swallowing	62	**46**
Snorting	62	**55**
Smoking	44	**55**
Injecting	9	**14**

Source: EDRS participant interviews
[#] Of those who reported use in the last 6 months
[*] A session was defined as a period of continuous drug use without sleep, in the last 6 months
**p<0.01

An analysis of trends over time (see Figure 4) revealed that between 2003 and 2009 there was a steady decline in the proportion of participants reporting recent use of powder methamphetamine. From 2010−2011, it appeared that the use of methamphetamine powder may be on the rise again; however, this upward trend came to a halt in 2012 with 24% of REU reporting recent use of methamphetamine powder (p=0.008; 95% CI: 0.06–0.34). The median number of days used in the last 6 months has remained relatively stable at 2.5 days.

Figure 4: Methamphetamine powder – trends in recent use and median days used, 2001–2012



Source: EDRS participant interviews

4.3.3 Methamphetamine base

Table 8 summarises the patterns of use of methamphetamine base reported by participants in 2012. The median age of first use was 19 years (range 14-42). Forty-one percent of the sample had used in their lifetime, with 24% of participants reporting that they had used methamphetamine base in the six months prior to interview. Analysis of the frequency of use over the previous 6 months revealed that 64% (n=14) of base users had used once a month or less, 27% (n=6) reported using greater than monthly and up to once per fortnight, and two participants (9%) reported using more than weekly.

With respect to the 'average' and 'most' amounts used in a session of use, most participants provided information in terms of 'points' of base, with considerably fewer participants commenting on the use of grams. The 'average' amount of base methamphetamine used in a session reported by participants was a median of two points (range 0.50-14). The median 'most' amount of points of powder methamphetamine used in a session was 2.2 (range 0.50-30) Compared to 2011, there has been little change in the 'average' or 'most' amounts of points or grams consumed.

Participants who had used methamphetamine base in the last six months reported having used by smoking (73%), swallowing (64%), snorting (32%), and/or injecting (14%). Readers should note that smoking base methamphetamine overtook snorting in 2007 and remained the second most popular route of administration until 2010. In 2011, smoking equalled swallowing as the main route of administration for methamphetamine base, and in 2012 smoking emerged as the most dominant ROA. The proportion of participants reporting bingeing on base methamphetamine in 2012 was 10%.

Table 8: Patterns of methamphetamine base use and route of administration of methamphetamine base among the participant sample, 2011 & 2012

	2011 (n=76)	**2012 (n=92)**
Age first used: median in years (range)	18 (15-38)	**19 (14-42)**
Ever used (lifetime) (%)	41	**41**
Used in last 6 months (%)	24	**24**
Days used in last 6 months[#]: median (range)	5 (1-150)	**5.5 (1-120)**
Average amount used in a single session[*]:		
Grams: median (range; n)	0.5 (n=1)	**1 (n=1)**
Points: median (range; n)	2 (0.5-20; 15)	**2 (0.5-14; 20)**
Most amount used in a single session[*]:		
Grams: median (range; n)	0.5 (n=1)	**1 (0.5-2;5)**
Points: median (range; n)	3 (0.5-30; 15)	**2.2 (0.5-30; 16)**
Routes of administration recent use[#] (%):	(n=18)	**(n=22)**
Swallowing	83	**64**
Snorting	39	**32**
Smoking	83	**73**
Injecting	17	**14**

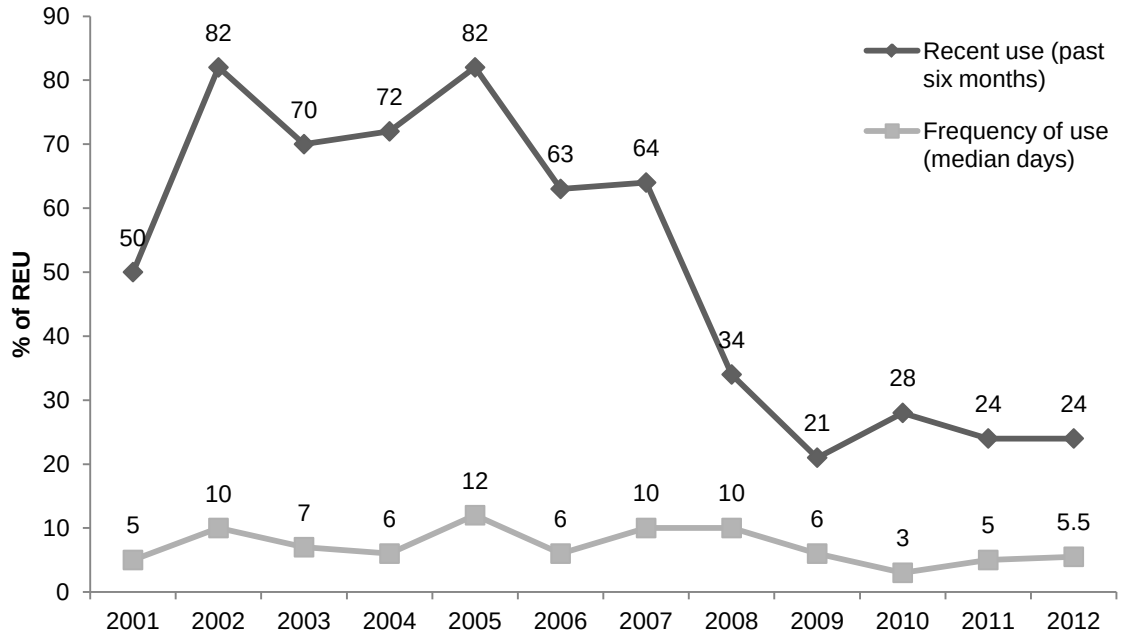
Source: EDRS participant interviews

[#] Of those who reported use in the last 6 months

[*] A session was defined as a period of continuous drug use without sleep, in the six months prior to interview

An analysis of trends over time (see Figure 5) reveals that the recent use of base methamphetamine has fluctuated over time, with a steady decline being noted from 2005−2009. From 2009 onwards, the prevalence of recent use has plateaued. The median number of days used in the last 6 months remained stable at 5.5 days.

Figure 5: Methamphetamine base – trends in recent use and median days used, 2001–2012



Source: EDRS participant interviews

4.3.4 Crystal methamphetamine

Table 9 presents the patterns of use of ice/crystal methamphetamine by participants in 2012, with 2011 data for comparison. In 2012, the median age of first use was 19 years (range 14-42 years). Fifty-three percent of participants had used ice/crystal in their lifetime. Thirty-two percent of participants reported using crystal methamphetamine in the preceding six months, for a median of six days (range 1-48).

Seventy-nine percent (n=23) of crystal users had used once a month or less, 7% (n=2) reported using greater than monthly and up to once per fortnight, 7% (n=2) reported using between fortnightly and weekly and 7% (n=2) reported using greater than weekly.

With respect to the 'average' and 'most' amounts used in a single session of use, most participants provided information in terms of 'points' of crystal, with a limited number commenting on the use of grams. The median number of points used in an 'average' single session was one (range 0.25-7) and the median 'most' amount used in a single session was 2.25 points (range 0.25-30). Compared to 2011, participant reports in 2012 of 'average' and 'most' amounts used in a session remained relatively stable.

Participants who had used ice/crystal methamphetamine in the previous six months reported smoking (90%), swallowing (52%), snorting (14%) and/or injecting (10%) as the route of administration in that time. Routes of administering crystal methamphetamine remained stable in 2012, with smoking continuing to be the preferred ROA. The proportion of participants reporting bingeing on crystal methamphetamine in 2012 was 19%.

Table 9: Patterns of crystal methamphetamine use and route of administration of crystal methamphetamine among the participant sample, 2011 & 2012

	2011 (n=76)	**2012 (n=92)**
Age first used: median in years (range)	19 (15-38)	**19 (14-42)**
Ever used (lifetime) (%)	50	**53**
Used in last 6 months (%)	43	**32**
Days used in last 6 months[#]: median (range)	5.5 (1-150)	**6 (1-48)**
Average amount used in a single session[*]:		
Grams: median (range; n)	0.1 (n=1)	**1 (0.5-1; 3)**
Points: median (range; n)	1 (0.5-20; 27)	**1 (0.25-7; 25)**
Most amount used in a single session*:		
Grams: median (range; n)	1 (0.25-2; 3)	**1 (0.5-1; 3)**
Points: median (range; n)	2 (0.5-30; 25)	**2.25 (0.25-30; 24)**
Routes of administration recent use[#] (%):	(n=33)	**(n=29)**
Swallowing	67	**52**
Snorting	30	**14**
Smoking	76	**90**
Injecting	12	**10**

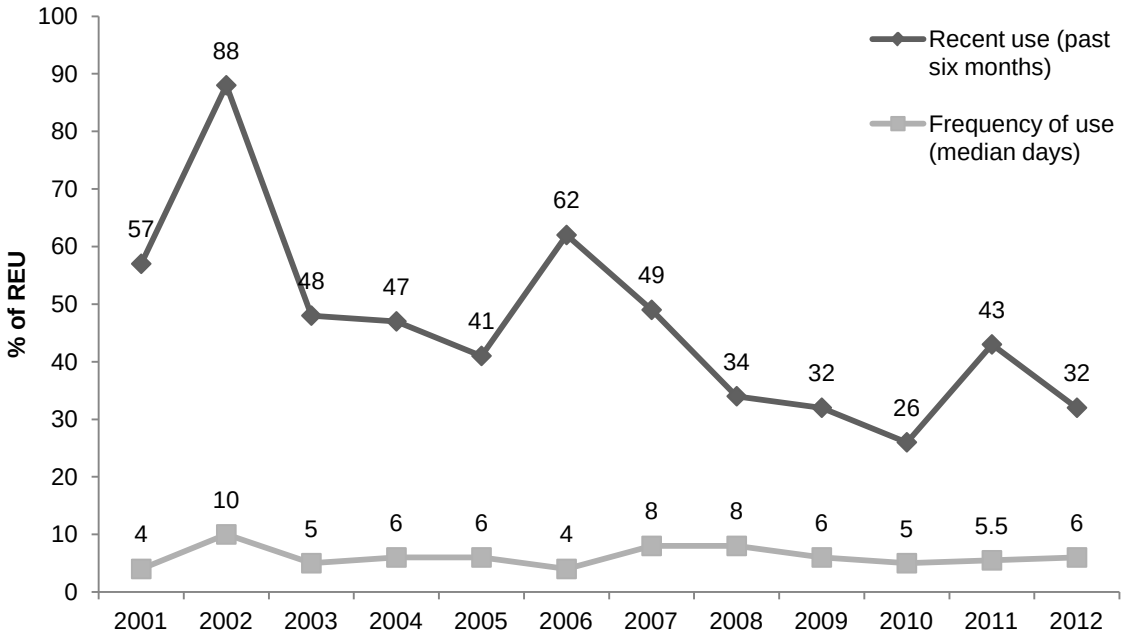
Source: EDRS participant interviews

[#] Of those who reported use in the 6 months prior to interview

[*] A session was defined as a period of continuous drug use without sleep, in the last six months

An analysis of trends over time (see Figure 6) reveals that, after a steady decline of recent use of crystal methamphetamine from 2006−2010, there was a significant increase in 2011 (p=0.028; 95% CI: -0.029 – -0.31) and a subsequent decrease (albeit non-significant) in 2012. The median number of days used in the preceding six months has remained stable.

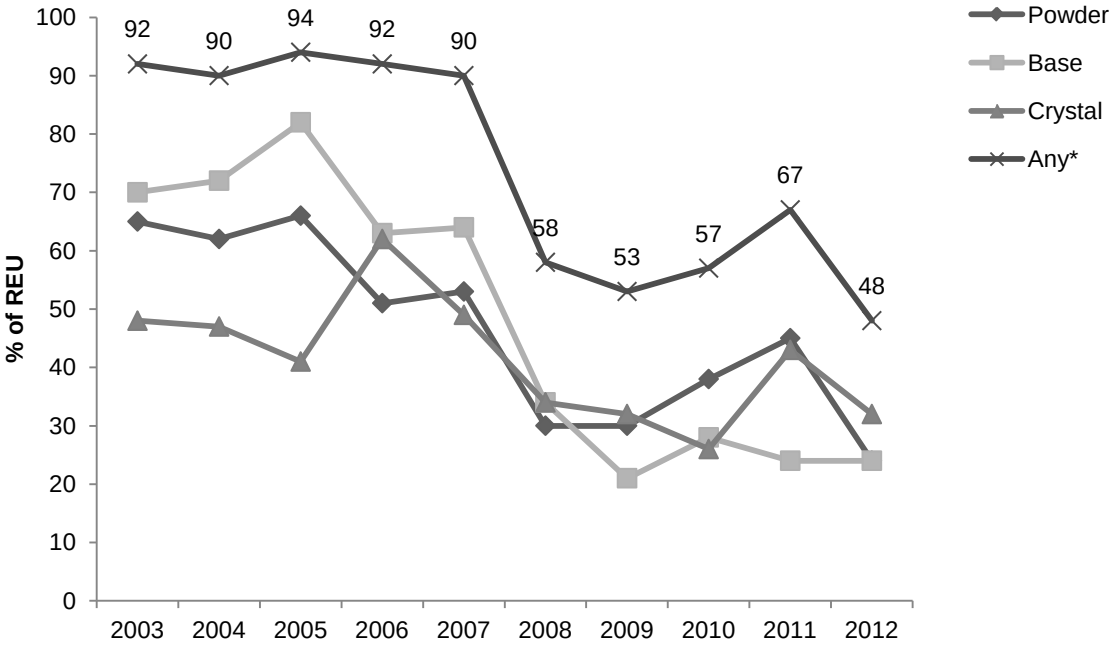
Figure 6: Methamphetamine crystal – trends in recent use and median days used, 2001–2012



Source: EDRS participant interviews

Figure 7 presents trends in recent methamphetamine (main forms) use from 2003 to 2012. In 2012, there was a significant decrease in the prevalence of recent use of 'any' methamphetamine (collapsed data) among REU (p=0.019; 95% CI: 0.04–0.3). This decline was largely driven by a significant decline in the use of methamphetamine powder, whilst the use of base and crystal remained relatively stable.

Figure 7: Trends in recent use of the main forms of methamphetamine, 2003–2012



Source: EDRS participant interviews
* Collapsed powder, base and crystal categories

Information about where methamphetamine users spent the most time whilst they were intoxicated is presented in Table 10. The most common venue for all forms of methamphetamine was at a friend's home, followed by a nightclub.

Table 10: Venue where participants spent the most time whilst intoxicated on methamphetamine, 2012

	Where did spend the most time while intoxicated?		
	Powder (%) (n=17)	**Base (%) (n=15)**	**Crystal (%) (n=22)**
Home	**12**	**0**	**9**
Friend's home	**59**	**73**	**45**
Dealer's home	**0**	**0**	**0**
Nightclub	**17**	**13**	**23**
Private party	**6**	**0**	**9**
Pub	**0**	**0**	**9**
Rave	**0**	**0**	**0**
Live music event	**0**	**0**	**5**
Work	**6**	**13**	**0**

Source: EDRS participant interviews

Key Expert Comments

- The majority of KE noted that their clientele didn't distinguish between speed, base and ice; rather, they just referred to meth/amphetamines more generally. However, it was generally agreed that crystal is the most popular form of methamphetamine being used.
- Of those able to answer, there seemed to be a general consensus that there was an increase in the prevalence of methamphetamine use which, interestingly, is in stark contrast to the significant decline observed in the EDRS data.
- KE raised a number of concerns regarding methamphetamine, including an increase in associated violence, earlier onset and initiation of use, and an increase in use among indigenous users (perhaps due to the closure of a number of their drinking spots and the emergence of methamphetamine as a relatively cheap alternative).
- When asked what drug they considered to be most problematic at the moment, virtually all KE nominated methamphetamine. The reasons for this were varied and ranged from the fact that it was highly prevalent, to the psychical (e.g. cardiovascular problems; strokes) and mental (e.g. aggression; psychosis) impacts it can have on the individual and their family/friends.

4.4 Cocaine use

Key Findings

- The median age of first use was 19 years.
- Recent use of cocaine remained relatively stable at 37%.
- Frequency of use remained low and stable.
- Snorting continued to be the main route of administration.

4.4.1 Cocaine use among REU

The median age of first use of cocaine by participants was 20 years (range 15-46 years). In 2012, 66% of the sample reported having ever used cocaine, and 37% had used in the preceding six months (stable from 2011). The frequency of use also remained stable with a median of two days (range 1-14 days) in the six months prior to interview. The majority of recent cocaine users (74%) had used less than monthly (85% in 2011); 21% had used between monthly and fortnightly (9% in 2011); and 6% reported using between fortnightly and weekly (6% in 2011). No participants reported greater than weekly or daily use of cocaine.

The median amount of cocaine used in a typical or average session in the preceding six months was half of a gram (range 0.2-2 grams) and 2 lines (range 1-8 lines) The 'most' amount of cocaine used in a single session was a median of one gram (range 0.25-4) and 2 lines (1-6). The reported 'average' amount of grams was similar to that reported in 2011.

All cocaine users (n=34) reported recent use of cocaine by snorting (100%), followed by swallowing (21%) and shelving/shafting (3%). No participants in 2012 reported recent use by smoking or injecting. Twenty-one percent of recent cocaine users reported that they had binged on cocaine in the preceding six months.

Table 11: Patterns of cocaine use and route of administration among the participant sample, 2011 & 2012

	2011 (n=76)	**2012 (n=92)**
Age first used: median in years (range)	19 (14-29)	**20 (15-46)**
Ever used (lifetime) (%)	75	**66**
Used in last 6 months (%)	45	**37**
Days used in last 6 months*: median (range)	2 (1-20)	**2 (1-14)**
Average amount used in a single session**: Grams: median (range; n) Lines: median (range; n)	 1 (0.10-2; 27) 2 (n=1)	 **0.5 (0.2-2; 26)** **2 (1-8; 6)**

Source: EDRS REU interviews, 2011-2012

* Of those who reported use in the last six months

** A session was defined as a period of continuous drug use without sleep, in the last six months

Table 11: Patterns of cocaine use and route of administration among the participant sample, 2011 & 2012 (continued)

	2011 (n=76)	**2012 (n=92)**
Most amount used in a single session**:		
Grams: median (range; n)	1 (0.10-3; 28)	**1 (0.25-4; 27)**
Lines: median (range; n)	2 (n=1)	**2 (1-6; 5)**
Routes of administration recent use* (%):	(n=34)	**(n=34)**
Swallowed	32	**21**
Snorted	97	**100**
Smoked	6	**0**
Injected	0	**0**
Shelved/shafted	0	**3**

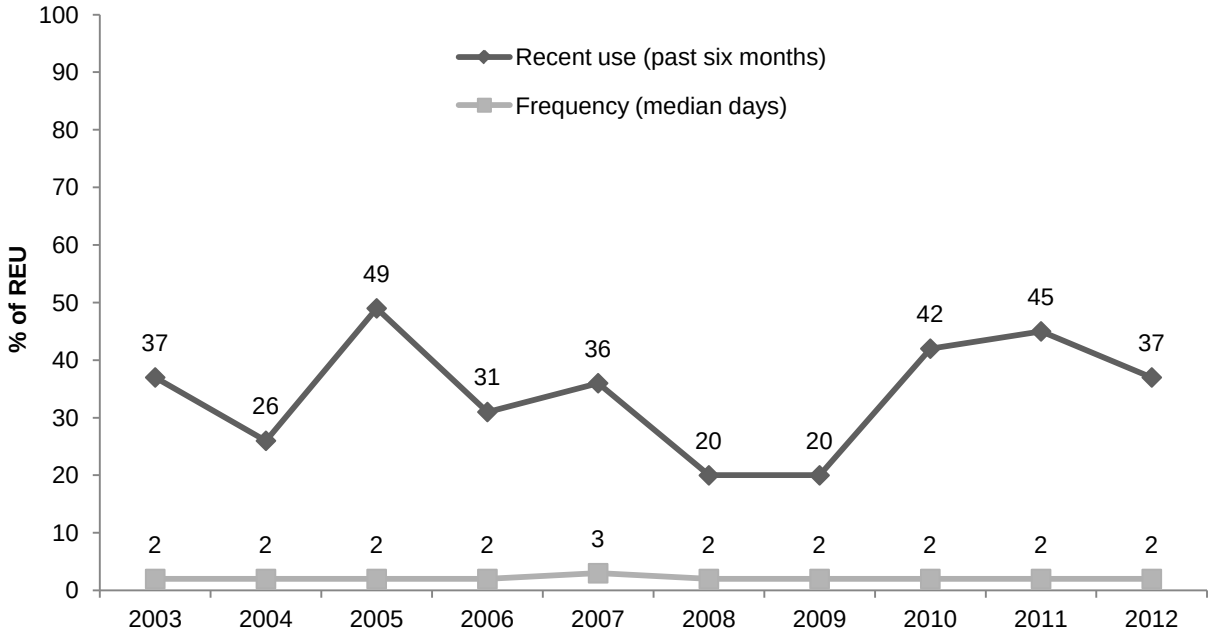
Source: EDRS REU interviews, 2011-2012

* Of those who reported use in the last six months

** A session was defined as a period of continuous drug use without sleep, in the last six months

As can be seen in Figure 8, recent use of cocaine has fluctuated considerably over the past decade. More recently, cocaine use doubled from 20% in 2009 to 42% in 2010, and then remained relatively stable from 2010−2012. The frequency of use has remained low and stable across the years.

Figure 8: Cocaine – trends in recent use and median days used, 2003–2012



Source: EDRS participant interviews

Twenty-six participants commented on the location of last use (i.e. where they spent the most time whilst intoxicated). The most common venues reported were: friend's home (n=7); nightclub (n=5); private party (n=4); and a live music event (n=2).

Key Expert Comments

- The majority of KE reported that they had little contact with cocaine users, and one KE reported that there had only been one cocaine seizure in 2012. It was agreed that cocaine use remains low and stable in SA.

4.5 LSD use

Key Findings

- The median age of first use was 18, stable from 2011.
- There was a slight decline in recent LSD use, although this did not reach significance. Frequency remained stable in 2012, with the majority of participants using less than monthly.
- The amount used in a typical and heavy session remained stable.
- Virtually all participants reported swallowing LSD.

4.5.1 LSD use among REU

The median age of first LSD use was 18 years (range 13-27 years). Fifty-two percent of participants reported having used LSD in their lifetime and 19% had used it in the last six months. Recent users reported having used LSD on a median of two days (range 1-15 days) in the six months prior to interview. The majority (77%) of recent LSD users had used less than monthly (82% in 2011); 12% used between monthly and fortnightly (5% in 2011); and 6% used between fortnightly and weekly (9% in 2011). No participants reported greater than weekly use.

The 'average' and 'most' amounts of LSD used in a single session were generally reported as tabs/trips, with a median amount of one tab/trip (range 0.5-4) used on 'average' and one tab/trip (range 1-4) also used in the heaviest recent session. The majority of LSD users reported recent use by swallowing (94%, n=16), and one participant also reported snorting and shelving LSD in the preceding six months. No other route of administration was reported. Only one participant reported bingeing on LSD in the preceding six months.

Table 12: Patterns of LSD use among the participant sample, 2011 & 2012

	2011 (n=76)	2012 (n=91)
Age first used: median in years (range)	**17 (14-20)**	**18 (13-27)**
Ever used (lifetime) (%)	**63**	**52**
Used in last 6 months (%)	**30**	**19**
Days used in last 6 months:* median (range)	**2 (1-20; 22)**	**2 (1-15; 17)**
Average amount used in a single session:** Tabs: median (range; n)	**1 (0.25-2; 20)**	**1 (0.5-4; 16)**
Most amount used in a single session:** Tabs: median (range; n)	**1 (0.5-4; 20)**	**1 (1-4; 16)**

Source: EDRS participant interviews

* Of those who reported use in the last six months

** A session was defined as a period of continuous drug use without sleep, in the last six months

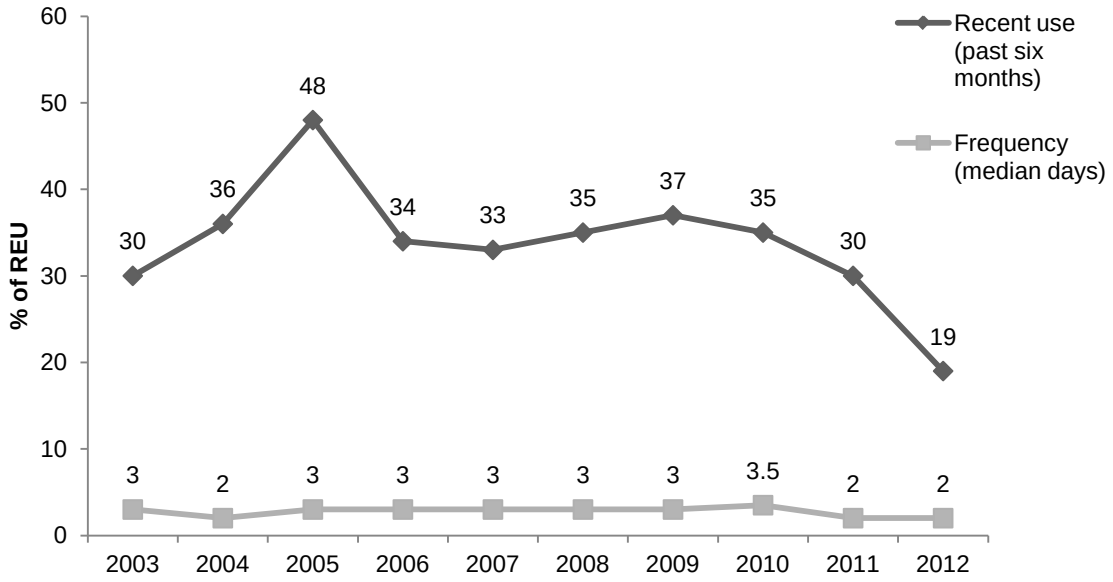
Table 12: Patterns of LSD use among the participant sample, 2011 & 2012 (continued)

	2011 (n=76)	2012 (n=91)
Routes of Administration* (%):	(n=23)	(n=17)
Swallowed	100	94
Snorted	13	6
Smoked	0	0
Shelved/Shafted	0	6
Injected	0	0

Source: EDRS participant interviews
* Of those who reported use in the last six months

An analysis of trends over time (see Figure 9) reveals that from 2006−2012 there has been an overall downward trend in the proportion of participants who reported recent use of LSD. In 2012, the proportion of REU who reported LSD use in the past six months reached its lowest level in the history of the SA EDRS. There has been little change in the frequency of use, with this parameter remaining consistently stable and low across the years.

Figure 9: LSD – trends in recent use and median days used, 2003–2012



Source: EDRS participant interviews

Of those who were able to comment (n=11), the majority reported that whilst intoxicated they spent the majority of their time at a private home (n=5) or outdoors (n=3).

Key Expert Comments

- Virtually all of the KE reported that the prevalence of LSD was very low and that they weren't seeing any use among their clientele. One KE noted that 'Death on Impact' (DOI) had replaced LSD, although another reported that there had been a decrease in DOI as well.

4.6 Cannabis use

Key Findings

- Median age of first use was relatively stable in 2012, with the majority of participants having first used cannabis at 15 years of age.
- Prevalence of cannabis use was exceptionally high, with 98% of REU reporting lifetime use and 88% reporting use in the preceding six months.
- Frequency of use remained stable in 2012, at a median of 48 days (approximately twice a week).
- On the last occasion of use, cannabis users reported using a median of three cones or two joints. This was relatively stable from 2011.
- The majority of cannabis users reported using in their own home, or at a friend's home.

To ensure more detailed information was collected on the different forms of cannabis, Section 5.5 was separated into 'hydro' (hydroponically grown) and 'bush' (grown outdoors) cannabis (Breen et al., 2004; Stafford et al., 2005). However, the use patterns reported below refer to any form of cannabis.

It should also be noted that the use of hashish (hash) and hash oil was rarely reported by REU participants (n<10); therefore, further details are not reported.

The current legal approach to cannabis use in South Australia is one of 'prohibition with civil penalties'. Under this approach, the production, possession or use of cannabis is illegal in South Australia. Any cultivation of a cannabis plant by hydroponic means will result in the accused being arrested/reported and required to attend court. A single cannabis plant grown in the ground, i.e. not grown hydroponically, will attract an expiation fee and the plant will be confiscated. More than one cannabis plant grown in the ground (bush cannabis), results in the accused being arrested and required to attend court. There are varying penalties for possession of cannabis offences and these penalties are dependent on the amount the person is located with. Under the Cannabis Expiation Notice Scheme, police issue the offender with an 'on-the-spot' fine notice. If the offender disagrees with any aspect of the charge, they can elect to go to court and defend the case rather than pay the expiation fee. Failure to pay the prescribed fee within the expiation period results in a summons being issued for the offender to appear in court. The original expiation fee becomes the fine, with the additional court costs.

4.6.1 Cannabis use among REU

In 2012, the median age at which participants first used cannabis was 15 years (range 11-20 years), slightly older than reported in 2011 (14 years, range 11-19). Further examination of the age at which participants first used cannabis reveals that 41% reported use by the age of 14 years, 83% by 16 years, and 97% by 18 years. Ninety-eight percent of the sample reported having used cannabis in their lifetime, and 88% had used in the preceding six months.

The frequency of cannabis use reported by participants in 2012 was a median 48 days (range 1-180 days); this was fairly stable compared to the frequency of use reported by participants in 2011 (50 days, range 1-180 days). Amongst recent cannabis users, 17% (n=14) had used once a month or less, 15% (n=12) reported using between monthly and fortnightly, 9% (n=7) reported using between fortnightly and weekly, 54% (n=44) reported using greater than weekly and 22% (n=18) reported daily use.

Recent cannabis users were asked how much cannabis they had smoked on the last day of use, as measured by the number of cones or joints used on that occasion. Cannabis had been predominantly smoked in cones (64%) as opposed to joints (31%). Among those who had smoked in cones, the median number used on the last day was three 'cones' (range 1-30 cones), while the median number of joints smoked was 2 (range 1-12 joints). Daily users of cannabis had smoked a median of six cones (range 1-30 cones) or 1.5 joints (range 1-3) on the last day of use.

All of those who had used cannabis reported recent use by smoking (n=81), and 37% (n=28) also reported use by swallowing. Thirty-three percent of recent cannabis users reported bingeing on cannabis in the preceding six months.

Table 13: Patterns of hydroponic and bush cannabis use among the participant sample, 2011 & 2012

	2011 (n=76)	**2012** **(n=92)**
Age first used: median in years (range)	14 (11-19)	**15 (11-20)**
Ever used (lifetime) (%)	94	**98**
Used in last 6 months (%)	92	**88**
Days used in last 6 months: median (range)	50 (1-180)	**48 (1-180)**
Smoked*	100	**100**
Swallowed*	40	**37**
Cones used last time (range)*	3 (0.25-15)	**3 (1-30)**
Joints used last time (range)*	1 (0.5-3)	**2 (1-12)**

Source: EDRS participant interviews
* Of those who reported use in the last six months

Among the participants who commented on hydro, the majority reported spending most of their time (whilst intoxicated) in their own home (54%) followed by a friend's home (31%). This was a similar pattern for those who commented on bush cannabis: whilst intoxicated, participants spent most of their time at their own home (46%) or at a friend's home (36%).

Key Expert Comments

- There was a general consensus among KE that cannabis remains popular and is still widely used among their clientele (and among the general population).
- Hydroponic cannabis was largely reported to be the dominant form of cannabis; however, there were a couple of KE who noted that outdoor cannabis does appear to be gaining popularity.
- When asked what drug they considered to be most problematic at the moment, four KE reported that cannabis was one of the drugs that they were concerned about. These concerns were largely due to the fact that cannabis is the most prevalent of the illicit drugs and is so easily available. One KE raised concerns about the earlier onset of use, with initiation into cannabis use starting at as young as 11 years of age.

4.7 Other drug use

Key Findings

- There were no significant changes in the use of ketamine, GHB or MDA in 2012.
- Virtually the entire sample (99%) reported consuming alcohol in the six months preceding interview, and they had done so a median of 48 days. Among these participants, seven percent reported drinking on a daily basis.
- Recent tobacco use remained stable, with 85% of the sample reporting that they had used tobacco in the preceding six months.
- Lifetime and recent use of over the counter codeine and stimulants decreased significantly in 2012.
- There was also a significant decrease in the recent use of nitrous oxide.

4.7.1 Ketamine

The median age of first ketamine use was 20 years (range 17-44 years). Over a third of the sample reported lifetime use of ketamime (37%) and 10% reported use in the six months preceding interview (both stable from 2011). The frequency of use remained stable at a median of two days (range 1-24 days) in the six months prior to interview.

The majority of participants (67% or 6 out of 9) had used less than monthly; whilst the remaining participants reported using between monthly and fortnightly (n=2); and between fortnightly and weekly (n=1). No participants reported more than weekly use.

Ketamine use was commonly reported in 'bumps'. The median amount of ketamine used for an average session was 3 bumps (range 3-5), whilst the 'most' amount used in a session was 5 bumps (range 3-26). Ketamine use was also quantified in grams (n=2) and pills/tablets (n=2).

Recent use of ketamine was reported to be either snorted (67%, n= 6) or swallowed (56%, n=5). One participant reported binging on ketamine within the past six months.

4.7.2 GHB

The median age at which participants reported first using gamma-hydroxy butyrate (GHB) was 21 years (range 15-45 years). A quarter (25%) of the sample reported having ever used GHB and 12% had used it in the 6 months preceding interview; this is relatively stable from 2011 (26% and 5% respectively). Frequency of use was low, at a median of one day within the preceding six months (range 1-6).

GHB use was typically quantified in millilitres (ml). The median amount used in a typical or average episode in the preceding six months was 5.5 ml (range 1.5-17.5 ml); recent GHB users also reported using a median of 5.5 ml (range 1.5-20 ml) during the heaviest recent use episode.

All GHB users reported swallowing GHB in the preceding six months, and one participant reported that they had shelved/shafted GHB. Most participants reported using GHB less than monthly (91%, n=10) and one participant reported using between monthly and fortnightly. Two participants reported including GHB in a binge session in 2012.

4.7.3 MDA

In 2012, the median age at which participants reported first use of 3,4-methylenedioxyamphetamine (MDA) was 18.5 years (range 16-28 years), a slight decrease compared to 2011 (19.5 years). Thirty-three percent of the sample reported lifetime use of MDA, and 9% had used in the preceding six months. Frequency of use was low, with participants reporting using on a median of 2.5 days (range 1-5).

A median of two capsules (range 1-3 capsules) were used in a typical session, and a median of three capsules (range 2-4) were used in the heaviest session of use over the preceding six months. Swallowing was the most popular route of administration (n=7), followed by snorting (n=3). One participant reported that they had smoked MDA and one reported that they had injected MDA in the preceding six months. There were no reports of shelving/shafting MDA. Two participants reported including MDA in a binge session.

4.7.4 Alcohol

In 2012, the median age at which participants reported first using alcohol was 14 years (range 7-18 years). Virtually the entire sample had ever used alcohol, and recent use remained high at 99%. Among those who had used alcohol, use had occurred on a median of 48 days (approximately twice a week) in the past six months (range 1-180); this remained stable from 2011. Fifty-four percent of recent alcohol users reported using alcohol more than once per week (71% in 2011), and seven percent reported drinking on a daily basis (7% in 2011).

Forty-seven percent of participants reported including alcohol in a binge session in 2012, which was higher than the proportion in 2011 (38%); however, the proportion of participants who reported typically using alcohol (> 5 standard drinks) with ecstasy was stable (70% in 2011 and 2012). A smaller proportion of participants reported using alcohol to come down from ecstasy (13% in 2011 versus 4% in 2012).

In 2012, the Alcohol Use Disorders Identification Test (AUDIT) was administered to participants. Detailed information regarding the AUDIT in the 2012 EDRS can be found in Section 7.5: The Alcohol Use Disorders Identification Test (AUDIT).

4.7.5 Tobacco

The median reported age of first use of tobacco was stable from 2011, at 15 years (range 9-39 years). The proportion of participants reporting recent use of tobacco was also stable in 2012, with 85% reporting recent use compared to 86% in 2011. The frequency of participants' tobacco use has remained at peak levels across the ten years of the survey at a median of 180 days in the previous six months (equivalent to daily use), with 60% reporting daily use. This greatly exceeds the 2010 daily smoking prevalence rate in the general South Australian population aged 14 years and over, of 15.1% (Australian Institute of Health & Welfare, 2011).

4.7.6 Benzodiazepines

Since 2007, participants have been asked to distinguish between their use of licit and illicit benzodiazepines.

The median age of first use of illicit benzodiazepines was 20 years (range 14-41 years), which is stable from 2011. In 2012, 40% of REU reported lifetime use of illicit benzodiazepines, and 24% had used these substances within the preceding six months. Recent users of illicit benzodiazepines reported using on a median of 2.5 days (range 1-72).

4.7.7 Antidepressants

Since 2007, participants have been asked to distinguish between their use of licit and illicit antidepressants.

The median age of first use of illicit antidepressants was 22 years (range 15-46 years), older than reported in 2011 (18; range 13-29). In 2012, 10% of REU reported ever having used illicit antidepressants. Only one participant reported using illicit antidepressants in the preceding six months, and they had done so on two days.

4.7.8 Inhalants use

4.7.8.1 Nitrous oxide

The median age of first use of nitrous oxide was 18 years (range 14-23 years). In 2012, 52% of participants reported that they had ever used nitrous oxide, and 20% reported recent use (compared to 36% in 2011; p=0.03; 95% CI: 0.025–0.29). Recent nitrous oxide users reported using on a median of 3.5 days (range 1-12), and reported using a median of ten bulbs in a typical session (range 1-400 bulbs), and a median of twenty bulbs (range 2-400) in the heaviest session of use over the preceding six months. Three participants reported having binged on nitrous oxide, one participants reported having typically used nitrous oxide 'with' ecstasy and no participants reported using nitrous oxide during an ecstasy 'comedown' in the last six months.

4.7.8.2 Amyl nitrate

The median age of first use of amyl nitrate was 19 years (range 16-36 years). Almost one-third of the sample (32%) reported lifetime use of amyl nitrate and 17% had used in the preceding six months. Recent users of amyl nitrate reported using for a median of four days (range 1-72). One participant reported having binged on amyl nitrate, one participant reported typically using amyl nitrate 'with' ecstasy, and no participants reported use of amyl nitrate 'at comedown' from ecstasy, in the last six months. This remained unchanged from 2011.

4.7.9 Magic mushrooms

Participants were asked about their use of 'magic mushrooms' (hallucinogenic mushrooms). The median reported age of first use of 'magic mushrooms' was 18 years (range 15-30 years) and 69% of participants reported having used them in their lifetime. Twenty-six percent of participants reported recent use of 'magic mushrooms', and had used on a median of 1.5 days (range 1-6). Two participants reported having binged on mushrooms in the preceding six months.

4.7.10 Heroin

The median age of first heroin use was 21 years (range 13-31 years), with 12% of the 2012 REU sample reporting that they had ever used heroin. Consistent with the low levels of recent use among the REU cohorts in previous years, seven participants (6 male; 1 female) had used heroin during the six months preceding the interview and they used heroin on a median of 5 days (range 1-16). Injecting was the most common route of administration (n=5), followed by smoking (n=4).

4.7.11 Other opioids

The median age of first use of illicit other opiates was 19 years (range 16-30 years). Twenty-one percent of the sample reported lifetime use and 9% had used other illicit opiates in the six months prior to interview. The median days of illicit opiate use was five days (range 2-170 days). The main route of administration (ROA) by those who had recently used was swallowing (100%, n=8), followed by snorting (n=3) and injecting (n=1). No participants reported smoking or shelving/shafting.

4.7.12 Pharmaceutical stimulants

For the past few years, participants have been asked about their use of pharmaceutical stimulants, such as dexamphetamine, pseudoephedrine and methylphenidate (Ritalin), and in 2007 participants were asked to distinguish between licit and illicit use.

In 2012, the median reported age of first use of illicit pharmaceutical stimulants was 18 years (range 14-43 years). Forty-eight percent of the sample reported use of illicit pharmaceutical stimulants in their lifetime, and 19% reported use within the preceding six months (both stable from 2011). Frequency also remained relatively stable at a median of three days (range 1-100). The ROA of recent use was mainly swallowing (n=14), followed by snorting (n=6) and injecting (n=1).

4.7.13 Over the counter (OTC) codeine

The median age at which participants reported first using OTC codeine was 18 years (range 13-28 years). Twenty-three percent of participants reported ever using OTC codeine (versus 47% in 2011; p=0.0015; 95% CI: 0.1–0.4) and 14% reported use in the preceding six months (versus 36% in 2011; p=0.002; 95% CI: 0.08−0.34). Swallowing was reported by all participants, with one participant reporting that they had snorted OTC codeine in the preceding six months.

4.7.14 Over the counter (OTC) stimulants

The median age at which participants reported first using OTC stimulants was 21 years (range 15-29 years), an increase from 2011 (16 years, range 5-21 years). Fifteen percent of participants reported ever using OTC stimulants (versus 40% in 2011; p<0.001; 95% CI: 0.1–0.4), with 3% reporting use of this substance within the preceding six months (versus 22% in 2011; p<0.001; 95% CI: 0.09–0.3). Frequency of use ranged from 5−72 days, with a median of 48 days. Two participants reported swallowing as a route of administration and one participant also reported that they had smoked OTC stimulants in the preceding six months. The main brands specified were Sudafed (n=2) and Codral (n=1).

4.7.15 Steroid use

Three participants (3%) in the 2012 sample reported lifetime use of steroids, with the median age of first use being 22 years (range 18-27 years). No participants reported steroid use in the past six months.

Key Expert Comments

- All KE noted that they had seen very little ketamine within the preceding 12 months.
- Similarly, the majority of KE reported they had seen no, or very little, GHB in the past 12 months. However, there were two KE from the law enforcement field who reported that there had been a resurgence of the GHB/GBL market in SA. More specifically, it was reported that had been a manufacturing operation in SA and that two rather large seizures had been made (about 80 litres on each occasion). GHB was said to cost $7 for a ml.
- Alcohol was considered to be an “oldie but a goldie”, in that it continues to remain a popular drug of choice, as well as a significant drug of concern. Two KE noted that binge drinking continues to be problematic, with one KE reporting that there has been a marked increase in binge drinking among females.
- Pre-loading was also raised as an issue of concern, with young people arriving at the city already intoxicated. This was largely thought to be a result of the high price of alcoholic beverages in nightclubs, and the comparatively low price of cask wine and $2 ‘clean skins’. Alcohol-related violence and an earlier onset of use were also raised as issues of concern.
- A couple of KE reported that prescription medications remain a ‘flourishing trade’, with benzodiazepines and painkillers considered particularly prevalent.

4.8 Emerging psychoactive substances (EPS) use

Key Findings

- Over a third of REU reported using 'any' EPS in the six months preceding interview.
- The most commonly reported EPS recently used were herbal highs, unknown capsules and synthetic cannabinoids.
- In 2012, there were significant decreases in the recent use of 2CB, 2CE, 2CE and DOI.

The use of 2CI decreased significantly amongst REU, both in terms of lifetime and past six month use. This substance, as well as 2CB and 5-dimethoxy-4-ethylphenethylamine (2CE), are psychedelic phenethylamine chemicals that have stimulant effects. There were also significant decreases in the recent use of 2CB & 2CE. Mescaline is also a psychoactive phenethylamine chemical and comes from the peyote cactus. Recent use of mescaline remained low (2%), and lifetime use remained stable at 9%.

DOI ('death on impact') is also a psychedelic phenethylamine. It is uncommon as a substance for human ingestion but is commonly used in research. It has been found on blotter and may be sold as LSD (Erowid: http://www.erowid.org/chemicals/doi/doi.shtml). This was confirmed by two KE who reported that they believed that LSD was being replaced with DOI. Six percent of participants reported using DOI in their lifetime, although no participants had used it within the preceding six months (versus 7% in 2011; p=0.04; 95% CI: 0.01–0.1).

Recent use of psychedelic tryptamines (5-methoxy-dimethyltryptamine (5MEO-DMT) and DMT) remained low amongst REU in SA. Lifetime use of DMT remained stable at 22%, whilst lifetime use of 5MEO-DMT decreased slightly to 2%.

The proportion of SA REU reporting the use of synthetic stimulant chemicals was also low. Four percent of participants reported the recent use of mephedrone and ivory wave, whilst three participants reported recent use of BZP.

Dextromethorphan (DXM) is a semisynthetic opiate derivative which is legally available over-the-counter in the United States. It is most commonly found in cough suppressants, especially those with 'DM' or 'Tuss' in their names. Twelve percent of respondents reported lifetime use of DXM; however, only one participant reported having used DXM in the preceding six months.

Para-methoxyamphetamine (PMA) has been used as a recreational psychoactive drug, primarily in the 1970s, and in Australia since late 1994. The effects of PMA include increased energy, visual distortions and a general change in consciousness. Fifteen percent of respondents reported lifetime use of PMA and 7% reported recent use of PMA.

Datura is a naturally occurring substance and the two most well-known are the devil's weed (*Datura inoxia*) and the thornapple or jimson weed (*Datura strammonium*). The plant's effects make the user feel drowsy, drunk-like and detached from things around them. They can also bring on hallucinations**.** Twelve percent of the sample reported having ever used this substance, although no participants reported recent use of Datura (see Table 14).

Overall, 37% of REU reported using any EPS in the six months preceding interview (including synthetic cannabinoids). Excluding the use of synthetic cannabinoids, it was found that 34% of the sample had recently used some form of EPS.

Table 14: Proportion of participants reporting lifetime and recent use of emerging psychoactive substances, 2011−2012

Research Chemicals	Ever used (%)		Used last six months (%)	
	2011 (n=76)	**2012 (n=92)**	2011 (n=76)	**2012 (n=92)**
2CB	41	**26**	29	**10****
Mephedrone	13	**16**	8	**4**
DOI	15	**6**	7	**0***
2CE	13	**5**	8	**0***
2CI	28	**13***	16	**0*****
DMT	21	**22**	8	**5**
Mescaline	12	**9**	1	**2**
5MEO-DMT	7	**2**	3	**1**
Datura	5	**12**	1	**0**
Ivory wave/MDPV	4	**5**	1	**4**
BZP	4	**7**	1	**3**
DXM	4	**12**	4	**1**
PMA	7	**15**	4	**7**
Methylone	9	**5**	7	**4**
LSA	3	**14**	1	**10**
Salvia	9	**9**	1	**1**
MPTP	0	**0**	0	**0**
Synthetic cannabinoids	11	**19**	9	**11**
Unknown capsule	-	**26**	-	**16**
Herbal high	-	**38**	-	**17**

Source: EDRS participant interviews
*p<0.05; **p<0.01; ***p<0.001

In 2012, participants who had used an EPS in the six months preceding interview were asked to rate their experience of the drug and how likely they would be to take it again, on a scale of 0−10. They were also asked to rate their most recent experience of ecstasy, cocaine and LSD to allow comparability. Table 15 shows the results of these ratings (data is only presented for EPS which had been used by at least 10% of REU in the past six months).

It was found that, of the most commonly used EPS, 2CB and unknown capsules produced the most pleasurable effects during the high; LSA produced the worst negative effects and 2CB and LSA produced the worst hangover. Interestingly, none of the EPS matched the established drugs (i.e. ecstasy, cocaine or LSD) in terms of pleasurable effects or in terms of the likelihood to take it again if offered.

Table 15: Effects of EPS compared to ecstasy, cocaine and LSD, 2012

Median score	Pleasurable effects* 0=no effect 10=best drug ever	Negative effects* 0=no effect 10=best drug ever	Hangover rating* 0=no effect 10=worst drug ever	Likelihood of taking again 0=definitely not 10-definitely yes
Herbal high	2	0	0	6
Unknown capsule	6	3	2	5
Synthetic cannabinoids	5.5	3.5	0	2.5
2CB	6	4	5	7
LSA	4	8	5	0
Ecstasy	**8**	**2**	**3**	**10**
Cocaine	**8**	**0**	**2**	**10**
LSD	**7**	**5**	**2.5**	**9**

Source: EDRS participant interviews
*on last occasion of use

Key Expert Comments

- It was reported that in 2011, there were 20 new drugs that entered the SA drug market (half a dozen of which were synthetic cannabinoids).

- Three KE reported that MDPV was the main analogue drug in SA at the time of interview. This drug first came to police attention back in November 2011 when an Aboriginal man overdosed in the Murray Bridge area. MDPV was described as a very fine powder, which causes the user to experience an intense rush and which induces the desire to re-use shortly after consumption. One of the concerns surrounding the use of MDPV was the potential to mis-dose, and people who use this drug were being recommended to take half a point. The average price of MDPV was reported to be $50-100 for half a point (0.05 grams); $200 for a half a gram; $300 for a gram; and $800-900 for an eightball. It is also interesting to note that MDPV may be sold as MDPV, but that it may also be added to methamphetamine as an adulterant.

- Reports regarding BZP and TFMPP were mixed. One KE reported that BZP and TFMPP peaked in 2010 and had since dropped off; one KE reported that they had been around for 'a month or so', and one KE reported that they were the main analogue drugs in SA this year. One explanation for this discrepancy is that BZP and TFMPP are often marketed and sold as ecstasy, so individuals may not be aware of what they are actually consuming. Again it was reported that BZP and TFMPP are being added to methamphetamine as adulterants in order to maximise profit. It was also reported that BZP and TFMPP were being imported, as well as manufactured locally, and cost $25−50 for one pill (with discounts being offered for bulk purchases).

- Similarly, reports regarding 2CB and 2CI were mixed. Three KE reported that these drugs had dropped off considerably within the preceding year; however, one law enforcement KE reported that, in terms of seizures, both 2CB and 2CI remained popular. As above, one explanation for this discrepancy is that 2CB and 2CI are often marketed and sold as ecstasy, so individuals may not be aware of what they are actually consuming. The reported price of 2CI was $20−30 for a tab, whilst 2CB was slightly cheaper at $20 for a cap.

- A couple of KE also noted the emergence of 25-B-NBOMe, a low dose hallucinogen which has been involved in a couple of fatalities. This drug is reportedly often sold as LSD.

- Three KE noted an increase in the use of growth hormones and/or pre-workout analogues, which may lead to adverse effects such as increased metabolic rate, irritability, depression and severe dehydration.

- As in 2011, KE were concerned about ease at which these new drugs could be bought online and the subsequent involvement of 'clean skins' (i.e. amateurs who have no previous involvement in drug supply) in importing and selling drugs. For example, it was reported that individuals will import 1 kg of a new chemical which will create a new drug market for a short period of time, before moving onto the next new chemical. This results in isolated spikes in drug use, and the continually changing market makes it extremely difficult to monitor.

- Interestingly, although a number of KE noted the 'explosion' of these new drugs, when asked what they considered to be most problematic drug at the moment only one KE nominated EPS.

5 Drug Market: Price, Purity, Availability and Purchasing Patterns

5.1 Ecstasy

Key Findings

- The price of ecstasy remained stable at $20 for a pill.
- The majority of the sample reported that the price of ecstasy had remained stable in the six months prior to interview.
- The current purity of ecstasy was perceived as medium in 2012, although there was a significant increase in the proportion of REU who perceived current purity as high. Almost a third of REU reported that purity had been increasing over the preceding six months.
- Ecstasy remained easy or very easy to obtain.
- The median number of ecstasy tablets purchased in the six months prior to interview remained stable in 2012, with the majority of REU purchasing for themselves or others.
- Most participants reported scoring from a friend.

5.1.1 Price

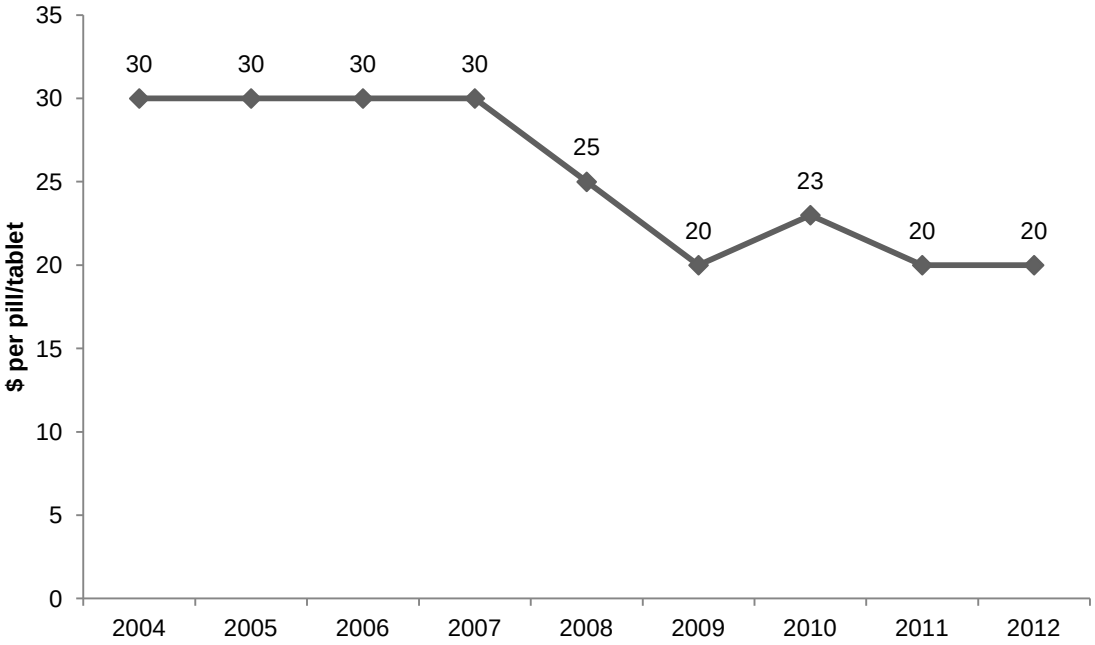
In past years participants have been asked 'How much does ecstasy cost at the moment?' to enable us to report an estimation of the 'current' price of ecstasy. In 2012, participants were only asked about the cost of ecstasy 'at last purchase' (these data have been collected for the previous 8 years). In 2012, most participants were able to provide an estimate of the price of ecstasy 'at last purchase', as detailed in Table 16. The median 'last' price of a tablet/pill of ecstasy reported by users in 2012 was $20 (range $10-30; n = 88); this is stable from 2011. Five participants were also able to answer about the price of a 'cap', with the median price being $25 (range $20-30). Three-fifths of the sample (60%) reported that the price of ecstasy had been stable over the preceding six months, which is similar to that reported in 2011 (52%). Equal proportions of REU reported that the price had either decreased or fluctuated over the preceding six months (14%), whilst 11% reported that it had increased.

Table 16: Last price of ecstasy and change in price over the last six months, 2011 & 2012

	2011	**2012**
Tablet/pill **Median price of last purchase** (range; n)	$20 ($10-40; 72)	**$20 ($10-30; 88)**
Price change in last 6 months (%)	(n=71)	**(n=91)**
Increasing	20	**11**
Stable	52	**60**
Decreasing	16	**14**
Fluctuating	13	**14**

Source: EDRS participant interviews
Note: 'Don't know' excluded from 2009 onwards

Figure 10: Trends in the 'last purchase price' of ecstasy per tablet/pill, 2004–2012



Source: EDRS participant interviews

In 2012, participants were asked specifically about the median 'current' price of ecstasy 'bulk' purchases, where 'bulk' referred to ten or more tablets/pills (see Table 17). It was generally considered that purchasing in bulk resulted in lower prices. However, as can be seen in Table 17, the price per pill only started to decrease when bought in quantities of 20 or more. A purchase of '100' pills costed $15 per pill compared to $20 per pill when bought in a 10 pack.

It should also be noted that the use of ecstasy powder was rarely reported by REU participants (n<10) in 2011, therefore further details are not reported.

Table 17: Current median price of ecstasy bought in bulk amounts, 2012

Qty of pills	Median price per pill (range; n)	Median price total (range; n)
10	20 (10-180;35)	200 (100-600;57)
20	18 (10-30;28)	365 (180-1200;26)
50	15 (10-22;17)	750 (450-2400; 16)
100	15 (9-1200;17)	1300 (900-1800;15)

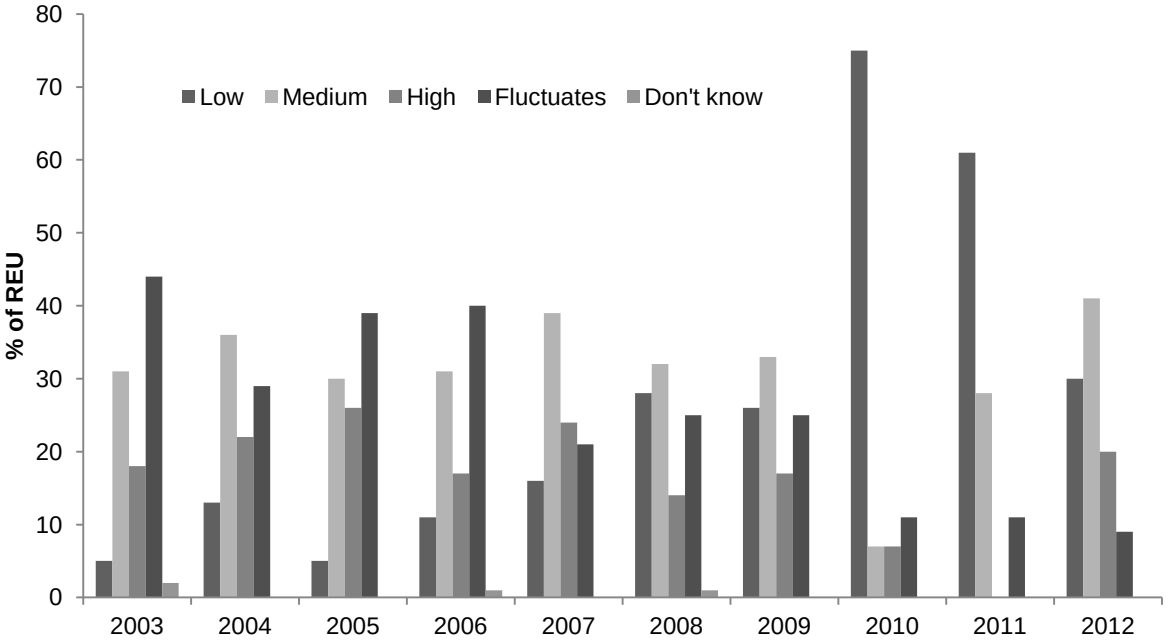
Source: EDRS participant interviews

5.1.2 Purity

Figure 11 presents the current purity of ecstasy and Table 18 summarises the changes in purity in the last six months, as perceived by the participants. It is important to bear in mind that it is difficult to gauge the actual quality of the ecstasy that is being consumed, as participant opinions are based on many factors other than the actual purity of the ecstasy they are using. Factors such as length of use, frequency of use, quality of previous ecstasy and the physical and psychological status of the user all impact upon impressions of quality, and, as such, the figures presented are purely perceptions of the participants.

In 2012, the greatest proportion of REU reported that the current purity of ecstasy was medium (41%). There was a significant increase in the proportion of participants who reported that the purity of ecstasy was high (20% in 2012 versus 0% in 2011; p=0.0001; 95% CI: -0.29 − -0.11) and an inverse decrease in those who reported it to be low (30% in 2012 versus 61% in 2011; p=0.0001; 95% CI: 0.16–0.4). Perceptions of fluctuating purity remained stable in 2012. Participants' opinion of recent change in purity also reported that the purity had increased in the last 6 months (31% versus 14% in 2011; p=0.02; 95% CI: -0.29 − -0.04); inversely, there was a significant decrease in the proportion of REU who believed that purity had decreased (p=0.015; 95% CI: 0.047 – 0.33). The proportion of REU who reported that purity was stable or had fluctuated over the past six months remained stable from 2011 (at 28% and 19% respectively) (Table 18).

Figure 11: Trends in the perceived purity of ecstasy in the last six months, 2003–2012



Source: EDRS participant interviews
Note: Don't know not included in 2009 onwards

Table 18: Perceived purity of ecstasy tablets/pills and change in purity over the last six months, 2011 & 2012

	2011 (n=76)	**2012 (n=92)**
Recent change in purity (%)	(n=70)	**(n=90)**
Increasing	14	**31***
Stable	26	**28**
Decreasing	41	**22***
Fluctuating	19	**19**

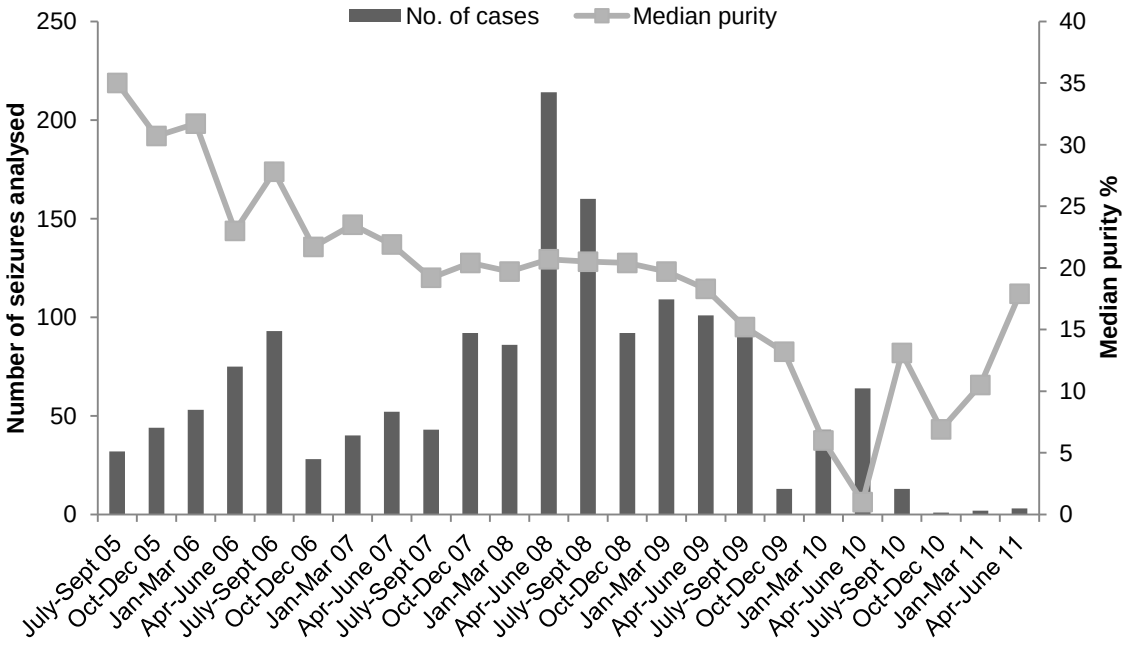
Source: EDRS participant interviews
Note: 'Don't know' not included
*p<0.05

The purity data presented in this report are provided by the ACC and the former Australian Bureau of Criminal Intelligence (ABCI). The ACC provided data on state/territory police and Australian Federal Police (AFP) seizure data, including the number and weight of seizures. Since 2000/01, ecstasy seizures have been reported under 'phenethylamines'. Ecstasy belongs to the phenethylamine family of drugs. Other drugs such as 2,5-dimethoxy-4-

bromoamphetamine (DOB), MDA, 2,5-dimethoxy-4-methylamphetamine (DOM), 3,4- methylenedioxyethylamphetamine (MDEA), paramethoxyamphetamine (PMA), and 4-methylthioamphetamine (4-MTA) also belong to the phenethylamine family, and seizures of these drugs are included in the seizure data.

The Australian Crime Commission (ACC) data were unavailable for 2011/12 at the time of publication. As a consequence, the data provided by the ACC relates to the purity data on phenethylamines (including MDMA) seized in SA during the last financial year, 2010/2011 (Australian Crime Commission, 2012). Figure 12 shows the number of seizures received and analysed by the state forensic laboratory (within the quarter depicted) and the median purity per quarter of those seizures, from 2005/06 to 2010/11. The total number of SAPOL phenethylamines seizures analysed for July 2010 to June 2011 was 19, which is an *eleven-fold* reduction from the number reported in 2009/10 (219). However, the median purity almost doubled, from 6.8% in 2009/10 to 11.8% in 2010/11.

Figure 12: Number of phenethylamine* seizures analysed and median purity, 2005/06–2010/11



Source: Australian Crime Commission 2006, 2007, 2008, 2009, 2010, 2011, 2012

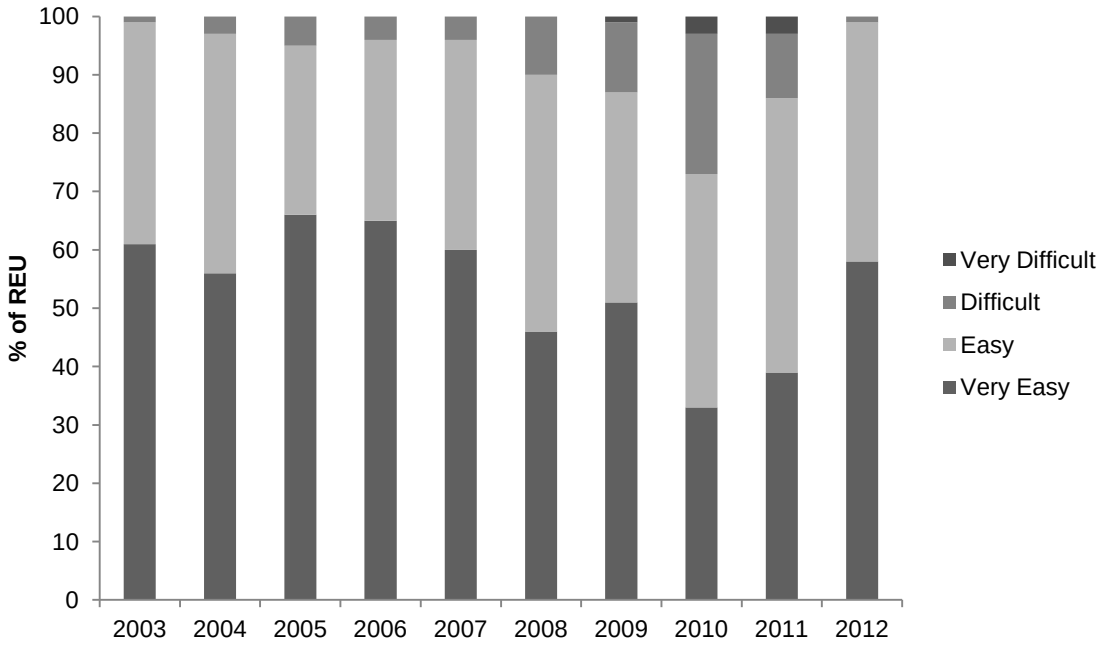
*Phenethylamines include MDMA ('ecstasy'), MDEA, MDA, PMA and others (see Australian Crime Commission, 2012)

A South Australian study confirmed that pills sold as ecstasy contained a variety of substances other than ecstasy, including MDA, methamphetamine, ketamine and caffeine, in a variety of combinations (Camilleri & Caldicott, 2005). The findings also indicated that users commonly (in at least half the 'cases' tested) did not know (or did not even think they knew) what the pill contained prior to any testing. Another investigation of pill content by the Victoria Police Forensic Services Department, also showed that pills increasingly contained substances other than MDMA, including methamphetamine and ketamine, in both single-drug and multi-drug combinations, with varying drug content or purity (Quinn, Breen & White, 2004).

5.1.3 Availability

Figure 13 presents the current availability of ecstasy and Table 19 summarises the changes in availability in the last six months, as perceived by the participants. The majority of participants reported that ecstasy was 'very easy' or 'easy' to obtain in 2012. More specifically, there was a significant increase in the proportion of REU who reported that ecstasy was 'very easy' to obtain (58% in 2012 versus 39% in 2011; p=0.03; 95% CI: -0.33 − -0.03) and an inverse decrease in those that reported that it was 'difficult' to obtain (p=0.02; 95% CI: 0.03–0.19). However, despite these changes, the majority of the sample believed that availability of ecstasy had remained stable over the preceding six months (61%), whilst 22% reported that it had become easier to obtain.

Figure 13: Trends in availability of ecstasy in the preceding six months, 2003–2012



Source: EDRS participant interviews
Note: 'Don't know' not included from 2009 onwards

Table 19: Availability of ecstasy and change in availability over the last six months, 2011 & 2012

	2011 (n=72)	**2012 (n=88)**
Change in availability in last 6 months (%)		
More difficult	17	**8**
Stable	58	**61**
Easier	15	**22**
Fluctuates	10	**9**

Source: EDRS participant interviews
Note: 'Don't know' not included

5.1.4 Supply: purchasing patterns and locations of use

Participants were asked to provide information pertaining to the recent purchase of ecstasy and other drugs. The results of those providing information (n=92) are presented in Table 20. The majority of REU purchased ecstasy for themselves and others (55%), whilst 40% purchased ecstasy for themselves only. This remained stable from 2011. The median number of people that ecstasy was purchased from also remained stable, as did the median number of tablets purchased.

Table 20: Patterns of purchasing ecstasy in the last six months, 2011 & 2012

	2011 (n=76)	**2012 (n=92)**
Median no. of people purchased from (range)	3 (0-7)	**3.5 (0-20)**
Purchased for (%)		
Self only	35	**40**
Self and others	60	**55**
Others only	1	**3**
Did not purchase in last 6 months	4	**1**
No. of times purchased in the last 6 months (%)	(n=73)	**(n=91)**
1 - 6	49	**37**
7 - 12	35	**46**
13 - 24	17	**11**
25 +	0	**6**
Median no. of ecstasy tablets purchased (range)	4 (1-300)	**5 (1-200)**

Source: EDRS participant interviews

Ecstasy was purchased from a range of sources and from a variety of public and private locations, with the most common being from friends (66%) followed by known dealers (16%). Smaller proportions reported purchasing from known acquaintances (12%), strangers (2%) and street dealers (1%) (see Table 21).

Just over a quarter (28%) of participants reported scoring at a friend's home, followed by a nightclub (20%), agreed public location (20%) or at a pub (10%) Smaller proportions nominated a number of other venues (see Table 21).

It is clear from the data depicted in Table 21 that users have consistently purchased their ecstasy most commonly from friends. In 2012, 16% of REU reported purchasing ecstasy from a known dealer and 12% had scored from an acquaintance.

Table 21: Trend in the source and venue of purchase of ecstasy for participants in the last 6 months, 2004–2012

	2004 (n = 99)	2005 (n = 98)	2006 (n = 101)	2007 (n=100)	2008 (n=74)	2009 (n=100)	2010 (n=92)	2011 (n=76)	**2012 (n=92)**
Bought ecstasy from:									
Friends	84	89	88	76	68	60	53	53	**66**
Known dealers	46	48	56	33	31	11	12	21	**16**
Workmates	8	10	20	14	14	3	5	1	**0**
Acquaintances	29	36	39	32	24	20	26	17	**12**
Strangers/unknown*	14	10	25	16	10	3	1	1	**2**
Street dealers	-	-	-	-	-	1	0	1	**1**
Other	-	-	-	4	1	2	3	1	**2**
Venues normally scored [ecstasy] at?									
Own home	40	31	38	27	26	24	16	13	**8**
Dealer's home	32	36	37	27	27	7	11	13	**5**
Friend's home	63	70	69	58	51	25	21	31	**28**
Raves/dance parties**	27	26	29	21	18	1	1	0	**0**
Nightclubs	33	33	41	33	28	12	11	17	**20**
Pubs	13	19	24	20	14	9	8	4	**10**
Agreed public location	44	48	42	35	27	8	20	9	**20**
Private party	-	29	36	22	15	2	6	1	**3**
Street	0	4	8	8	8	4	3	3	**2**
Work	-	-	-	-	11	1	1	0	**0**
Acquaintance's home	-	-	-	-	8	3	2	1	**2**

Source: EDRS participant interviews

* Includes 'unknown dealer' category from 2004

** Combined categories in 2004

- Indicates the data were not collected for the variable in that year

Note: Participants were allowed to nominate more than one response

5.1.5 Precautions when taking drugs

In 2012 participants were asked if they had taken any precautions to avoid adverse effects from ecstasy-type pills in the six months preceding interview. Interestingly, the majority (85%) of REU reported that they had taken some form of precaution, the most common of which was only consuming pills that had been obtained from a trusted source (64%). Other precautions included only taking one pill (or less) to start with (45%); checking drug use websites (42%); only using pills that had a good reputation (36%); using only after seeing the effect on someone else (14%); staying hydrated (9%); and using a drug testing kit (7%).

KE Comments

- KE reports regarding the ecstasy market were mixed. Whilst a couple of KE reported that the MDMA shortage continued into 2012, other KE reported that ecstasy had made a comeback.

- More specifically, it was reported that purity levels had increased, with recent ecstasy seizures revealing purity of 15−25%, which equates to about 40−50 mg per tablet. This is comparable to 2009−2010, in which purity was about 50−60 mg per tablet. Price reportedly remained stable at $25 for a pill.

- Anecdotally, one KE had heard that ecstasy was being produced in East Africa, whereas traditionally it has been produced in the Netherlands.

- Interestingly, despite the apparent re-emergence of the ecstasy market, it was noted that there hadn't been a subsequent shift away from the EPS market. Two KE speculated that there is a new generation of drug users coming through who have never tried MDMA and who are willing to take risks to find a 'good high'. This is an interesting concept and could partially explain the 16% of REU who had used an 'unknown capsule' (i.e. capsule of unknown contents) in the six months preceding interview.

- It was generally agreed that regardless of the ecstasy market, emerging psychoactive drugs will remain on the scene for at least another couple of years.

5.2 Methamphetamine

Key Findings

- The price for a point of both powder and base increased in 2012 (to $100 and $85 respectively), whilst the price for a point of crystal remained stable at $100. However, the majority of participants reported that the price of all three forms of methamphetamine had remained stable in the six months preceding interview.
- The purity of powder, base and crystal methamphetamine was largely perceived as high, and had remained stable over the last six months.
- All forms of methamphetamine were reported as easy or very easy to obtain.
- The largest proportion of participants reported that they purchased all forms of methamphetamine from friends.

5.2.1 Price

Not all participants were able to comment on the price of all three, or any, of the forms of methamphetamine. Table 22 presents the prices of methamphetamine and Table 23 presents whether these had changed over the six months preceding interview.

The reported last median price of a point of base and powder increased quite substantially in 2012, to a median of $85 and $100 respectively. The price of crystal was reported to be stable at $100 per point. The reported last median prices of a gram of powder, base and crystal methamphetamine varied considerably from 2011, at $225, $325 and $800 respectively. However, readers should note the small numbers of participants who commented. Across all forms of methamphetamine, the majority of those who were able to comment reported that the price had remained stable in the six months preceding interview (see Table 23).

Table 22: Median price of last purchase of the main forms of methamphetamine, 2011 & 2012

	Median price per amount $ (range; n)					
Amount	**Powder**		**Base**		**Crystal**	
	2011	**2012**	2011	**2012**	2011	**2012**
Point Price at last purchase	50 (20-100; 17)	**100 (10-100; 15)**	50^ (50-100; 9)	**85 (25-100; 10)**	95 (50-100; 18)	**100 (30-100; 20)**
Gram Price at last purchase	300^ (50-800; 8)	**225^ (20-700; 6)**	625^ (450-800; 4)	**325^ (250-400; 2)**	400 (100-1000; 10)	**800^ (600-1000; 5)**

Source: EDRS participant interviews
^ Small numbers reported (n<10)

Table 23: Changes in price over the last six months, 2011 & 2012

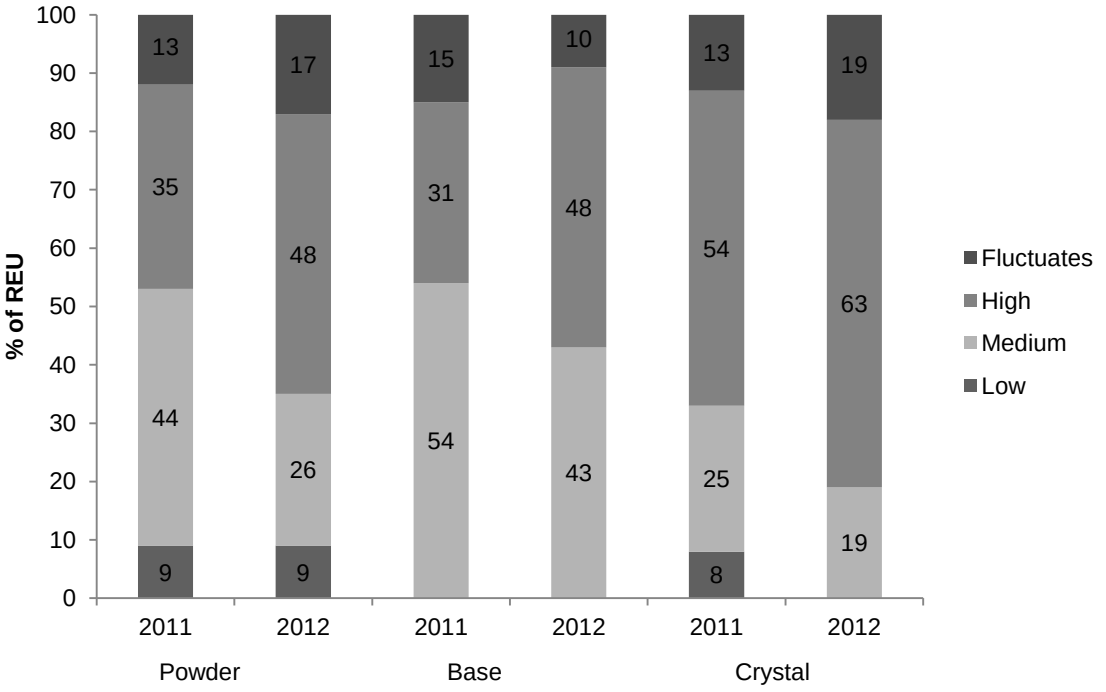
Change in price	Powder		Base		Crystal	
	2011 (n=21)	**2012 (n-22)**	2011 (n=10)	**2012 (n=17)**	2011 (n=19)	**2012 (n=25)**
Increasing	33	**27**	30	**35**	47	**20**
Stable	48	**64**	50	**65**	42	**60**
Decreasing	5	**0**	0	**0**	0	**12**
Fluctuating	14	**9**	20	**0**	11	**8**

Source: EDRS participant interviews

5.2.2 Purity

As can be seen in Figure 14, there were some considerable changes in 2012 in regards to the perceived purity of methamphetamine. Across all forms of methamphetamine there was an increase in the proportion of participants who reported that the purity was high and a decrease in those who reported it to be medium. However, when asked whether the purity of methamphetamine had changed in the preceding six months, the majority of REU reported that purity had remained stable (see Table 24).

Figure 14: Purity of the main forms of methamphetamine over the last six months, 2011 & 2012



Source: EDRS participant interviews
Note: 'Don't know' not included

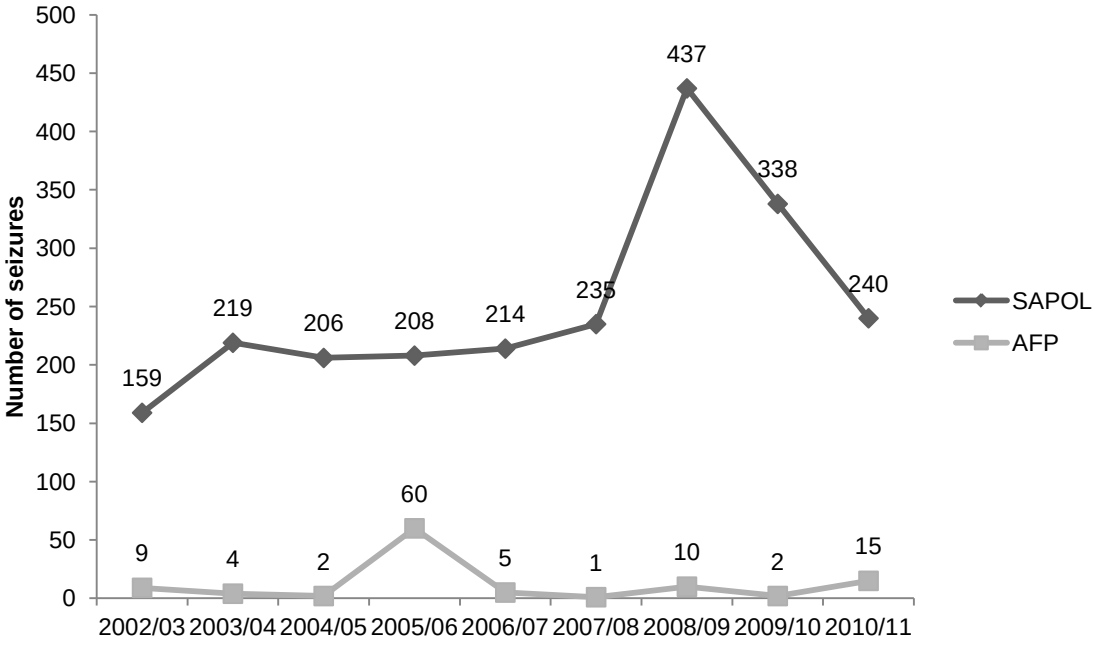
Table 24: Changes in purity of the main forms of methamphetamine over the last six months, 2011 & 2012

Change in purity	Powder		Base		Crystal	
	2011 (n=20)	**2012 (n=20)**	2011 (n=10)	**2012 (n=17)**	2011 (n=21)	**2012 (n=24)**
Increasing	10	**15**	0	**18**	24	**8**
Stable	55	**55**	80	**47**	57	**50**
Decreasing	5	**10**	0	**12**	5	**13**
Fluctuating	30	**20**	20	**24**	14	**29**

Source: EDRS participant interviews
Note: 'Don't know' not included

The Australian Crime Commission (ACC) data were unavailable for 2011/12 at the time of publication. As a consequence, data provided by the ACC relates to the data on seizures and purity levels during the last financial year, 2010/11 (Australian Crime Commission, 2012). Figure 15 shows the number of seizures for amphetamine-type stimulants, by South Australia Police (SAPOL) and the Australian Federal Police (AFP). As can be seen, SAPOL seizures dropped in 2010−11, continuing a sharp downward trend that has been observed since 2008/09. The number of AFP seizures remained low, although there was an increase from 2009/10.

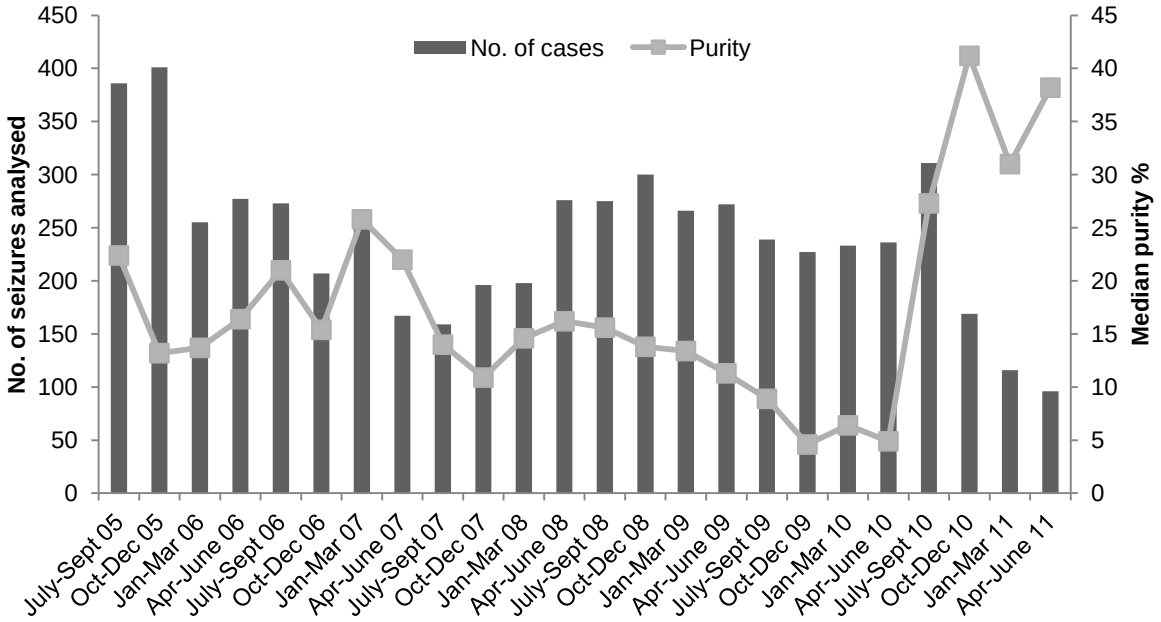
Figure 15: Number of seizures: amphetamine-type stimulants, 2002/03–2010/11



Source: Australian Crime Commission, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012

Figure 16 shows the number of methamphetamine seizures received and analysed by the state forensic laboratory (within the quarter depicted) and the median purity per quarter of those seizures from 2005/06 to 2010/11. The total number of SAPOL methamphetamine seizures analysed from July 2010 to June 2011 was 692, which was a considerable decrease from the 2009/10 financial year (935). However, the overall median purity of the seizures analysed more than quadrupled, from 6.9% in 2009/10 to 31.7% in 2010/11. The majority of seizures analysed were less than or equal to 2 grams.

Figure 16: Median purity of methylamphetamine, 2005/06–2010/11

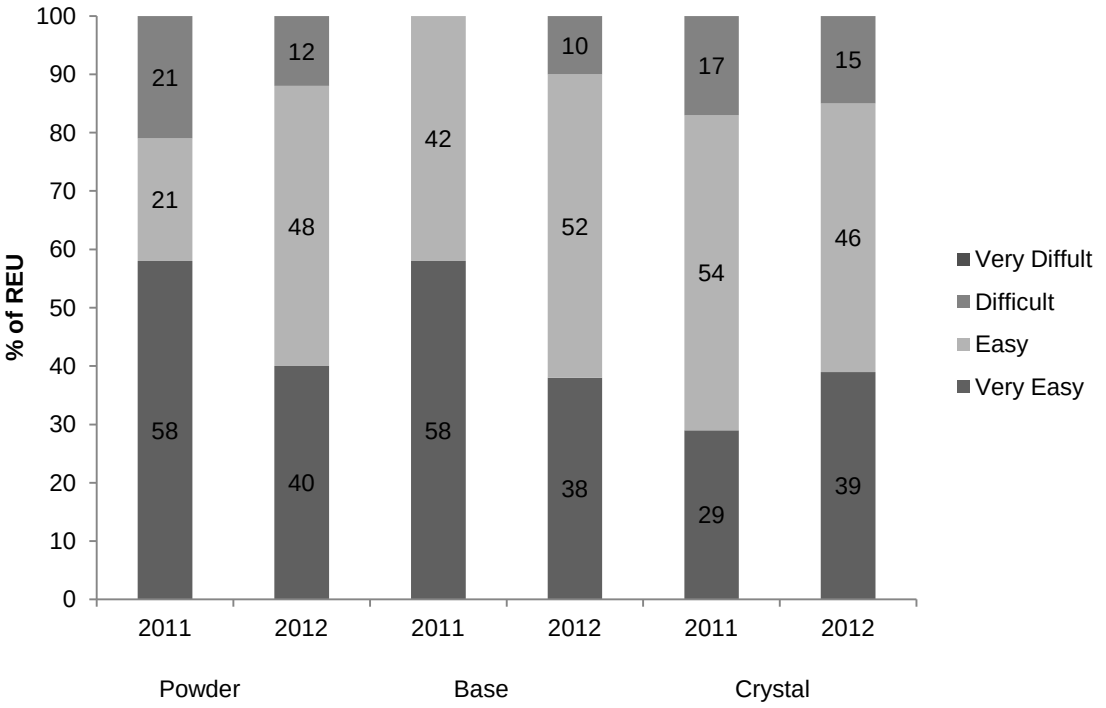


Source: Australian Crime Commission, 2006, 2007, 2008, 2009, 2010, 2011, 2012

5.2.3 Availability

Overall, all three forms of methamphetamine were considered to be ‘easy’ or ‘very easy’ to obtain by the majority of participants (see Figure 17). Twelve percent of those able to answer reported that methamphetamine powder was ‘difficult’ to obtain, whilst for base and crystal the figures were 10% and 15% respectively. The majority of participants reported the availability of all forms of methamphetamine as stable in the last six months (see Table 25).

Figure 17: Availability of the main forms of methamphetamine over the last six months, 2011 & 2012



Source: EDRS participant interviews

Table 25: Change in availability of the main forms of methamphetamine over the last six months, 2011 & 2012

Change in availability in last 6 months (%)	Powder		Base		Crystal	
	2011 (n=20)	**2012 (n=22)**	2011 (n=11)	**2012 (n=19)**	2011 (n=21)	**2012 (n=26)**
More difficult	15	**9**	9	**5**	5	**23**
Stable	70	**68**	55	**84**	67	**58**
Easier	10	**14**	27	**5**	14	**15**
Fluctuates	5	**9**	9	**5**	14	**4**

Source: EDRS participant interviews
Note: Don't know not included

5.2.4 Supply: purchasing patterns and locations of use

When asked where they had bought the different forms of methamphetamine, participants provided similar profiles for each of the three forms (see Table 26). The largest proportion of participants reported that they purchased all forms of methamphetamine from friends.

An analysis of the location at which methamphetamine was reportedly purchased revealed that participants most commonly obtained all three forms of methamphetamine from their friend's home.

Table 26: Last person and source venue where participants purchased methamphetamine, 2012

% commented	Powder (n=26)	Base (n=22)	Crystal (n=28)
Used, not scored	**23**	**32**	**18**
Who have you bought [meth] from in the last 6 months?			
Friends	**39**	**46**	**36**
Known dealers	**23**	**9**	**29**
Acquaintances	**15**	**14**	**14**
Strangers/unknown	**0**	**0**	**4**
Mobile	**0**	**0**	**0**
What venues do you normally score [meth] at?			
Own home	**8**	**0**	**0**
Dealer's home	**8**	**5**	**21**
Friend's home	**35**	**36**	**25**
Nightclub	**8**	**5**	**4**
Pub	**4**	**5**	**0**
Private party	**4**	**0**	**0**
Street	**0**	**5**	**4**
Raves	**0**	**0**	**0**
Live music event	**0**	**0**	**0**
Agreed public location	**4**	**5**	**21**
Acquaintances home	**4**	**5**	**4**
Work	**0**	**5**	**0**

Source: EDRS participant interviews

KE Comments

- Of those who were able to comment, the majority of KE seemed to agree that the price, purity and availability of methamphetamine had remained relatively stable over the past 12 months.
- One KE noted that although overall methamphetamine seizures had remained stable in the preceding year, there did appear to be an increase in the seizure of methamphetamine oil (before it gets refined into crystal or paste).
- It was generally reported that methamphetamine ranged in price from $50−150 for a point and $200−800 for a gram, depending on supply/demand and the quality of the product.
- One KE reported that the purity of methylamphetamine was extremely high in SA (approaching 100%), and speculated that this may be due to Vietnamese involvement in its distribution and importation. In contrast, another KE reported that methamphetamine was currently of 'middle-range' purity and was being cut with methylsulfonylmethane (a dietary supplement which can be used to treat arthritis).

5.3 Cocaine

Key Findings

- In 2012, the median price of cocaine decreased slightly to $350 per gram.
- Reports of purity were mixed, although the majority of participants believed that purity had remained stable in the six months preceding interview.
- The majority of participants reported that cocaine was difficult to obtain, and that availability had remained stable.
- Among those who could comment, most purchased cocaine from a friend and at a private residence (friend's home).

5.3.1 Price

Cocaine was most commonly purchased in grams and was purchased for a median of $350 (range $115-450). Participants who commented on the price considered it to have remained stable in the last 6 months (61%), whilst almost a fifth believed it had decreased (18%).

Table 27: Price of cocaine, 2011 & 2012

	2011	2012
Median price of last purchase Gram (range; n)	$375 (80-800; 20)	**$350 (115-450; 17)**
Price change in last month (%)	(n=21)	**(n=28)**
Increasing	24	**11**
Stable	52	**61**
Decreasing	10	**18**
Fluctuating	14	**11**

Source: EDRS participant interviews

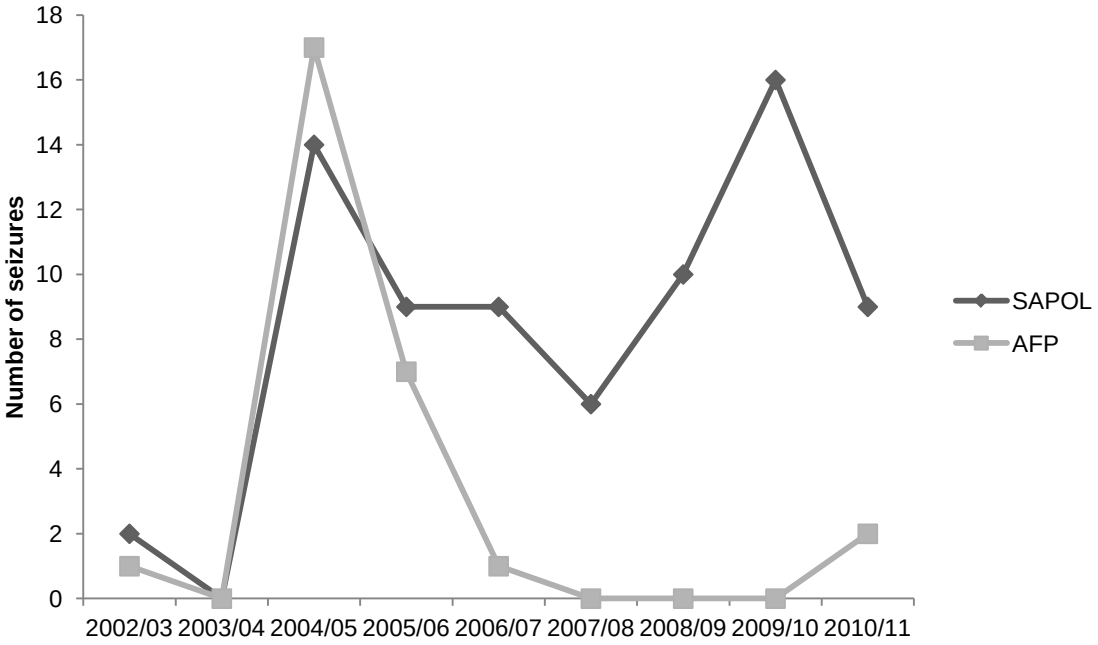
5.3.2 Purity

Participants were asked what the current purity or strength of cocaine was, and whether the purity had changed in the six months preceding interview. Reports regarding the purity of cocaine were largely mixed: of those able to answer (n=33), one-third (33%) reported that current purity was medium, 30% reported it was low, 27% reported it was high and 9% reported that it fluctuated.

Over two-thirds of participants who commented (68%) reported that the purity of cocaine had remained stable over the past six months, whilst equal proportions believed that it had increased, decreased or fluctuated (11% respectively).

The Australian Crime Commission (ACC) data were unavailable for 2011/12 at the time of publication. As a consequence, data provided by the ACC relates to the data on seizures and purity levels during the last financial year, 2010/11 (Australian Crime Commission, 2012). Figure 18 shows the number of seizures for cocaine, by South Australia Police (SAPOL) and the Australian Federal Police (AFP). As can be seen, SAPOL seizures decreased in 2009/10 although the total number of seizures remain low (<10). There were two seizures made by the AFP.

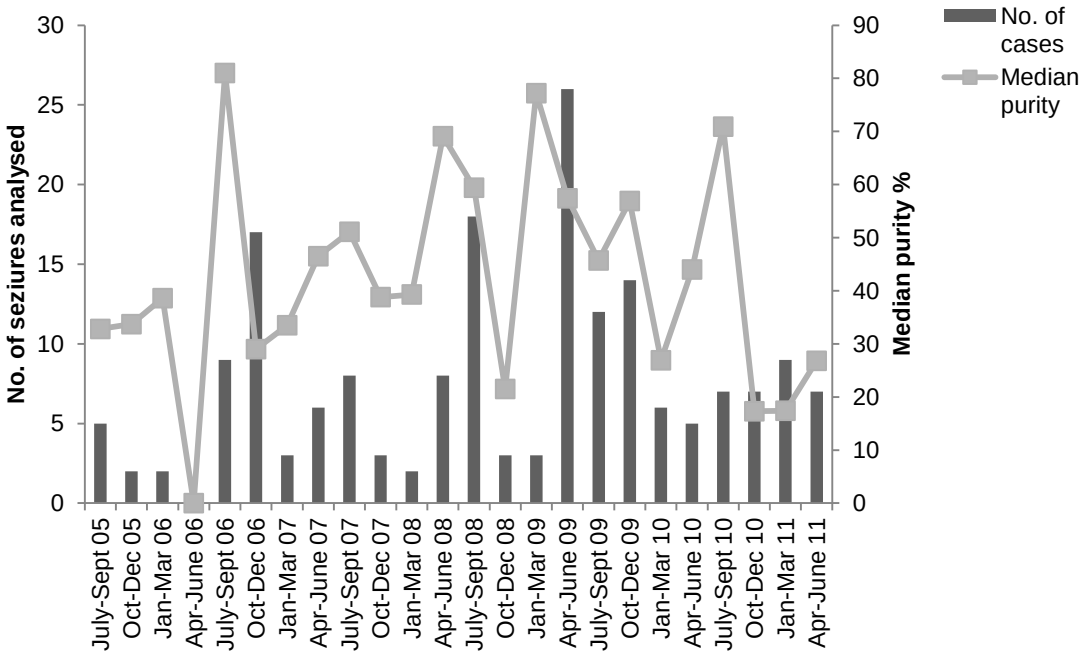
Figure 18: Number of cocaine seizures, 2002/03–2010/11



Source: Australian Crime Commission, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012

Figure 19 shows the number of cocaine seizures received and analysed by the state forensic laboratory (within the quarter depicted) and the median purity per quarter of those seizures from 2005/06 to 2010/11. The total number of SAPOL methamphetamine seizures analysed from July 2010 to June 2011 was 30, which was a slight decrease from the 2009/10 financial year (37). The overall median purity of the seizures analysed was 19.5%, which was less than half the median purity reported in 2009/10 (46.6%). The majority of seizures analysed were less than or equal to 2 grams.

Figure 19: Number of cocaine seizures analysed and median purity, 2005/06–2010/11



Source: Australian Crime Commission, 2006, 2007, 2008, 2009, 2010, 2011, 2012

5.3.3 Availability

The majority of participants reported that cocaine was difficult to obtain, whilst a quarter reported that it was easy to obtain. Of those able to answer, the majority (73%) considered the ease of access to cocaine to have remained stable in the six months preceding interview, a non-significant increase from 2011.

Table 28: Availability of cocaine and change in availability over the last six months, 2011 & 2012

	2011 (n=19)	2012 (n=36)
Current availability (%)		
Very easy	7	3
Easy	44	25
Difficult	44	64
Very difficult	4	8
Change in availability in last 6 months (%)	**(n=22)**	**(n=30)**
More difficult	14	10
Stable	55	73
Easier	18	10
Fluctuates	14	7

Source: EDRS participant interviews
Note: 'Don't know' not included

Cocaine was most commonly acquired through friends (68%). Small numbers (n<5) reported sourcing cocaine through known dealers, acquaintances or unknown dealers. It was most commonly obtained in a friend's home (46%), followed by an agreed public location or dealer's home (11% respectively; see Table 29).

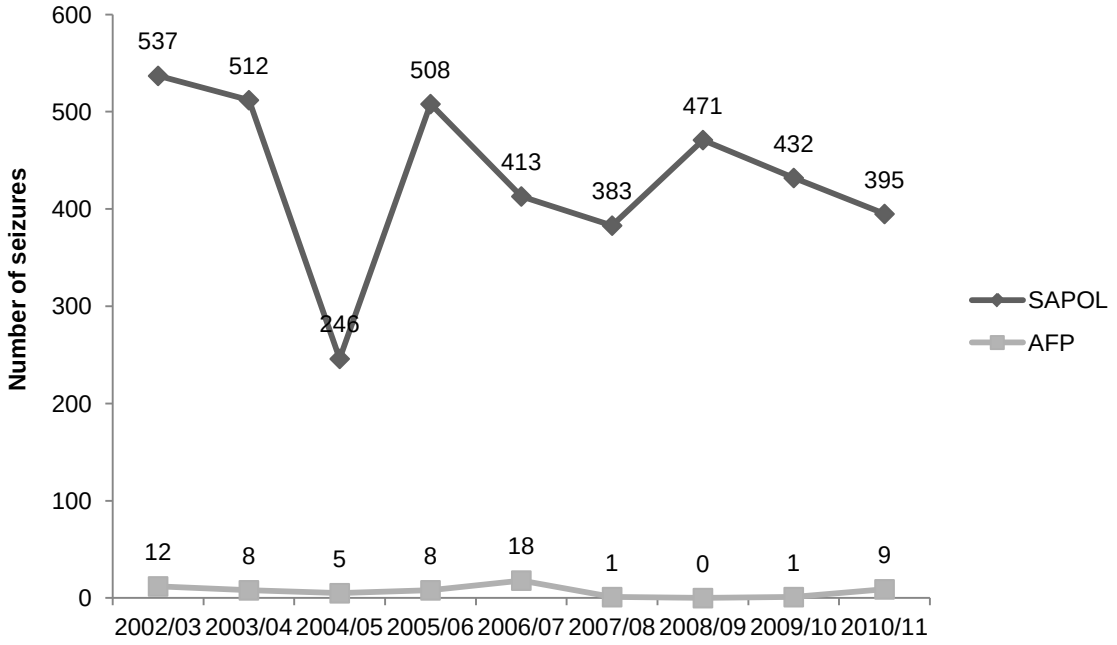
Table 29: Last person and source venue where participants purchased cocaine, 2012

	(n=28) %
Who have you bought cocaine from in the last 6 months?	
Friends	**68**
Known dealers	**14**
Acquaintances	**11**
Unknown dealers	**7**
What venues do you normally score cocaine at?	
Own home	**7**
Dealer's home	**11**
Friend's home	**46**
Nightclub	**7**
Agreed public location	**11**
Pubs	**0**
Private party	**7**
Work	**0**
Live music event	**4**
Other	**7**

Source: EDRS participant interviews

The Australian Crime Commission (ACC) data were unavailable for 2011/12 at the time of publication. As a consequence, data provided by the ACC relates to the data on seizures during the last financial year, 2010/11 (Australian Crime Commission, 2012). Figure 20 shows the number of seizures for cannabis, by South Australia Police (SAPOL) and the Australian Federal Police (AFP). As can be seen, SAPOL seizures dropped in 2010−11, continuing a downward trend that has been observed since 2008/09. The number of AFP seizures remained low, although there was an increase from 2009/10.

Figure 20: Number of cannabis seizures, 2002/03−2010/11



Source: Australian Crime Commission, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012

KE Comments

- Most of the KE reported that they were seeing very little cocaine use and as such were unable to provide information on its current price, purity or availability (PPA). Of those who were able to comment, the majority reported that the PPA of cocaine was stable.

5.4 LSD

Key Findings

- The median price of LSD remained stable at $15 for a tab.
- The purity was seen as high and stable by the majority of participants and was reported as difficult to obtain.
- Participants generally bought LSD from friends or acquaintances.

5.4.1 Price

In 2012, the median last price paid for a tab of LSD was $15 (range $10-30; n=11), stable from 2011 ($15; range $5-35; n=23). Fifty-six percent of those participants able to comment reported that the price of LSD had been stable in the previous six months, whilst almost a fifth (19%) believed it had increased. The remaining participants believed the price had fluctuated or decreased (13% respectively).

5.4.2 Purity

Table 30 summarises the current purity of LSD and the changes in purity in the last six months, as perceived by the participants in 2012. Just over half of the participants who were able to comment reported that the current purity of LSD was high (53%). With regard to recent changes in purity, 44% of those able to comment reported purity as stable, and 33% believed it had decreased, in the six months prior to interview.

Table 30: Purity of LSD and change in purity over the last six months, 2011 & 2012

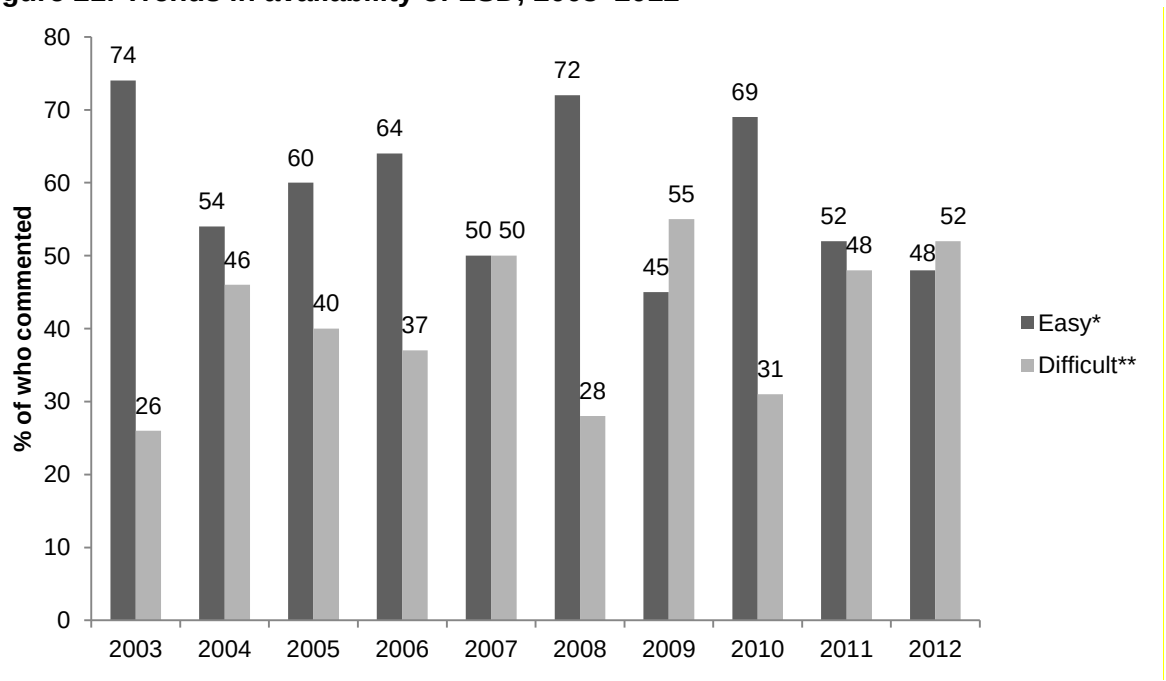
	2011 (n=26)	2012 (n=19)
Current purity (%)		
Low	8	**11**
Medium	23	**37**
High	46	**53**
Fluctuates	23	**0**
Change purity in last 6 months (%)	(n=24)	**(n=18)**
Increasing	13	**22**
Stable	42	**44**
Decreasing	13	**33**
Fluctuating	33	**0**

Source: EDRS participant interviews
Note: ‘ Don’t know’ not included

5.4.3 Availability

The majority of participants (52%) reported that it was 'difficult' or 'very difficult' to purchase LSD in the six months prior to interview, continuing an upward trend that has been observed from 2010 (see Figure 21). Fifty percent of those able to answer reported that the availability of LSD had been stable in the previous six months, whilst 36% believed it had become more difficult to obtain LSD.

Figure 21: Trends in availability of LSD, 2003–2012



Source: EDRS participant interviews
*Data for 'easy' contains the collapsed categories 'very easy' and 'easy' for 2004−2012 and 'moderately easy' for 2003
**Data for 'difficult' is the collapsed categories 'difficult' and 'very difficult' for all years
Note: 'Don't know' not included from 2009 onwards

The participants able to provide information reported that they had bought LSD most commonly from friends and acquaintances and that they had 'scored' at their own home or outdoors (see Table 31).

Table 31: Usual person and source venue where participants purchased LSD, 2012

	% of participants
Who have you got LSD from in the last 6 months?	**(n=12)**
Friends	**33**
Known dealers	**17**
Acquaintances	**33**
Unknown dealer	**8**
Street dealer	**8**
What venues do you normally score LSD at?	**(n=11)**
Own home	**27**
Friend's home	**18**
Outdoors	**27**
Nightclub	**9**
Public place	**9**
Live music event	**9**

Source: EDRS participant interviews

5.5 Cannabis

Key Findings

- The price reported for hydro/bush remained stable at $25 for a bag.
- The purity of hydro was reported as high and bush as medium, with the purity of both types of cannabis perceived as stable in the previous six months.
- Availability was reported as easy or very easy to obtain, with the availability of both hydro and bush perceived as stable in the last six months.

The following sections refer to a 'bag' as a standard measure (particular to the South Australian cannabis market). A detailed investigation of the weight/content of a bag of cannabis was undertaken in 2002 (Longo et al., 2003). Briefly, in the 2002 survey, 33 participants (injecting drug users) gave a single value of the average weight of cannabis bags sold in South Australia, with a median of two grams and a mean of 2.5 grams. A further 19 participants gave both a lower and upper weight range for cannabis bags. The median lower range was two grams (mean 2.1 grams) and the median upper range was three grams (mean 2.9 grams). It can be understood, therefore, that the amount of cannabis in a 'bag' may fluctuate, but that a 'bag' in SA generally conveys a weight of cannabis between two and three grams.

In 2012, participants completing this section were also asked if they were able to differentiate between hydro and bush cannabis in terms of price, potency and availability. Over three-quarters (78%) of the SA sample reported that they were able to distinguish between the two forms.

5.5.1 Price

The reported last median purchase price (by those able to comment) for a 'bag' of hydro (n=31) and bush cannabis (n=30) was $25 (range $20-50 for hydro and range $10-25 for bush). The median purchase prices reported for an ounce of hydro (n=32) and bush (n=21) were also the same, at $200 an ounce (range $100-250 for hydro and $80-240 for bush). These were similar to the prices reported in 2011.

The majority of participants (85%, 52 out of 61 participants) who were able to comment reported that the price of hydro had remained stable, 10% (6 out of 61 participants) reported it had increased and 3% (2 out of 61 participants) reported that it had decreased in the six months prior to interview. Only one participant reported that the price had fluctuated. The majority of participants able to comment on the price of bush also reported that the price had remained stable (88%, 50 out of 57 participants), whilst 9% reported that it had fluctuated (5 out of 57 participants) and 4% (2 out of 57 participants) reported that the price had decreased in the last six months.

5.5.2 Purity

Table 32 and Table 33 summarise the current purity of hydro and bush cannabis and the changes in the potency of cannabis over the last six months, according to participant reports.

Table 32: Purity of hydro and bush cannabis over the last six months, 2011 & 2012

	% Able to answer			
	2011		2012	
	Hydro (n= 50)	Bush (n= 49)	Hydro (n= 50)	Bush (n=49)
High	70	33	64	34
Medium	18	53	26	51
Low	2	4	2	9
Fluctuates	10	10	8	7

Source: EDRS participant interviews
Note: 'Don't know' not included

Table 33: Change in potency/strength of cannabis in last six months, 2011 & 2012

	% Able to answer			
	2011		2012	
	Hydro (n=49)	Hydro (n=47)	Hydro (n=60)	Bush (n=47)
Increasing	16	17	10	14
Stable	63	57	62	59
Decreasing	4	9	5	5
Fluctuating	16	17	23	22

Source: EDRS participant interviews
Note: 'Don't know' not included

In 2012, the purity of hydro and bush cannabis was reported as high or medium by the majority of participants able to comment (hydro 90%; bush 85%). The majority of participants able to comment reported that the purity of hydro (62%) and bush cannabis (59%) was stable in the last six months.

5.5.3 Availability

Table 34 and Table 35 summarise the current availability of hydro and bush cannabis and the changes in the availability of cannabis over the last six months, according to participant reports. In 2012, the majority of participants able to comment reported hydro (99%) and bush (80%) cannabis as easy or very easy to obtain. Large proportions of those able to comment reported that the availability of hydro (84%) and bush (73%) had remained stable in the last six months.

Table 34: Availability of cannabis currently, 2011 & 2012

How easy is it to get cannabis at the moment?	% Able to answer			
	2011		2012	
	Hydro (n=50)	Bush (n=50)	**Hydro (n=63)**	**Bush (n=61)**
Very easy	54	44	**67**	**49**
Easy	38	42	**32**	**31**
Difficult	8	14	**2**	**15**
Very difficult	0	0	**0**	**5**

Source: EDRS participant interviews
Note: 'Don't know' not included

Table 35: Change in availability of cannabis over the last 6 months, 2011 & 2012

Has [availability] changed in the last 6 months?	% Able to answer			
	2011		2012	
	Hydro (n=50)	Bush (n=48)	**Hydro (n=62)**	**Bush (n=60)**
More difficult	10	13	**3**	**5**
Stable	74	50	**84**	**73**
Easier	10	23	**7**	**10**
Fluctuates	6	15	**7**	**12**

Source: EDRS participant interviews
Note: 'Don't know' not included

5.4.4 Usual source of purchase

Table 36 summarises information from participants on the source (both person and venue) from which they had 'usually' obtained cannabis in the preceding six months. In 2012, participants able to comment reported that they had 'usually' obtained cannabis from a friend (63% for hydro, 61% for bush) or a known dealer (17% for hydro, 11% for bush) in the six months prior to interview. The majority of participants able to comment reported that the venue they had 'usually' obtained cannabis from was a friend's home (43% for hydro; 50% for bush), home delivery (20% for hydro; 16% for bush) or a dealer's home (12% for hydro; 8% for bush).

Table 36: Usual person and source venue where participants purchased hydro and bush cannabis, 2012

	Hydro (n=65)	Bush (n=62)
Person (%)		
Friends	**63**	**61**
Known dealer	**17**	**11**
Workmates	**2**	**2**
Street dealer	**2**	**2**
Acquaintances	**3**	**5**
Unknown dealer/strangers	**0**	**0**
Grew own	**0**	**0**
Other	**0**	**7**
Haven't obtained	**14**	**13**
Venue (%)		
Home delivery	**20**	**16**
Dealer's home	**12**	**8**
Friend's home	**43**	**50**
Acquaintance's home	**3**	**2**
Agreed public location	**6**	**5**
Work	**0**	**0**
Street market	**0**	**0**
Live music event	**0**	**2**
Other	**1**	**5**
Haven't obtained	**14**	**13**

Source: EDRS participant interviews

Key Expert Comments

- The majority of KE agreed that the price, purity and availability of cannabis had remained stable in the 12 months preceding interview. The price of cannabis was reported to have remained stable at $25 for a bag (n=3) and $2,200−3,600 for a pound (n=1).

5.6 Other drugs

Very few participants were able to answer on ketamine (n=4) or GHB (n=4) and hence data will not be presented for these drugs.

6 HEALTH- RELATED TRENDS ASSOCIATED WITH DRUG USE

Key Findings

- One-fifth (20%) and one-quarter (25%) of the sample self-reported that they had overdosed on a stimulant or depressant drug in the past 12 months

Health service use

- Thirteen participants self-reported that they had received professional help for a drug and alcohol related issue, and one in five participants self-reported that they had thought about seeking help for their drug and alcohol use.
- Telephone calls to ADIS remained stable for ecstasy, cocaine and cannabis; increased for methamphetamine; and decreased for alcohol.
- Alcohol dominated as the primary drug of concern for the largest proportion of total clients to DASSA treatment services, followed by amphetamines, cannabis, opioid analgesics and heroin. Both ecstasy and cocaine accounted for only a very small fraction of the total attendances.
- In 2012, 42% of REU (respectively) reported that their drug use had caused them to experience problems related to risk (e.g. driving or operating machinery while intoxicated) and responsibility (e.g. repeated absences from work/university).

Mental health

- Just over a quarter of the participants were assessed as having high to very high levels of psychological distress in 2012, with 26% of the sample reporting that they had experienced a mental health problem (other than drug dependence) in the six months preceding interview.

6.1 Overdose and drug-related fatalities

As in previous years, participants in the 2012 sample were asked about 'stimulant' and 'depressant' drug overdose experiences separately. Stimulant drugs include ecstasy, methamphetamine base, powder or crystal, pharmaceutical stimulants, cocaine, MDA and PMA. Depressant drugs include alcohol, GHB, heroin, methadone, benzodiazepines and other opiates. Participants were asked if they had experienced overdose on a 'stimulant' and/or 'depressant' drug ever and in the last six months. The location where participants had overdosed was also investigated, as was the main drug participants believed was involved. Overall, when recent (in the 12 months prior to interview) 'stimulant' and 'depressant' overdoses were combined, 55 participants (60%) reported that they had had a recent overdose experience.

6.1.1 Stimulant overdose

Thirty-three participants (36%) reported that they had 'ever' overdosed on 'stimulant' drugs, and this was stable from 2011. Those who had experienced a stimulant overdose reported doing so on a median of 2 occasions (range 1-20). The median time since last overdose, for

those who reported 'ever' overdosing on a 'stimulant' drug was 9 months (range 1-144 months), and they reported that at the time of overdose they had been partying for a median of 7 hours (range 1-60).

Eighteen participants reported that they had overdosed on a 'stimulant' drug in the last twelve months. Participants predominantly reported being at their own home (n=4), a private party (n=4) or at a friend's home (n=3) at the time of overdose. Fewer participants reported being at a nightclub (n=2), public place (n=2), outdoors (n=1), live music event (n=1) or at work (n=1) at the time of overdose. Of those who had recently overdosed, the main drug involved was ecstasy (n=11), whilst two participants reported that methamphetamine and tripstacy respectively were the main drugs involved. One participant reported LSD was the main drug involved, one reported methcathinone and another reported that tobacco was the main drug involved.

Of those who had overdosed in the past 12 months, two-thirds (n=12; 67%) reported that they had received some form of immediate treatment. The most common treatment received was being monitored or watched by friends (n=8), with smaller numbers reporting that they had taken some form of prescription medication (n=3), been attended to by an ambulance (n=1), attended a hospital emergency department (n=1) or went to a GP (n=1). In addition, four participants reported seeking any post-treatment or information as a result of their overdose, either from a GP (n=2) or from the internet (n=2).

6.1.2 Depressant overdose

Thirty-six participants (39%) reported they had 'ever' overdosed on 'depressant' drugs, again stable from 2011. Those that had experienced a depressant overdose had done so on a median of 3 occasions (range 1-50), representing a significant decrease from 2011 (10; range 1-365) (U=424; p=0.011); and the median time since last overdose was 10.5 months (range 1-264 months).

Twenty-three participants (25%) reported overdosing on a 'depressant' drug in the last twelve months. The main drug involved in these recent depressant overdoses was predominantly alcohol (n=17), with only two participants reporting that heroin was the main drug involved. The location of last overdose was quite mixed with most participants reporting that they were at a friend's home (n=5), their own home (n=4) or at a nightclub (n=3) at the time of overdose. Smaller numbers reported being at a pub (n=2), private party (n=2), live music event (n=2) or in a public place (n=1) at the time of overdose.

Of those who had overdosed in the past 12 months, the majority (n=15; 65%) reported that they had received some form of immediate treatment. The most common treatment received was being monitored or watched by friends (n=11), with smaller numbers reporting that they had been attended to by an ambulance (n=4), had attended a hospital emergency department (n=2), received CPR (n=1) or received adrenalin (n=1). No participants reported seeking any post-treatment or information as a result of their overdose.

Drug-related fatalities

The ABS has changed the way it collates deaths data, making comparisons to earlier overdose bulletins published by NDARC difficult. Since 2003, the ABS has progressively ceased visiting jurisdictional coronial offices to manually update causes of death that had not been loaded onto the computerised National Coronial Information System (NCIS). It was in 2006 that the ABS began to rely solely on data contained on NCIS at the time of closing the deaths data file. In addition, a number of jurisdictions, notably NSW and QLD, reported backlogs in cases that *had* been finalised by the coroner (i.e. cases where the coroner has determined the cause of death), but not yet loaded onto NCIS. This is likely to have an impact on the number of opioid-related deaths recorded at a national level in 2006, given that NSW and QLD recorded the highest number of opioid-related deaths in Australia during the period 2000 to 2005. Accordingly, only drug-related deaths for 2008 are reported here. These data should be interpreted in conjunction with the ABS Technical Note 2: Coroner Certified Deaths, 3303.0 2007. Excerpt taken from**:** Roxburgh and Burns, in press.

6.1.3 Methamphetamine-related deaths

The 2008 data includes deaths where methamphetamine was determined to be either the underlying cause (n=13) – the primary factor responsible for the person‘s death – as well as where methamphetamine was noted but another drug was thought to be primarily responsible for the death (mentions). The underlying cause data are a subset of the total mentions data. The total number of deaths Australia-wide in which methamphetamine was mentioned was 55. In 2007 the number was 69 and in 2006 it was 66.

6.1.4 Cocaine-related deaths

The data includes deaths where cocaine was determined to be either the underlying cause (n=2) – the primary factor responsible for the person‘s death – as well as where cocaine was noted but another drug was thought to be primarily responsible for the death (mentions). The underlying cause data are a subset of the total mentions data. The total number of deaths Australia-wide in which cocaine was mentioned was 11 in 2008. In 2007 the number was 18 and in 2006 it was 13.

6.2 Help-seeking behaviour

In 2012, 14% of participants reported having sought help from a service or health professional in the last six months for any issue related to their drug and/or alcohol use. The main sources of help were a psychologist (n=3) and drug and alcohol worker (n=3), followed by a counsellor (n=2) and general practitioner (n=2). Alcohol was the most common drug that participants were seeking help for (n=3), followed by cannabis (n=2), ecstasy (n=2) and base methamphetamine (n=2). Five participants reported seeking help on multiple occasions.

Inversely, about one-fifth of the sample (n=19; 21%) reported that they had thought about seeking help for reasons relating to their drug use. The reasons for not seeking help (even though they had thought about doing so) were diverse and ranged from believing they could manage the problem themselves (n=3), not being motivated (n=2), to not wanting their parents to find out (n=1).

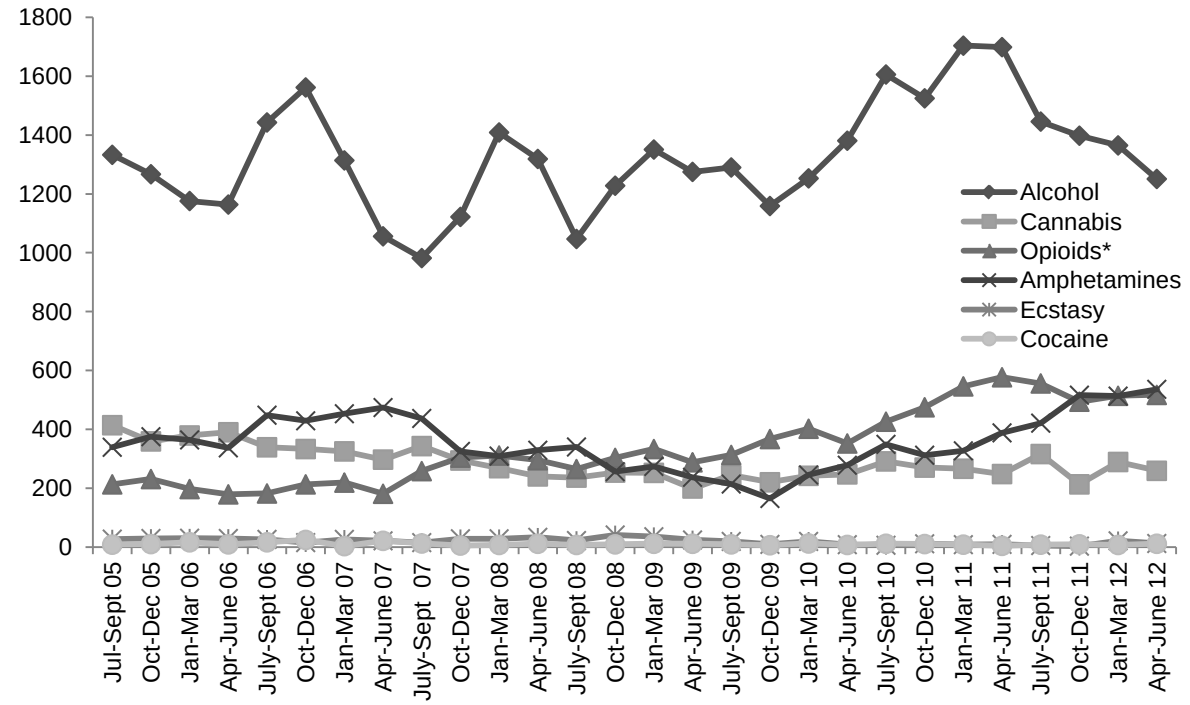
6.3 Drug Treatment Services

The following drug treatment data for South Australia comes from two sources: telephone calls to the SA Alcohol and Drug Information Service (ADIS); and Drug and Alcohol Services South Australia (DASSA). The sections below will present data in terms of clients (per drug type) to these services, to provide a clearer picture of the trends in the number of individuals seeking treatment for the various illicit substances. For information in terms of episodes of treatment (per drug type) – that gives a more accurate measure of demand, or total load, on treatment services – the reader is directed to the Report on the National Minimum Data Set (Australian Institute of Health and Welfare, 2008), which details findings from DASSA and other non-government treatment agencies in SA.

6.3.1 Treatment services ADIS

Figure 22 shows the number of drug-related telephone calls to the SA Alcohol and Drug Information Service (ADIS) from the general public, regarding six different substance types across the financial years 2005/06 to 2011/12. It can be seen that the majority of drug-related calls to SA ADIS across the time period depicted have been alcohol-related, although there does appear to have been a decline in such calls in the 2011/12 financial year. In relation to cannabis, opioids and amphetamines, the numbers have fluctuated considerably over the years. Across time, there seems to have been a steady decrease in the number of cannabis-related calls; a steady increase in the number of opioid-related calls; and a fluctuation in the number of amphetamine-related calls. Calls relating to ecstasy or cocaine have constituted less than one percent of the total coded calls to SA ADIS across all years depicted.

Figure 22: Number of drug-related calls to ADIS per quarter, by selected drug type, July 2005–June 2012



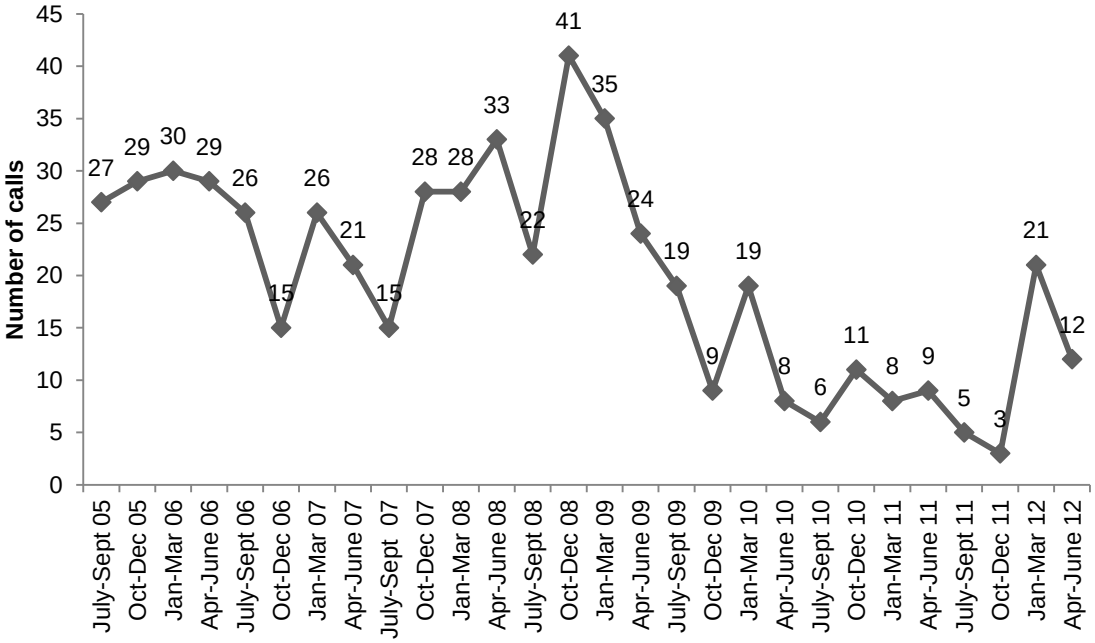
Source: SA ADIS

* 'Opioids' includes all calls coded under the categories heroin, methadone, buprenorphine, naltrexone, opioid pharmacotherapies and other opioids

6.3.1.1 Ecstasy-related calls

Telephone calls to ADIS regarding ecstasy accounted for just 0.3% (n=41) of the total coded telephone contacts (drug-related) in the 2011/12 financial year (n=15,761); this was stable from 2010/11 (0.2%; n=34). Figure 23 depicts the number of ecstasy-related calls per quarter for the last seven financial years. As can be seen, the number of calls regarding ecstasy remained extremely low, although there was a spike in the last two quarters of the 2011/12 financial year.

Figure 23: Number of inquiries to ADIS regarding ecstasy July 2005–June 2012



Source: SA ADIS

6.3.1.2 Methamphetamine-related calls

Telephone calls to ADIS regarding amphetamines accounted for 12.6% (n=1,986) of the 15,761 total drug-related calls in the 2011/12 financial year. This was higher than recorded in the previous financial year (8.5% of a total 16,191 calls), and represents a continuing upward trend since October-December 2009.

Figure 22 depicts the number of amphetamine-related calls per quarter for the last seven financial years compared to calls related to other drug types. As can be seen, calls related to methamphetamine have overtaken those for cannabis and in 2011/2012 were equivalent to the number of opioid-related calls.

6.3.1.3 Cocaine-related calls

Telephone calls to ADIS regarding cocaine accounted for only 0.2% (n=35) of total drug-related telephone calls in 2011/12; this was stable from 2010/11 (0.2%; n=33). Figure 22 depicts the number of cocaine-related calls per quarter for the last seven financial years compared to calls related to other drug types. As can be seen, the number of calls regarding cocaine have remained consistently low over the years.

6.3.1.4 Cannabis-related calls

Telephone calls to ADIS regarding cannabis accounted for 6.8% (n=1,077) of the total coded telephone contacts (drug-related) in the 2011/12 financial year, and this was stable from 2010/11 (6.6%; n=1,075). Figure 22 depicts the number of cannabis-related calls per quarter for the last seven financial years compared to calls related to other drug types. As can be seen, there have been some fluctuations in the number of cannabis-related calls over the years; however, it appears that, overall, there has been a slight downward trend in the number of calls regarding cannabis.

6.3.2 Treatment services DASSA

As can be seen in Table 37, in 2011/12 alcohol dominated as the primary drug of concern for clients to DASSA treatment services, followed by amphetamines, cannabis, opioid analgesics and heroin. Both ecstasy and cocaine accounted for only a very small fraction (<1%) of the total attendances. There was a slight decline in the proportion of total clients nominating ecstasy as the primary drug of concern, whilst the proportion of clients nominating cocaine as their drug of concern remained stable.

Table 37: Primary drug of concern nominated by clients of Drug and Alcohol Services South Australia, as a percentage of total number of clients[*], 2001/02–2011/12

Drug type (%)	2001/02	2002/03[#]	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	**2011/12 N=5,438**
Alcohol	42.0	44.6	47.7	48.3	51.8	52.1	55.9	57.5	57.1	54.7	**49.4**
Amphetamines	14.5	19.3	18.5	20.0	18.8	21.7	16.3	15.2	13.3	16.0	**19.4**
Heroin	10.3	18.5	14.3	12.3	9.7	7.6	8.2	7.8	8.6	8.7	**7.8**
Opioid analgesics	7.1	7.6	8.0	7.5	6.7	6.2	7.0	7.3	7.0	6.9	**8.3**
Cannabis	10.7	10.6	13.1	12.8	13.2	11.3	11.5	10.3	10.8	11.4	**13.9**
Benzodiazepines	1.9	2.6	2.3	2.4	2.3	2.0	2.3	2.0	1.9	1.9	**1.9**
Ecstasy	0.12	0.38	0.74	0.63	1.1	0.9	1.3	2.0	1.6	1.0	**0.5**
Cocaine	0.3	0.3	0.1	0.4	0.4	0.4	0.4	0.5	0.4	0.2	**0.2**
Tobacco	0.2	0	0.2	0.2	0.3	0.3	0.5	0.4	0.6	0.7	**0.5**
Unknown	6.1	0	0.1	0.2	0.2	0.4	0.3	0.2	0.1	0.1	**0.3**
Buprenorphine	-	0.4	1.2	1.0	1.06	1.2	1.3	1.1	1.3	1.4	**1.8**
Other	6.8	1.6	1.5	1.8	1.3	2.5	2.2	1.7	2.5	2.1	**1.2**

Source: Drug and Alcohol Services South Australia

[*] Total number of clients = total number of individuals who started one or more new episodes of treatment during the period. Figures rounded up to one decimal place

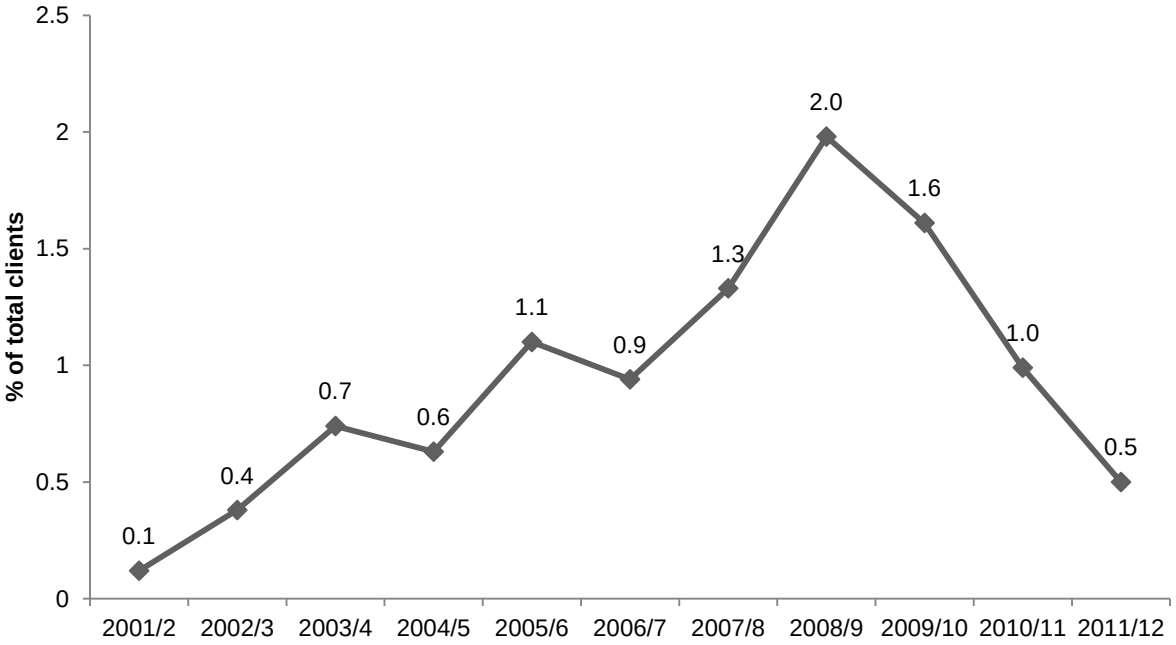
[#] During this period a new data collection system (Client Management Engine-DASC Information System or CME-DIS) was employed to meet the requirements of the National Minimum Data Set for Alcohol and Other Drug Treatment Services (AODTS-NMDS)

Note: Total percentages for each year may not equal 100% as clients may have presented with more than one primary drug of concern within that time

6.3.2.1 Ecstasy-related attendances

DASSA treatment data revealed that in 2011/12 there were 27 clients (individuals) to all DASSA treatment services who nominated ecstasy as the primary drug of concern. This constitutes 0.5% of total clients for that year and indicates a decrease from 2010/11. See also Table 37 for a comparison of ecstasy to other primary drugs of concern among clients of DASSA treatment services.

Figure 24: Percentage of total DASSA clients with ecstasy as the primary drug of concern, 2001/02–2011/12*



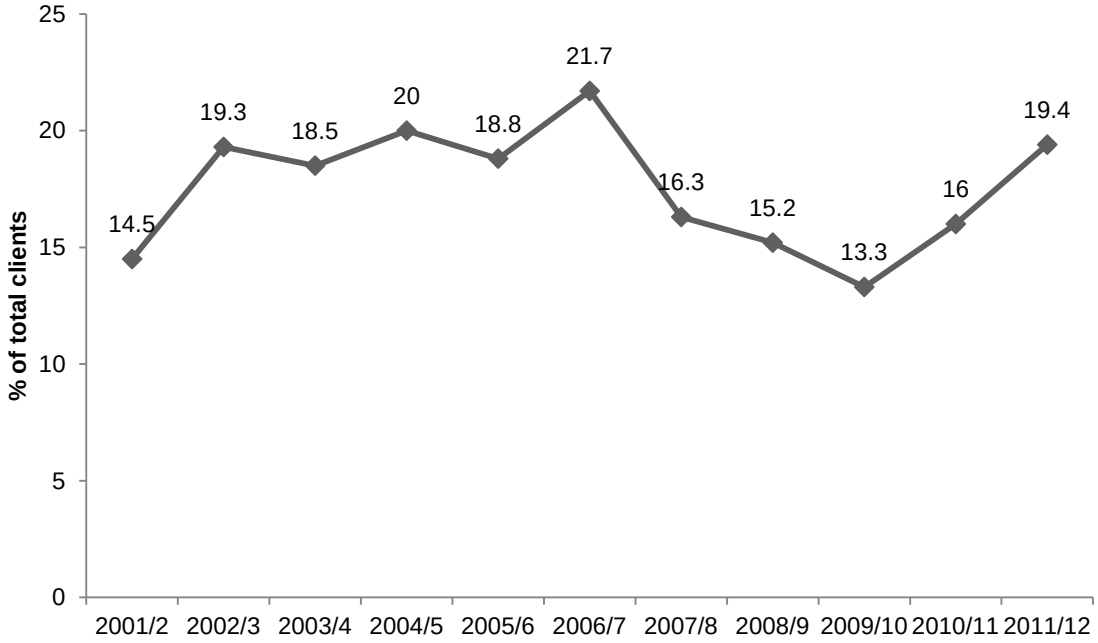
Source: Drug and Alcohol Services South Australia

* During 2002/03 a new data collection system was employed to meet the requirements of the National Minimum Data Set for Alcohol and Other Drug Treatment Services (AODTS- NMDS)

6.3.2.2 Methamphetamine-related attendances

The proportion of clients nominating amphetamines as their primary drug of concern increased in 2011/12, continuing an upward trend that has been observed since 2009/10. In 2011/12, amphetamines (19.4%) were the second most commonly nominated primary drug of concern by clients of DASSA after alcohol (49.4%), and dominated as the most common illicit drug of concern, well above cannabis (13.9%).

Figure 25: Percentage of total DASSA clients with amphetamines as the primary drug of concern, 2001/02–2011/12[*]



Source: Drug and Alcohol Services South Australia

[*] During 2002/03 a new data collection system was employed to meet the requirements of the National Minimum Data Set for Alcohol and Other Drug Treatment Services (AODTS- NMDS)

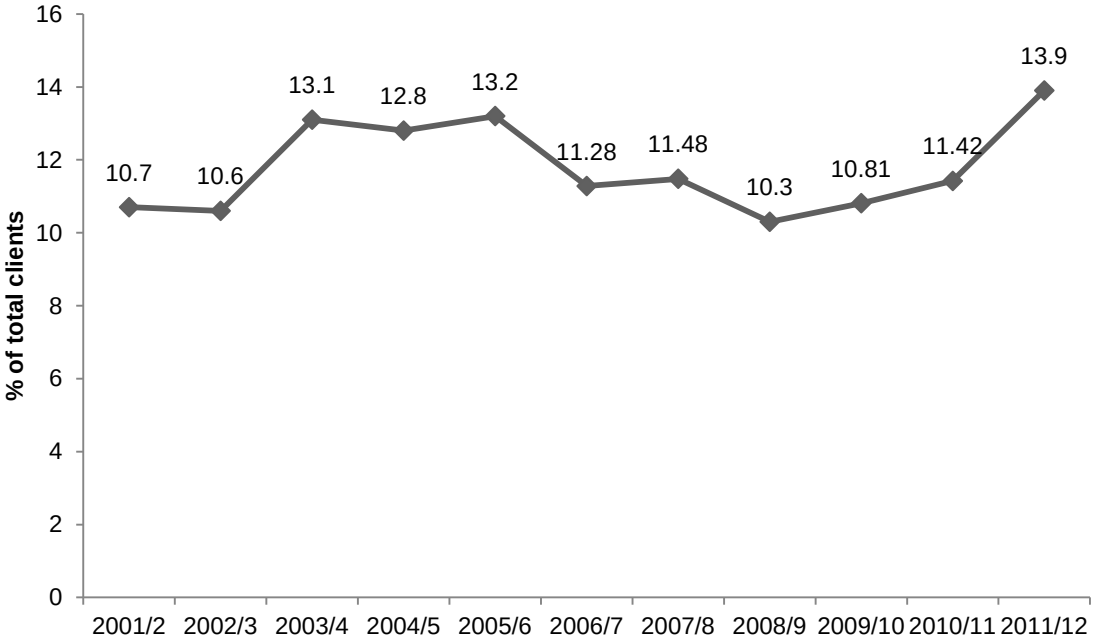
6.3.2.3 Cocaine-related attendances

The proportion of clients nominating cocaine as their primary drug of concern has remained relatively stable and low across all years reported (see Table 37). Of clients to all DASSA treatment services, 0.22% (n=12 of 5,438 individuals) nominated cocaine as their primary drug of concern in 2011/12.

6.3.2.4 Cannabis-related attendances

The proportion of clients nominating cannabis as their primary drug of concern increased in 2011/12, continuing an upward trend than has been observed since 2008/09 (see Table 37 and Figure 26).

Figure 26: Percentage of total DASSA clients with cannabis as the primary drug of concern, 2001/02–2011/12[*]



Source: Drug and Alcohol Services South Australia

[*] During 2002/03 a new data collection system was employed to meet the requirements of the National Minimum Data Set for Alcohol and Other Drug Treatment Services (AODTS- NMDS)

6.4 Other self-reported problems associated with ecstasy and related drug use

The participant survey also asked users about their experience of other problems related to their ecstasy or other drug use during the last six months, in the categories of social/relationship, risk/injury, legal/police, and responsibility (see Table 38). In 2012, the most common problems associated with drug use related to risk/injury problems (where participants could have been hurt or hurt others; for example, driving or operating machinery while intoxicated) and responsibility problems (either at work, home or school; for example, neglect of household/children, repeated absences from work/school/university etc.). Almost a quarter (24%) of the sample reported that drug use had caused them to have repeated problems with family, friends or people at work/school, whilst 7% reported recurrent drug-related legal problems.

Table 38: Self-reported problems associated with ecstasy and related drug use, 2011 & 2012

	2011 (n=73)	**2012 (n=92)**
Relationship/Social problems (%)	33	**24**
Legal/Police problems (%)	12	**7**
Risk problems (%)	55	**42**
Responsibility problems (%)	36	**42**

Source: EDRS participant interviews

Participants were also asked to nominate which drug or drugs they attributed the problem to. A summary of these data is given in Table 39. As can be seen, alcohol was the most common drug held responsible for legal and risk problems. Relationship/social problems were attributed equally to ecstasy, cannabis and alcohol, whilst responsibility problems were attributed largely to ecstasy (representing a significant increase from 2011; p=0.01; 95% CI: -0.47 − -0.09).

Table 39: Proportion of participants reporting other harms associated with main drug in the last six months, 2011 & 2012

	Relationship/social problems		Legal/police problems		Risk problems		Responsibility problems	
(%)	2011 n=24	**2012 n=22**	2011 n=9	**2012 n=6**	2011 n=40	**2012 n=39**	2011 n=26	**2012 n=39**
Ecstasy	4	**27**	11	**0**	18	**15**	8	**39***
Cannabis	25	**27**	22	**17**	8	**13**	35	**26**
Alcohol	33	**27**	33	**67**	55	**64**	35	**33**
Speed	4	**0**	0	**0**	0	**0**	0	**0**
Base	8	**5**	11	**17**	8	**3**	8	**3**
Crystal	13	**5**	0	**0**	5	**0**	8	**0**
LSD	0	**0**	0	**0**	3	**3**	0	**0**
Benzodiazepines	0	**0**	0	**0**	0	**0**	0	**0**
Heroin & other opiates	8	**5**	11	**0**	3	**3**	8	**0**
Other	4	**5**	11	**0**	3	**0**	0	**0**

Source: EDRS participant interviews
*p<0.05

6.5 Emergency Department admissions

Information on drug-related attendances to the Emergency Department was provided by the Royal Adelaide Hospital (RAH), the largest central public hospital in Adelaide, and is presented in Table 40. It is important to note that these data are likely to be an underestimate of drug-related Emergency Department presentations. Drug involvement may not always be coded accurately, and coding accuracy is also dependent on accurate self-report of those presenting. Data should be interpreted with these caveats in mind. Readers

are also warned that these are 'uncleaned' data and should be interpreted with caution; however, they are included here to give a picture of trends over time, rather than to provide precise numbers.

It is noteworthy that alcohol accounted for the most attendances by far across all years, followed by benzodiazepines. Ecstasy-related attendances are not specifically coded. However, of interest in the context of ecstasy and related drug use is the trend in the number of presentations for GHB, amphetamines and cannabis. The number of GHB-related attendances remained stable in 2011/12; however, there were slight increases in the number of amphetamine and cannabis-related attendances. Interestingly, in 2011/12 amphetamine overtook as heroin as the most common illicit drug-related attendances at the RAH. It can be seen that attendances regarding heroin have continued to rise somewhat across the years depicted; however, they remained stable in 2011/12 at 63 attendances. In addition, if the diagnosis 'drug-induced psychosis' (which includes amphetamine-induced psychosis) is examined, it can be seen that the number of attendances with this diagnosis had decreased in 2005/2006 (from 89 to 31), increased slightly in 2006/07 to 37, and again decreased in 2007/08 with no attendances recorded for 2008/09−2011/12.

Table 40: Number of attendances[*] to the Emergency Department at the Royal Adelaide Hospital, SA, from 2001/02–2011/12 (per drug or diagnosis)

	2001/ 2002	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	2007/ 2008	2008/ 2009	2009/ 2010	2010/ 2011	**2011/ 2012**
Amphetamines	76	65	81	91	61	82	67	58	61	61	**83**
Cocaine	2	0	1	4	6	4	1	4	5	1	**2**
LSD	2	1	2	6	3	2	3	7	7	3	**2**
GHB	48	28	28	48	38	14	15	15	17	20	**20**
Alcohol	1,118	994	1,106	1,465	1,409	1,559	1,554	1,585	2,078	2,119	**1,835**
Cannabis	16	9	11	15	13	15	15	13	11	14	**22**
Heroin	30	38	25	30	32	39	44	66	51	66	**63**
Other opioid[**]	45	64	57	70	68	59	28	38	36	38	**40**
Benzodiazepines	170	138	138	141	122	174	145	151	169	162	**147**
Antidepressants	104	79	80	87	55	74	78	67	58	71	**73**
Drug addiction[#]	27	38	20	37	28	17	8	1	0	0	**0**
Drug-induced psychosis[#]	67	52	44	89	31	37	28	0	0	0	**0**
Drug withdrawal[#]	35	26	24	26	19	20	0	0	0	0	**0**
Other[##]	533	434	442	434	360	579	528	464	480	471	**439**
TOTAL	*2,273*	*1,966*	*2,059*	*2,543*	*2,245*	*2,675*	*2,514*	*2,469*	*2,973*	*3,026*	***2,726***

Source: Royal Adelaide Hospital Emergency Department

[*] Coded as drug- or poisoning-related

[**] Includes opium, methadone, other narcotics (morphine, codeine, pethidine etc.), and opioid withdrawal

[#] Not otherwise specified, excluding alcohol

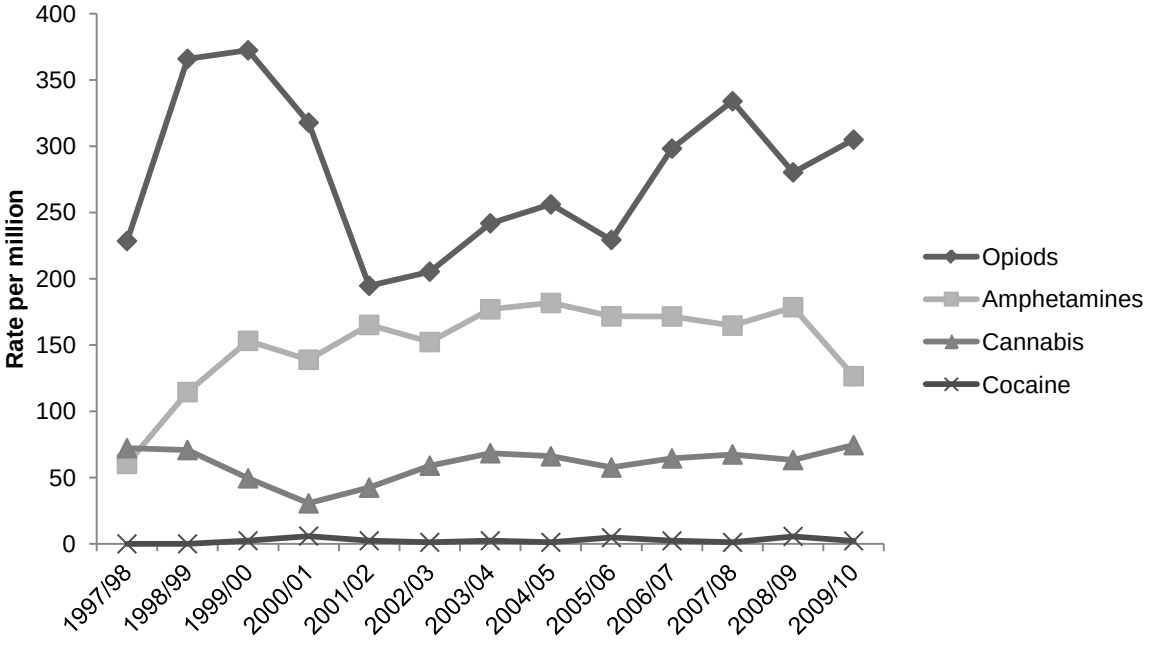
[##] Includes all other poisonings related to food, drug (medical & non-medical), chemical and other toxins

6.5.1 Hospital admissions

An analysis of data, provided by the Australian Institute of Health and Welfare from the National Hospital Morbidity Dataset, for the period 1997/98 to 2009/10 (financial years), was undertaken by NDARC. These data report on both state-specific and national drug-related hospital admissions (for the four main illicit drug classes; see Appendix 1 for National data), adjusted so that all years reflect International Statistical Classification of Diseases and Related Health Problems, Ninth Revision (ICD-9) classifications for comparability across this time period. Readers should note that the major impact of this adjustment is the exclusion of admissions for drug-related psychosis and withdrawal, due to incomparability between ICD-9 and International Classification of Diseases and Related Health Problems, Tenth Revision (ICD-10) coding for these conditions[3]. It should also be noted that these data lag behind other indicators by one year. At the time of printing, data was not available for 2010/2011.

The substances most commonly involved in a primary diagnosis for South Australian drug-related hospital admissions were opioids (heroin, morphine, methadone etc.), followed by amphetamines, cannabis and cocaine (see Figure 27). Ecstasy-related admissions are not specifically coded. South Australian data followed a similar pattern to national data (see Appendix 1), but differed in the rates of admissions per drug type. In particular, SA, in comparison to the national figure, had a lower rate per million for opioid-related admissions (SA: 305 versus National: 465), cocaine-related admissions (SA: 2 versus National: 20), and cannabis-related admissions (SA: 75 versus National: 164). Amphetamine-related admissions in SA were at a similar rate per million (SA: 127 versus National: 136).

Figure 27: Rate per million people of substance-related admissions* (primary diagnosis) to hospital in South Australia, 1997/98–2009/10



Source: Australian Institute of Health and Welfare

* For persons aged between 15 and 54 years

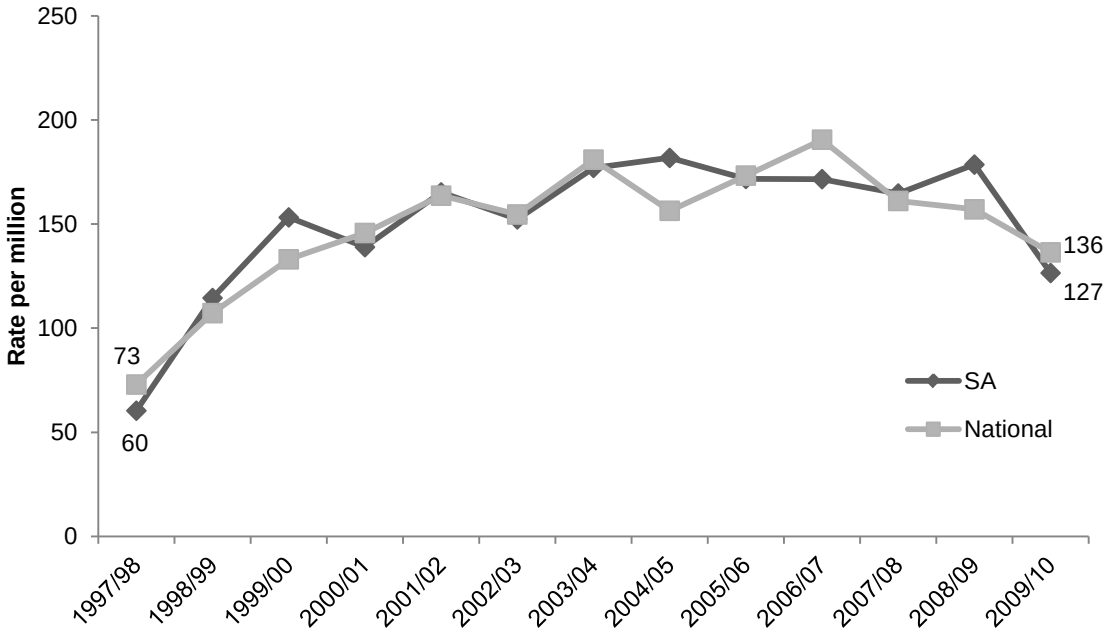
Note: 'Primary diagnosis' was given to those admissions where the substance was considered the primary reason for the patient's episode of care

[3] ICD-9 coding for drug-related psychosis and withdrawal was non-specific for drug type, where ICD-10 coding is specific for drug type.

6.5.1.1 Amphetamine-related hospital admissions

Figure 28 shows the long-term trend of amphetamine-related hospital admissions, from 1997/98 onwards. Admissions with amphetamines as a primary diagnosis decreased sharply in 2009/10 (to 127 per million), the lowest rate observed since 1998/99 (114 per million). Nationally, these figures have been more varied with a downward trend being observed from 2006/07. Readers are reminded that this figure does not include amphetamine-related psychosis or withdrawal admissions.

Figure 28: Rate of amphetamine-related admissions* (primary diagnosis) to hospital in South Australia and nationally, per million people, 1997/98–2009/10



Source: Australian Institute of Health and Welfare

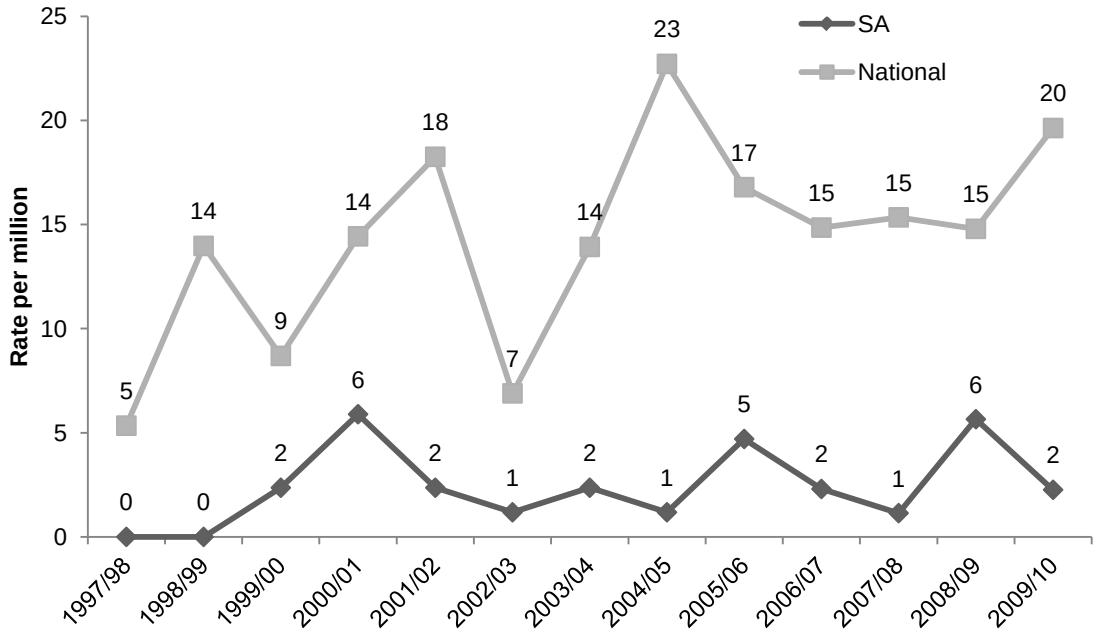
* For persons aged between 15 and 54 years, excluding amphetamine withdrawal and psychosis admissions

Note: A 'primary diagnosis' was given when amphetamines were considered chiefly responsible for the patient's episode of care in hospital

6.5.1.2 Cocaine-related hospital admissions

Figure 29 shows that the rates of cocaine-related hospital admissions have fluctuated considerably over the years, both nationally and in South Australia. However, the national rate of cocaine-related admissions has remained consistently higher than observed in SA. Interestingly, in 2009/10 the rates of admissions observed at the national level increased (from 15 per million in 2008/09 to 20 per million), whilst in SA there was a slight decrease in admissions (from 6 per million in 2008/09 to 2 per million).

Figure 29: Rate of cocaine-related admissions* (primary diagnosis) to hospital in South Australia and nationally, per million people, 1997/98–2009/10



Source: Australian Institute of Health and Welfare

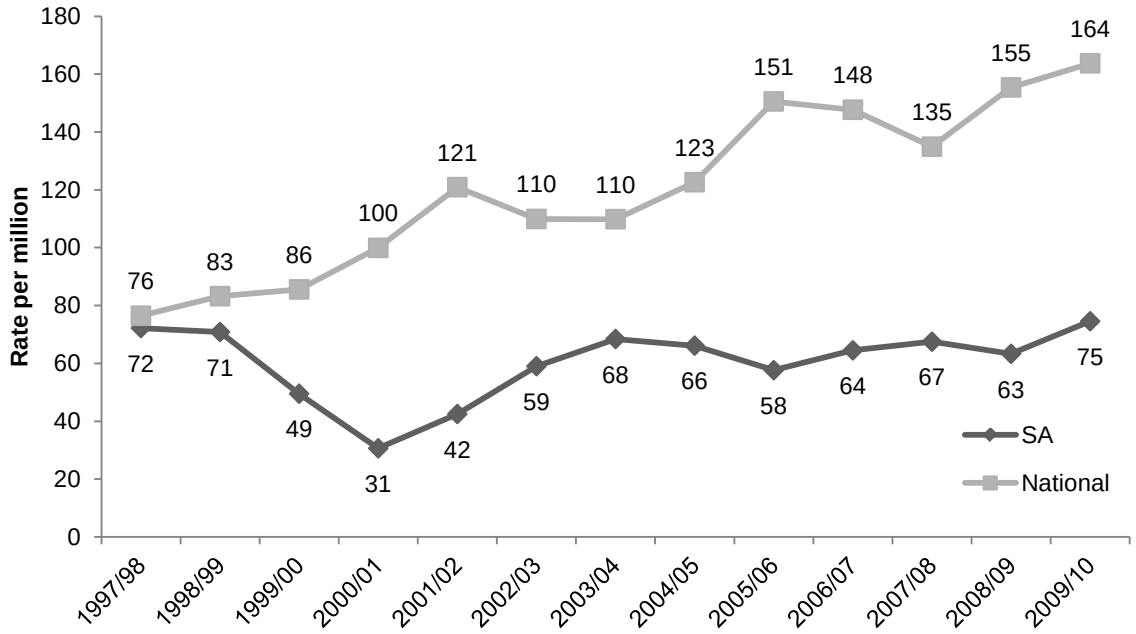
* For persons aged between 15 and 54 years, excluding cocaine withdrawal and psychosis admissions

Note: A 'primary diagnosis' was given when cocaine was considered chiefly responsible for the patient's episode of care in hospital

6.5.1.3 Cannabis-related hospital admissions

Figure 30 depicts the long-term trend in cannabis-related hospital admissions (primary diagnosis), both nationally and in SA from 1997/98 onwards. As can be seen, both SA and national rates were similar until a divergence in 1999/00, when the national rate continued to rise and the SA rate declined for two years. From 2000/01-2003/04, SA observed an increase in the rate of cannabis-related admissions, with rates remaining relatively stable across 2004/05-2008/09. In 2009/10 there was an increase in the rates of cannabis-related admissions, from 63 per million in 2008/09 to 75 per million; this is the highest rate ever observed. Readers are reminded that this figure does not include cannabis-related psychosis or withdrawal admissions.

Figure 30: Rate of cannabis-related admissions* (primary diagnosis) to hospital in South Australia and nationally, per million people, 1997/98–2009/10



Source: Australian Institute of Health and Welfare

* For persons aged between 15 and 54 years, excluding cocaine withdrawal and psychosis admissions

Note: A 'primary diagnosis' was given when cannabis was considered chiefly responsible for the patient's episode of care in hospital

6.6 Mental and physical health problems

6.6.1 Mental health problems and psychological distress (K10)

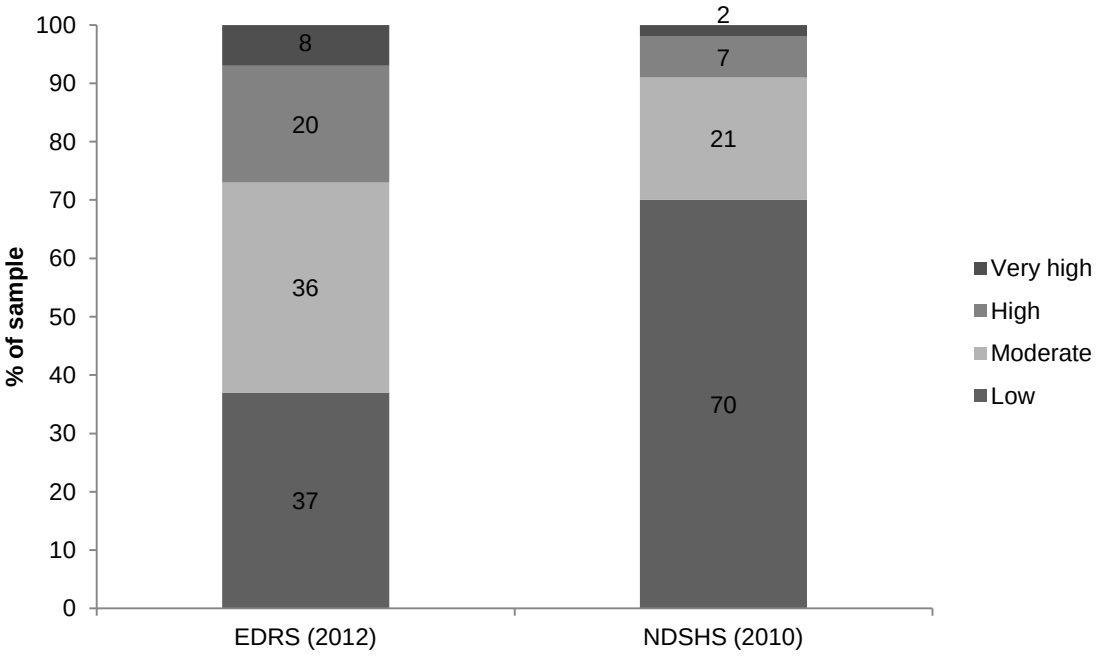
In 2012, the Kessler Psychological Distress Scale (K10) (Kessler & Mroczek, 1994) was used to give a measure of levels of psychological distress among the participant sample.

The Kessler Psychological Distress Scale was developed as a screening instrument to measure for negative emotional states, referred to as psychological distress. It is described as a simple, brief, valid and reliable instrument used to detect mental health conditions in the population. The scale consists of 10 questions on non-specific psychological distress, and measures the level of anxiety and depressive symptoms a person may have experienced in the past four-weeks; so it asks specifically about recent levels of distress.

Thirty-seven percent of participants had scores between 10 and 15 on the K10 (low risk), 36% of participants scored between 16 and 21 (moderate distress), 20% of participants scored from 22 to 29 (high distress), and 8% scored from 30 to 50 (very high distress) (Figure 31). The median total score for participants was 18 (range 10-48), indicating that over half of the sample was at moderate or high/very high risk of psychological distress as measured by the K10.

The 2010 National Drug Strategy Household Survey (Australian Institute of Health & Welfare, 2011) provided the most recent Australian population norms available for the K10, and used four categories to describe degree of distress as used in the EDRS. Using these categories, the proportion of EDRS participants reporting 'high' (20%) or 'very high' (8%) distress was higher (28%) compared to those in the National Drug Strategy Household Survey (9%; i.e. high = 7%; very high = 2%).

Figure 31: Proportion of population (NDSHS, 2010) and sample of K10 categories, 2012



Source: EDRS REU interviews; Australian Institute of Health & Welfare, 2011
Note: The extent to which cut-offs derived from population samples can be applied to the REU population is yet to be established and, therefore, these findings should be taken as a guide only

6.6.2 Self-reported mental health problems

In 2012, 26% (24 out of 92) of the participant sample reported experiencing a mental health problem (other than drug dependence) in the six months preceding interview. This was stable from 2011.

The majority of participants reported experiencing depression (58%, n=14) and anxiety (54%, n=13). Smaller numbers reported paranoia (13%, n=3), manic depression (8%; n=2), personality disorder (8%; n=2), panic (4%; n=1) or phobias (4%; n=1). Less than two-thirds (63%) of those who reported suffering from a mental health problem had sought professional help for such problems, and 13 participants had been prescribed some form of medication (most commonly antidepressants).

7 RISK BEHAVIOUR

Key Findings

Injecting risk behaviour

- Seven percent of the sample reported having injected at some time in their lives, and 5% reported injecting in the six months preceding interview. The median age of first injection was 18 years (range 14-21 years).
- Among those who had injected in the preceding six months (n=5), the most commonly injected drug was heroin.
- Syringes were typically obtained from a Clean Needle Program (60%) and/or a chemist (40%). Of those who had injected in the preceding six months, no participants reported having shared needles or injecting equipment.

Sexual risk behaviour

- Seven participants had been diagnosed with a sexually transmitted infection (STI) in the past year, with Chlamydia being the most commonly reported STI.
- Two-thirds (64%) of REU reported having had casual sex in the six months preceding interview. Interestingly, being sober did not seem to improve the use of protection, with about a third of the sample reporting they had not used any protection during their last sexual encounter (regardless of whether they were sober or under the influence of drugs and/or alcohol at the time).
- Of those who reported having casual sex in the past six months, the vast majority (85%) reported doing so whilst under the influence of drugs and/or alcohol.

Driving risk behaviour

- Among those who had driven a car in the past six months, 57% reported they had done so whilst under the influence of alcohol and, of those, 82% had driven whilst over the BAC limit.
- Of those who had driven recently, 56% had done so whilst under the influence of drugs. The drugs most commonly used whilst driving were cannabis and ecstasy.

Risky alcohol use

- Using the Alcohol Use Disorders Identification Test (AUDIT), participants scored a mean of 16.2, with no significant differences being noted between males and females. The majority of the sample (88%) scored eight or more; these are levels at which alcohol intake may be considered hazardous.

7.1 Injecting risk behaviour

Detail on injecting and injecting-related risk behaviour has been included in the EDRS survey since 2004. In 2012, 7% (6 out of 92) of the sample reported ever injecting any drug; and of those 83% (n=5) reported having injected in the six months prior to interview. The median age of first injecting any drug was 18 years (range 14-21 years, n=5). The majority of participants reported that heroin was the first drug ever injected (5 out 6 participants; 83%), whilst one participant reported that base was the first drug ever injected (17%).

7.1.1 Recent injectors

Participants who had injected in the last six months reported injecting on a median of 12 occasions in that period (range 3-72), which equates to approximately once per fortnight. Heroin was the drug most commonly injected in the past six months, followed by the three forms of methamphetamine (see Table 41).

Forty percent (n=2) of recent injectors had injected under the influence of ERD in the past six months, 20% (n=1) had injected while coming down and 20% (n=1) had injected both while under the influence and while coming down during that time. Those who had injected whilst under the influence of, or coming down from, drugs in the past six months reported doing so on a median of 4 occasions (range 3-5; n=4).

Table 41: Injecting drug use history among injectors, 2012

	Ever injected % (n=6)	First drug injected % (n=6)	Injected in last 6 months % (n=5)
Ecstasy – pills	**50**	**0**	**20**
Ecstasy – powder	**0**	**0**	**0**
Ecstasy – capsules	**17**	**0**	**0**
Meth – powder	**100**	**0**	**60**
Meth – base	**67**	**17**	**60**
Meth – crystal	**50**	**0**	**60**
Pharm. stimulants*	**33**	**0**	**20**
Cocaine	**50**	**0**	**0**
LSD	**0**	**0**	**0**
MDA	**33**	**0**	**20**
Ketamine	**33**	**0**	**0**
GHB	**0**	**0**	**0**
Heroin	**100**	**83**	**100**
Alcohol	**0**	**0**	**0**
Other opiates*#	**33**	**8**	**20**
Benzodiazepines*	**0**	**0**	**0**
Methadone	**33**	**0**	**0**
Buprenorphine	**17**	**0**	**0**
Mushrooms	**0**	**0**	**0**
Steroids	**17**	**0**	**0**
Other	**0**	**0**	**0**

Source: EDRS participant interviews
* Illicit use only
# Includes codeine, morphine, and pethidine

7.1.2 Context of injecting

Participants reported obtaining needles mainly from a Clean Needle Program (60%; n=3), followed by a chemist (40%; n=2). Participants were able to nominate more than one source.

The majority of participants who had injected usually did so with close friends (60%; n=3) or with their regular sex partner (60%; n=3). Those who had recently injected reported having injected at a friend's home (60%; n=3) or at their own home (40%; n=2).

7.1.3 Sharing of needles/syringes and other injecting equipment

In 2012, there were no participants who had shared needles or injecting equipment (such as spoons, filters, tourniquets, water and swabs).

7.2 Blood-borne viral infections (BBVI)

Eighteen percent of the sample reported that they had never been vaccinated for hepatitis B virus (HBV), 55% reported that they had completed the vaccination schedule, 3% did not finish the vaccination schedule and 24% couldn't remember if they had ever been vaccinated. Reasons for seeking HBV vaccination included being vaccinated as a child (64%), going overseas (15%), for work (6%) and at risk due to injecting drug use or sexual activity (4%).

Participants were asked if they had been tested for the hepatitis C virus (HCV). Fifty-seven percent reported that they had never been tested for HCV, while 26% had been tested in the last year, 14% were tested more than a year ago and 2% couldn't remember. Only one participant reported that they were positive for HCV. Among those who had ever injected, only one participant had never been tested, 50% (n=3) had been tested in the last year, and 33% (n=2) had been tested more than a year ago.

Participants were asked if they had been tested for the human immunodeficiency virus (HIV). Fifty-three percent had never been tested for HIV, 32% had been tested in the past year, 14% had been tested more than one year ago and 1% couldn't remember. No participants reported that they were HIV positive.

Forty-one percent of REU reported having had a sexual health check-up (such as a swab, urine or other blood test) in the past year, while 14% reported having had their last sexual health check-up more than one year ago. Forty-five percent had never had a sexual health check-up.

The majority (76%) of those who had been tested reported that they had never been diagnosed with a sexually transmitted infection (STI), 14% (n=7) had been diagnosed with an STI in the past year and 10% (n=5) had been diagnosed with an STI more than a year ago. Ten participants had been diagnosed with Chlamydia and one participant had been diagnosed with human papillomavirus (HPV) (genital warts).

Table 42: Blood-borne virus vaccination and testing among REU, 2012

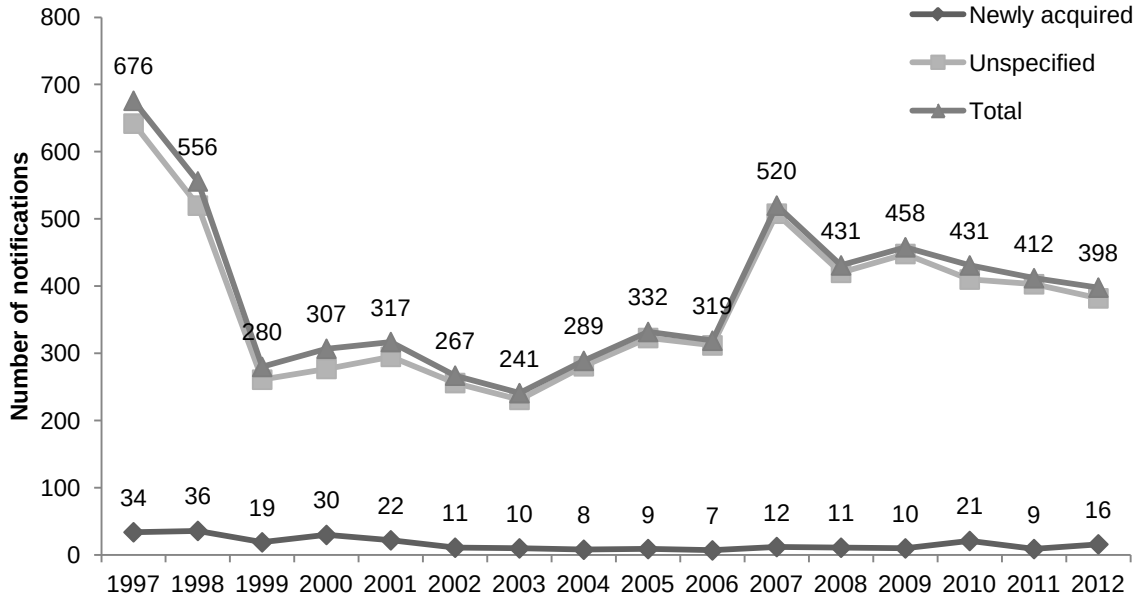
	2012
Vaccinated for Hepatitis B (%)	**n=91**
No	**18**
Yes, didn't complete	**3**
Yes, completed	**55**
Don't know	**24**
Main reason for Hepatitis B vaccination (%)*	**n=53**
At risk (IDU)	**2**
At risk (sexual)	**2**
Going overseas	**15**
Vaccinated as a child	**64**
Work	**6**
Don't know/can't remember	**2**
Other	**9**
Tested for Hepatitis C (%)	**n=91**
No	**57**
Yes, in last year	**26**
Yes, > year ago	**14**
Don't know/didn't get result	**2**
Hepatitis C positive (%)**	**3**
Tested for HIV (%)	**n=91**
No	**53**
Yes, in last year	**32**
Yes, > year ago	**14**
Don't know/didn't get result	**1**
HIV positive (%)**	**0**
Other sexual health checkups (%)	**n=91**
No	**45**
Yes, in last year	**41**
Yes, > year ago	**14**
Sexually transmitted infection (STI) (%)	**n=50**
Positive **	**24**
STI diagnosis (%)##	**n=11**
Gonorrhoea	**0**
Chlamydia	**91**
Syphilis	**0**
HPV (genital warts)	**9^**
Other	**0**

Source: EDRS participant interviews
^ Caution small numbers n<10
* Among those who had been vaccinated for Hepatitis B
** Among those tested
Among those who tested positive for STI in the last year

7.2.1 The National Notifiable Diseases Surveillance System

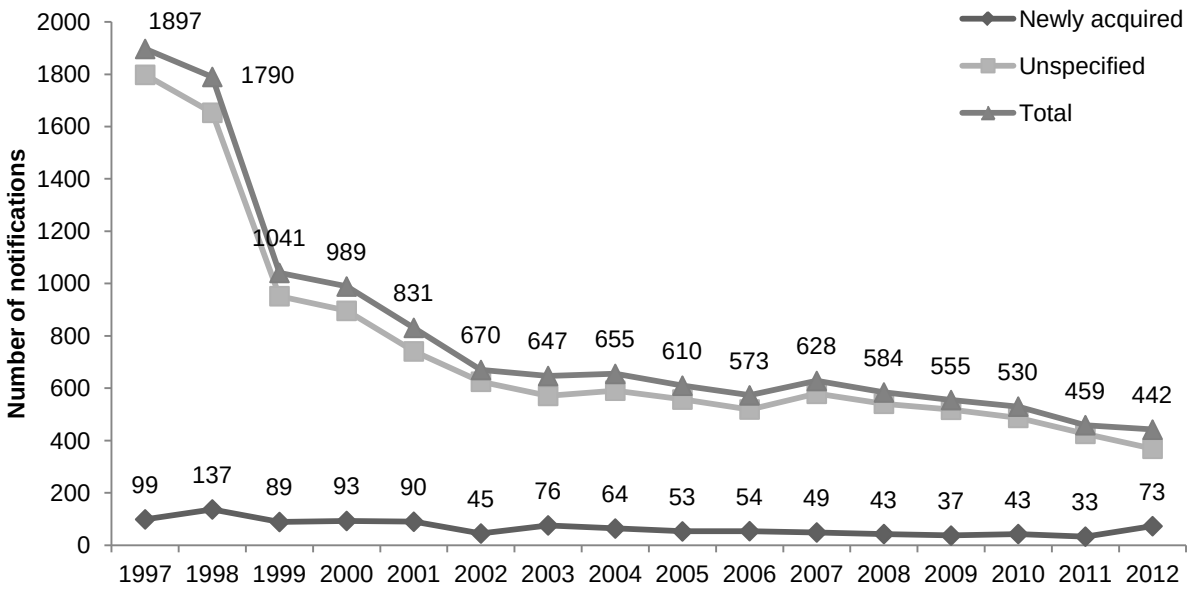
Figure 32 and Figure 33 present the number of notifications for the hepatitis B virus (HBV) and the hepatitis C virus (HCV) in South Australia from the National Notifiable Diseases Surveillance System, 2013 (NNDSS). Incident or newly acquired infections, unspecified infections (i.e. where the timing of the disease acquisition is unknown) and the total number of infections are presented. HCV continued to be more commonly notified than HBV, with a gradual decreasing trend in notifications of HBV from 2007−2012. HCV notifications have remained relatively stable over the past few years, although again there has been a gradual downward trend from 2007−2012.

Figure 32: Notifications for HBV infections, South Australia 1997–2012



Source: National Notifiable Diseases Surveillance System – NNDSS[4]
Note: Figures are updated on an ongoing basis

Figure 33: Notifications for HCV infections, South Australia 1997–2012



Source: National Notifiable Diseases Surveillance System – NNDSS[4]
Note: Figures are updated on an ongoing basis

[4] Notes on interpretation:
There are several caveats to the NNDSS data that need to be considered. As no personal identifiers are collected, duplication in reporting may occur if patients move from one jurisdiction to another and are notified in both. In addition, notified cases are likely to only represent a proportion of the total number of cases that occur, and this proportion may vary between diseases, between jurisdictions and over time.

7.3 Sexual risk behaviour

Participants were asked to provide information regarding their sexual behaviour and the risks associated with it. Participants were given the opportunity to self-administer this section of the questionnaire if they preferred to. 'Sex' was defined as penetrative sex; that is, the penetration of the vagina or anus with the penis or fist.

7.3.1 Recent sexual activity

Table 43 summarises the reports of recent sexual activity and condom use with casual partners. Two-thirds (64%) of the sample reported having casual sex with at least one casual partner in the six months preceding interview. Eleven percent reported having one casual sexual partner during the preceding six months and 53% reported having multiple casual partners. Participants were asked about the use of 'protective barriers' which were defined as 'condoms, dams or gloves', with casual partners. As can be seen in Table 43, the majority of participants who had engaged in casual sex reported the use of protection when having sex while sober. The main reasons for not using protection in such encounters were: using a contraceptive pill (n=6), agreed not to (n=5), participant did not wish to use (n=5), it wasn't mentioned (n=3) or lack of availability (n=1).

Table 43: **Prevalence of sexual activity and number of sexual partners in the preceding six months, 2012**

	2012
No. casual sexual partners (%)	**(n=92)**
No casual partner	**36**
1 person	**11**
2 people	**20**
3-5 people	**23**
6-10 people	**5**
10 or more	**5**
Use of protection during sex with casual partner when sober* (%)	**(n=59)**
Yes	**56**
No	**36**
Not applicable	**9**

Source: EDRS participant interviews
*among those who had had casual sex

7.3.2 Drug use during sex

Table 44 summarises the reports of recent sexual activity and condom use while under the influence of a drug or drugs, in the last six months. The majority (85%) of those reporting recent penetrative sex with a casual partner reported that they had had penetrative sex with a casual partner whilst under the influence of alcohol and/or drugs, in the six months prior to interview. Interestingly, the large majority (90%) of these participants reported doing so on multiple occasions, with 28% reporting that they had done so on more than ten occasions.

Most commonly, participants nominated ecstasy as the drug they were under the influence of when engaging in penetrative sex with a casual sex partner recently (60%), followed by alcohol (54%) and cannabis (42%) (see Table 44). There was a significant decrease in the use of alcohol when engaging in casual sex (54% versus 89%; p=0.0003; 95% CI: 0.18−0.5).

Two-thirds of participants (66%) who had had recent penetrative sex with a casual partner whilst under the influence of drugs reported that they had used protection, whilst the

remaining 34% reported that they had not used protection. These were very similar proportions to those who had used protective barriers when sober. The main reasons for not using protection whilst on drugs included: it wasn't mentioned (n=4), agreed not to (n=3), participant didn't want to (n=3), using a contraceptive pill (n=3) or they were too intoxicated (n=2). One participant reported lack of availability and one reported that it was a repeat partner who they knew didn't have an STI.

Table 44: Drug use during sex with a casual partner in the preceding six months, 2012

	2012 n=59
Penetrative sex with casual partner while on drugs (%)[*#]	**85**
No. times had sex while on drugs with casual partner (%)	**n=50**
Once	**10**
Twice	**6**
3-5 times	**34**
6-10 times	**22**
Eleven +	**28**
Drugs used during last sexual episode	**n=50**
Ecstasy	**60**
Alcohol	**54**
Cannabis	**42**
Methamphetamine – powder	**0**
Methamphetamine – base	**4**
Methamphetamine – crystal	**6**
Cocaine	**10**
LSD	**0**
Ketamine	**0**
MDA	**0**
Amyl nitrate	**2**
Nitrous oxide	**4**
GHB	**0**
Pharmaceutical stimulants	**2**
Heroin	**2**
Use of protection during sex with casual partner under influence of drugs (%)[#]	**n=50**
Yes	**66**
No	**34**
Not applicable	**0**

Source: EDRS participant interviews
[*] In the six months preceding interview
[#] Of those who had sex with a casual partner

7.4 Driving risk behaviour

Eighty-four percent of REU reported that they had driven a vehicle in the preceding six months (n=77). These participants were asked whether they had driven after consuming any illicit drug(s) in the six months prior to interview, and, if so, which drugs were involved. They were also asked if they had driven whilst under the influence of alcohol and over the limit for alcohol. The results are detailed in Table 45.

Table 45: Recent occurrence of driving following drug use, 2011 & 2012

% of recent drivers	2011 (n=62)	**2012 (n=77)**
Driven under the influence of alcohol*	65	**57**
Driven over the limit for alcohol**	63	**82**
Driven after taking any illicit drug*	60	**56**
Driven after illicit use of#:	(n=37)	**(n=43)**
Ecstasy	41	**56**
Methamphetamine– powder	22	**9**
Methamphetamine – base	16	**9**
Methamphetamine – crystal	19	**14**
Pharmaceutical stimulants	0	**0**
Cannabis	78	**72**
LSD	5	**0**
MDA	0	**0**
'Magic mushrooms'	0	**5**
Cocaine	5	**2**
Ketamine	0	**0**
Nitrous oxide	3	**0**
Heroin	3	**0**
Other opiates	0	**0**
Benzodiazepines	3	**2**
Other	0	**2**

Source: EDRS participant interviews
* In the six months preceding interview
** Of those who had DUI of alcohol
# Of those who had DUI of illicit drugs

Fifty-seven percent of the participants (n=44) who had driven a vehicle in the six months prior to interview reported that they had driven under the influence of alcohol. Forty-seven percent (n=36) of the participants who had driven a vehicle in the six months prior to interview reported that they had driven whilst over the limit for alcohol, and they had done so on a median of two occasions (range 1-20) during that period. Forty-two percent of recent drivers (n=32) had been random breath tested (for alcohol) in the six months prior to interview; however, only one participant registered a positive result for being over the legal limit.

Fifty-six percent of recent drivers (n=43) also reported that they had driven after consuming an illicit drug, and they had done so on a median of 5.5 occasions (range: 1-180). The drugs most commonly reported as having been used prior to driving, in the previous six months, were cannabis (72%), ecstasy (56%), crystal methamphetamine (14%) and methamphetamine powder and base (9% respectively). The 'last' time participants drove they did so under the influence of cannabis (63%), ecstasy (33%) and methamphetamine powder and base (5% each). Participants reported driving a median of one hour after taking any illicit drug (range 0-30 hours; n=43). Thirty-one percent of recent drivers (n=24) had ever been tested for drug driving, with 11 participants reporting that they had been tested for drug driving in the six months prior to interview. Three participants reported that they had tested positive to their most recent drug driving test. Cannabis (n=3), amphetamines (n=1) and MDMA (n=1) were the most common drugs detected.

In 2012, participants who had driven after consuming illicit drugs were asked how they thought their driving ability had been impacted on the last occasion of drug driving. The majority of participants (58%) reported that it had no impact, 30% said it impaired their driving ability and 12% thought it had improved their ability to drive.

7.5 The Alcohol Use Disorders Identification Test (AUDIT)

The AUDIT (Saunders et al., 1993) was completed by REU participants in the EDRS for the fifth year running. The AUDIT was designed by the World Health Organization (WHO) as a brief screening scale to identify individuals with alcohol problems, including those in the early stages. It is a 10-item scale, designed to assess three conceptual domains: alcohol intake; dependence; and adverse consequences (Reinert & Allen, 2002). Total scores of eight or more are recommended as indicators of hazardous and harmful alcohol use and may also indicate alcohol dependence (Babor et al., 1992). Higher scores indicate greater likelihood of hazardous and harmful drinking; such scores may also reflect greater severity of alcohol problems and dependence, as well as a greater need for more intensive treatment (Babor et al., 2000).

Table 46 presents an overview of the AUDIT scores. The overall mean score on the AUDIT was 16.2 (SD=6.8, range 0-34), and there were no significant differences in female and male AUDIT scores. Eighty-eight percent of the sample scored eight or more, which are levels at which alcohol intake may be considered hazardous; again there were no significant differences between male and female participants.

The total AUDIT score places respondents into one of four 'zones' or risk levels. In 2012, 12% scored in Zone 1 (low-risk drinking or abstinence), 34% scored in Zone 2 (alcohol use in excess of low-risk guidelines), a fifth (21%) scored in Zone 3 (harmful or hazardous drinking) and a third (33%) scored in Zone 4 (those in this zone may be referred to evaluation and possible treatment for alcohol dependence). This was stable from 2011.

Table 46: AUDIT total scores and proportion of REU scoring above recommended levels indicative of hazardous alcohol intake, 2011 & 2012

	2011	**2012**
Mean AUDIT total score	15.8	**16.2**
SD	7.2	**6.8**
(range)	(0-30)	**(0-34)**
Score 8 or above (%)	90	**88**
Zone 1	11	**12**
Zone 2	42	**34**
Zone 3	18	**21**
Zone 4	29	**33**

Source: EDRS participant interviews

Note: Zone 1 refers to low risk drinking or abstinence; Zone 2 consists of alcohol use in excess of low-risk guidelines; Zone 3 may refer to harmful or hazardous drinking; and Zone 4 may be indicative of those warranting evaluation or treatment for alcohol dependence

8 LAW ENFORCEMENT-RELATED TRENDS ASSOCIATED WITH ECSTASY RELATED DRUG USE

Key Findings

- The proportion of participants who had engaged in a criminal offence in the month prior to interview remained stable at 45%.
- The majority of the sample perceived that police activity towards REU had remained stable in the previous six months, whilst a third believed that it had increased.
- Fifteen percent of REU reported that they had been arrested in the past year, stable from 2011.
- Arrests made by SA police increased for amphetamine-type stimulants and cannabis, and decreased for cocaine.

8.1 Reports of criminal activity among REU

Table 47 summarises participants' reports of criminal activity in the month prior to interview, arrests in the 12 months prior to interview and lifetime prison history, since 2004. In 2012, 45% of participants reported involvement in some type of crime in the month prior to interview, which was stable from 2011. Drug dealing was the most commonly reported crime across all years of the survey. Smaller proportions of participants also reported involvement in a property crime, fraud and violent crime in the month prior to interview.

Table 47: Criminal activity in the month prior to interview, as reported by participants, 2004–2012

	2004 (n=100)	2005 (n=100)	2006 (n=101)	2007 (n=100)	2008 (n=74)	2009 (n=100)	2010 (n=92)	2011 (n=76)	**2012 (n=92)**
Criminal activity in last month:									
Property crime	6	3	3	10	7	19	4	20	**16**
Drug dealing	21	25	26	23	19	29	19	33	**28**
Fraud	1	3	4	3	1	2	4	4	**1**
Violent crime	0	2	3	4	0	5	4	11	**7**
Any crime	25	27	30	29	23	38	22	46	**45**
Arrested in last 12 months	5	8	11	8	11	13	12	16	**15**
Ever in prison	5	1	5	10	7	8	**6**	Not asked	**7**

Source: EDRS participant interviews

8.2 Perception of police activity towards REU

Table 48 presents data since 2004 on participant's perception of police activity in the six months leading up to the survey. In 2012, the majority of the participants (68%) reported that police activity had remained stable and a third (32%) reported that it had increased. No participants suggested that police activity towards regular ecstasy users had decreased in the preceding six months.

Table 48: Perception of police activity in the six months prior to interview, as reported by participants, 2004–2012

% of participants	2004 (n=100)	2005 (n=100)	2006 (n=101)	2007 (n=100)	2008 (n=74)	2009 (n=100)	2010 (n=92)	2011 (n=76)	**2012 (n=92)**
Perception of police activity in last 6 months						n=74*	n=72*	n=40*	n=56*
More activity	27	26	34	27	26	60	46	33	**32**
Stable	27	55	44	35	32	36	53	63	**68**
Less activity	3	3	1	3	1	4	1	5	**0**
Don't know	43	16	22	35	41	-	-	-	**-**

Source: EDRS participant interviews
* This figure excludes participants who answered 'don't know'
Note: 'Don't know' was excluded from analysis from 2009 onwards

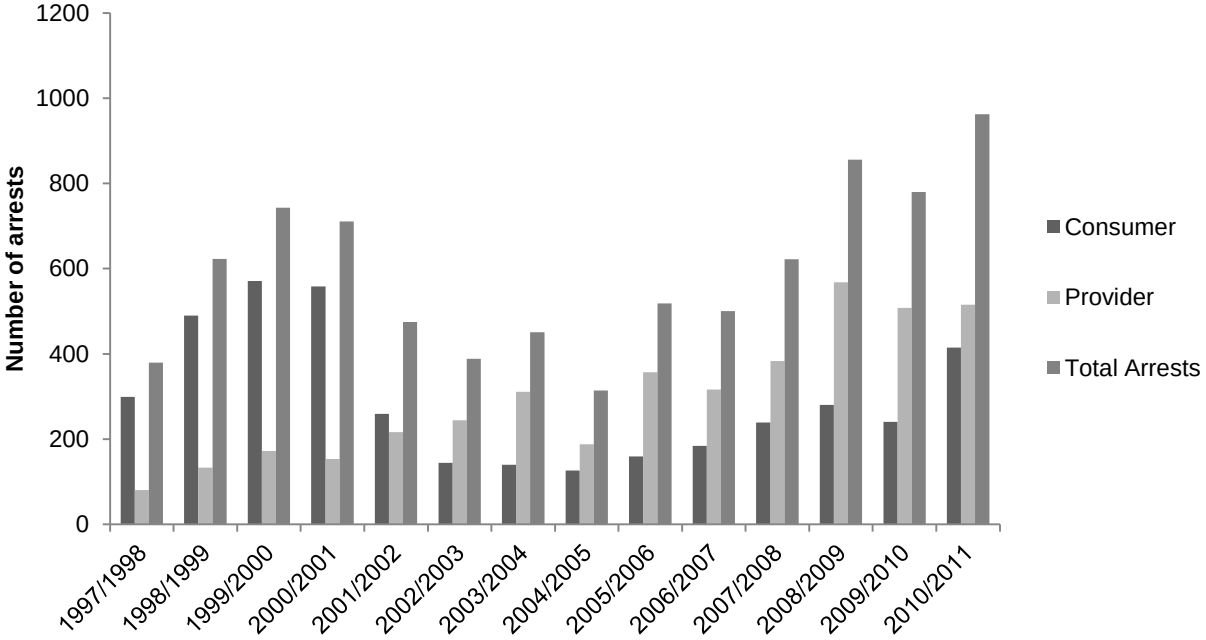
8.3 Arrests

Fifteen percent of REU (n=14) reported that they had been arrested within the last 12 months, similar to previous years. The most common reasons for arrest were violent crime (n=5; 36%), property crime (n=4; 29%) and being drunk and disorderly (n=2; 17%). Due to the very small numbers presented here, it is not possible to make any meaningful comparisons with the 2011 data.

8.3.1 Amphetamine-type stimulants

Figure 34 presents the number of consumer and provider arrests for amphetamine-type stimulants made in SA between 1997/98 and 2010/11. Amphetamine-type stimulants include amphetamine, methamphetamine and phenethylamines. The ACC classifies consumers as offenders who are charged with user-type offences (e.g. possession and use of illicit drugs), whereas providers are offenders who are charged with supply-type offences (e.g. trafficking, selling, manufacture or cultivation). The number of total arrests increased in 2010/11, continuing an overall upward trend that has been observed since 2004/05.

Figure 34: Number of amphetamine-type stimulants consumer and provider arrests, 1997/98–2010/11

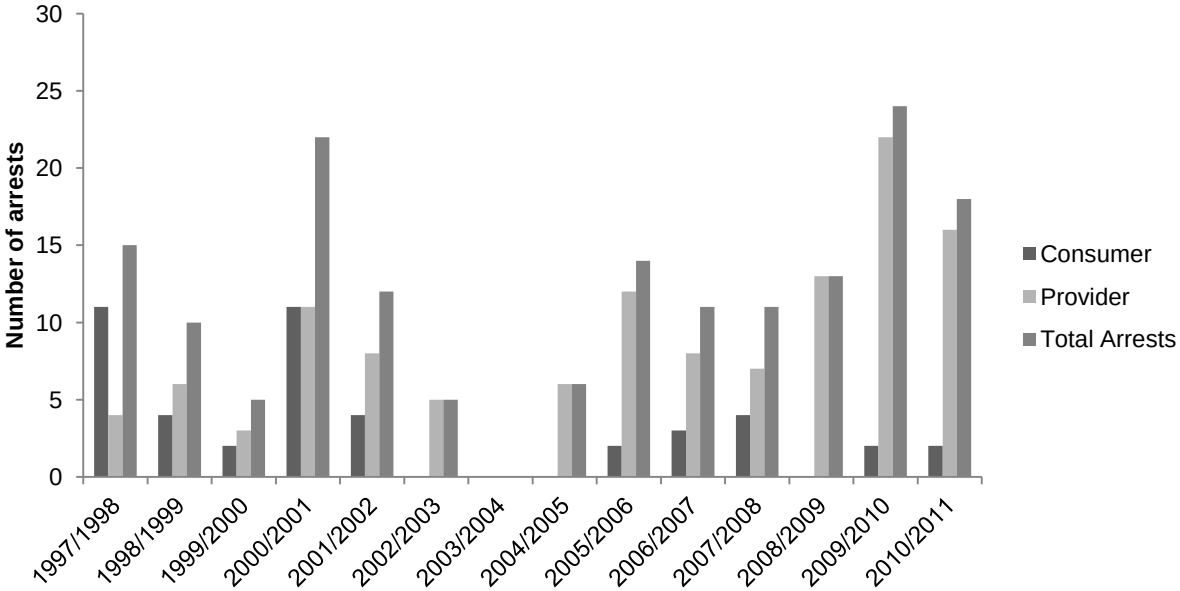


Source: Australian Bureau of Criminal Intelligence, 1999, 2000, 2001, 2002; Australian Crime Commission, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012
Note: Data not available for the 2011/2012 financial year. Also, total arrests includes those offenders for whom consumer/provider status was not stated and thus may exceed the sum of consumer and provider arrests.

8.3.2 Cocaine

In 2010/2011, provider arrests decreased slightly from 22 to 16, and consumer arrests remained stable at 2. Total cocaine-related arrests remained low.

Figure 35: Number of cocaine consumer and provider arrests, 1997/98–2010/11

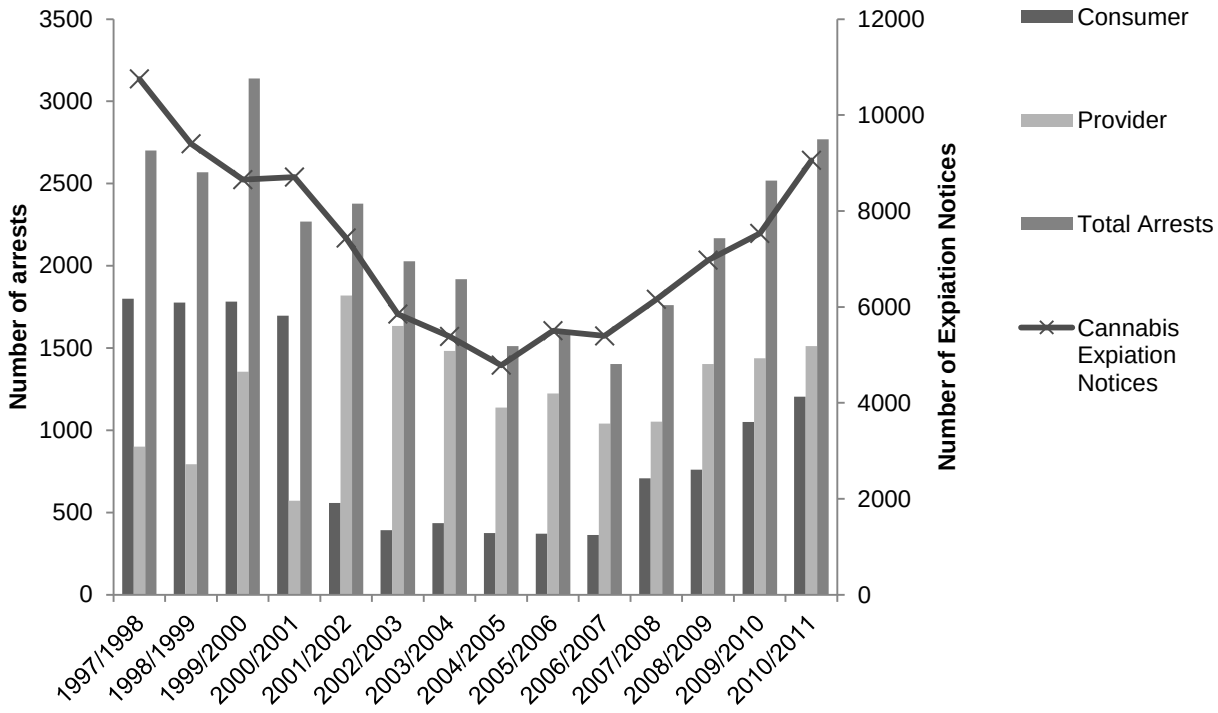


Source: Australian Bureau of Criminal Intelligence, 1999, 2000, 2001, 2002; Australian Crime Commission, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012
Note: Data not available for the 2011/2012 financial year. Also, total arrests includes those offenders for whom consumer/provider status was not stated and thus may exceed the sum of consumer and provider arrests.

8.3.3 Cannabis

Figure 36 presents the number of cannabis consumer and provider arrests in SA from 1997/98 to 2010/11. It also presents the total number of Cannabis Expiation Notices, which is a small fine used to deal with minor cannabis offences, whereby the offence is expiated on payment of the fine. In SA, a higher number of drug-specific arrests were due to provider-type cannabis offences. Total cannabis arrests increased slightly in 2010/11, continuing an upward trend that has been observed since 2005/06. The number of Cannabis Expiation Notices issued in SA also increased in 2010/11, representing the highest number of notices issued since 1998/1999.

Figure 36: Number of cannabis consumer and provider arrests, 1997/98–2010/11



Source: Australian Bureau of Criminal Intelligence, 1999, 2000, 2001, 2002; Australian Crime Commission, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012
Note: Data not available for the 2011/2012 financial year. Also, total arrests includes those offenders for whom consumer/provider status was not stated and thus may exceed the sum of consumer and provider arrests.

8.4 Perceptions and knowledge of drug law thresholds

In 2012, participants were asked about their understanding of some of the laws surrounding possession and sale and supply of illicit drugs. More specifically, they were asked the following hypothetical question: “Imagine you are caught by police and have drugs on you; do you think the quantity of drugs will affect the type of charge you get”? If the participant answered yes to this question, they were then asked what quantity they would need to be caught with to be charged with sale or supply of drugs, as opposed to possession for personal use.

The majority of participants (93%) believed that the quantity of drugs would affect the type of charge they got; however, there was large variation in what the perceived drug law

thresholds were (see Table 49). Perhaps of most concern was the discrepancy between the perceived and actual thresholds for trafficable quantities of MDMA.

Table 49: Perceived drug law thresholds versus actual thresholds, 2012

	Perceived thresholds (median; range; n)	Actual threshold for trafficable quantities, SA
Heroin		
points	5 (1-10; 4)	
grams	1.1 (0.1-1000; 19)	2g
Methamphetamine		
points	3 (1-10; 14)	
grams	2 (0.5-500; 29)	2g
MDMA		
pills	8 (1-100; 65)	
grams	2.5 (1-150; 11)	0.5g
Cocaine		
grams	2 (0.1-28.3; 43)	2g
Cannabis		
ounces	1 (0.5-32; 34)	
grams	25 (0.5-1000; 27)	2-100g*

Source: EDRS participant interviews; http://ndarc.med.unsw.edu.au/content/legislative-thresholds

*varies according to type of cannabis; cannabis oil=2g, cannabis resin=20g, cannabis leaf =100g, cannabis plants =10

9 SPECIAL TOPICS OF INTEREST

Key Findings

Heavy Smoking Index nicotine dependence

- Among those who smoked daily, about one-third reported waiting 60 minutes or longer before smoking their first cigarette for the day.
- Forty-five percent of daily smokers reported smoking 10 or less cigarettes per day.
- Of daily smokers, the mean HSI score was 3.0.
- Approximately one-fifth of daily smokers scored 6 or above indicating high to very high nicotine dependence.

Neurological history

- Only one participant reported lifetime prevalence of stroke, and there were no participants who reported lifetime prevalence of epilepsy or hypoxia.
- However, 44% of REU reported a lifetime history of traumatic brain injury.
- Of those who had a lifetime history of traumatic brain injury: 45% reported being under the influence of alcohol at the time of injury, 20% had been under the influence of illicit drugs and 77% experienced neuropsychological sequelae following the injury.

Body image

- Fourteen percent of REU reported the use of illicit psycho-stimulants to help lose or maintain weight in their lifetime.
- The most commonly used drugs for this purpose were ecstasy and methamphetamine.
- Participants who had ever used illicit psycho-stimulants to help them lose or maintain weight were significantly more likely to be female and were also more likely to be worried about gaining weight if they were to cease their psycho-stimulant use.

Drug policy attitudes

- In regards to policy initiatives designed to reduce the problems associated with heroin, the majority of REU supported needle and syringe programs, methadone/buprenorphine maintenance programs and regulated injecting rooms.
- The majority of REU supported legalisation of cannabis, and over a third supported the legalisation of ecstasy.
- Forty-two percent of REU supported increased penalties for the sale or supply of heroin, and approximately one-third supported increased penalties for the sale or supply of methamphetamine.

Ecstasy dependence

- REU scored a median of 1 on the ecstasy SDS.
- Over one-third of the sample obtained a score of zero on the ecstasy SDS, and 14% obtained a score of 1 on the scale. This indicates that half of the sample reported no or few symptoms of dependence in relation to ecstasy use.

9.1 Heavy Smoking Index nicotine dependence

In 2012, EDRS participants who smoked daily were administered the full Fagerstrom Test for Nicotine Dependence (n=47); this is in contrast to 2011, in which participants were only asked two of the six questions. The sum of these scores was computed and a cut-off score of more than 5 was used to indicate high to very high nicotine dependence (Heatherton et al., 1991).

As seen in Table 50, almost one-fifth (17%) of the SA sample who commented reported smoking their first cigarette within five minutes of waking and one-third (30%) between five to 30 minutes of waking. Most daily smokers did not find it difficult to refrain from smoking in smoke free areas, and one-third of the sample (36%) reported they would find the first cigarette in the morning the most difficult to give up. The majority of EDRS participants (85%) reported smoking between 10 or less to 11−20 cigarettes per day. A minority (15%) reported that they smoke more in the morning, and approximately one-third (30%) reported that they still smoke while sick in bed. The mean nicotine dependence score was 3.0 (SD 2.46). Twenty-one percent of daily smokers scored above five, indicating high to very high nicotine dependence.

Table 50: Heavy Smoking Index for nicotine dependence, 2011 & 2012

%	2011 (n=33)	**2012 (n=47)**
Time till first cigarette		
Within 5 minutes	27	**17**
5-30 mins	21	**30**
31-60 mins	15	**21**
60+ mins	36	**32**
Number of cigarettes smoked a day		
10 or less cigarettes	49	**45**
11-20 cigarettes	30	**40**
21-30 cigarettes	18	**13**
31 or more cigarettes	3	**2**
Difficulty in refraining from smoking in forbidden places	**-**	**17**
What cigarette would you hate to give up	**-**	
First in the morning		**36**
Other		**64**
Smoke more frequently in the morning	**-**	**15**
Smoke even when sick in bed	**-**	**30**
High dependence*	**-**	**21**
Mean score	**-**	**3.0 (0-9)**

Source: EDRS participant interviews
* Score of 6 or above

9.2 Neurological history

People with a neurological illness or injury may be at greater risk of experiencing adverse effects associated with drug use. Existing research indicates that there is an association between traumatic brain injury (TBI) and drug use (Corrigan, Bogner, & Holloman, 2012). This may be due to greater exposure to violence, mental illness, poor nutrition and poor sleep among other factors. TBI is a major cause of morbidity and mortality in developed countries (Bruns & Hauser, 2003) and can result in long term physical and cognitive impairments, as well as negatively impact upon psychological wellbeing, social and occupational outcomes (Tait, Anstey, & Butterworth, 2010). The cognitive, emotional and functional impairments associated with drug use could potentially compound those associated with TBI (Kelly et al., 1997). In 2012, the EDRS examined the prevalence of

selected neurological illnesses and also of TBI among REU. Tables Table 51 and Table 52 outline the results of this investigation.

Table 51: Incidence of selected neurological conditions among REU, 2012

n (%)	National n=601	SA n=92
Epilepsy	5 (0.8%)	**0**
Stroke	1 (0.2%)	**1 (1%)**
Hypoxia	2 (0.3%)	**0**
Traumatic Brain Injury	241 (40.1%)	**40 (44%)**

Source: EDRS participant interviews

In SA, there were no participants that reported a lifetime prevalence of epilepsy; this was lower than reported in the national sample and lower than the Australian population estimate (0.7%) obtained in the 2007−08 National Health Survey (ABS, 2009). Data from the same survey estimates the Australian prevalence of cerebrovascular disease (including stroke) as approximately 1.2%, which is substantially higher than reported at the national sample, but comparable to what was found in the SA sample. It is difficult to estimate the prevalence of hypoxic brain injury because it can result from a range of different situations (including drowning, carbon monoxide poisoning, heart attack etc.). Nonetheless, the prevalence of hypoxia in the national sample is reasonably low, and non-existent in the SA sample.

In contrast, a substantial proportion of the group (40% nationally and 44% in SA) reported a lifetime history of TBI[5]. In a recent study, Perkes et al. (2011) estimated the lifetime prevalence of TBI with loss of consciousness (LOC) as 35% among a community sample of males in Australia. Similarly, a cohort study conducted in Christchurch, New Zealand, demonstrated that approximately 32% of the community sample had experienced at least a mild traumatic brain injury by 25 years of age. Both of these prevalence estimates are lower than that recorded in our sample. However, caution should be used when directly comparing these figures due to differences in sampling techniques and data collection.

Table 52: Traumatic Brain Injury (TBI) among REU, 2012

	National n= 241	SA n=40
Median No. TBIs	2 (1-30)	**1 (1-5)**
For most severe TBI:		
Median LOC[a] (mins)	2 (0-33,120)	**3** **(0-240)**
Injury Severity (%)		
Mild TBI[b]	85	**85**
Moderate/Severe TBI[c]	15	**15**
Median age (years)	18 (0-46)	**18 (3-31)**
Under influence of alcohol (%):	32	**45**
Under influence of drugs (%):	17	**20**
Main drug[a]:	N=37	**n=8**
Cannabis	51	**50**
Ecstasy	34	**25**
Benzodiazepines	14	**0**
Heroin	11	**13**
Speed	11	**13**
Ice/Crystal	11	**25**

[a] LOC = Loss of consciousness. [b] LOC<30 minutes. [c] LOC≥ 30 minutes.
Source: EDRS participant interviews

[5] TBI was measured as a knock on the head resulting in loss of consciousness.

Multiple TBIs were uncommon in SA, with participants reporting a median of one TBI over their lifetime. Participants were asked further details about the most severe occasion. The vast majority of SA participants who had experienced a TBI reported that the LOC on the most severe occasion lasted only a few minutes (consistent with a mild injury). However, a reasonable proportion (15%) of this group reported a LOC of greater than half an hour (consistent with a moderate to severe TBI). The most severe TBI had usually occurred at a median of 18 years of age (range: 3-31). Almost half of the sample (45%) of the group were under the influence of alcohol at the time of the injury and one-fifth (20%) were under the influence of at least one drug. Of these, half (50%) reported they had been under the influence of cannabis and one-quarter (25%) had taken ecstasy or crystal methamphetamine.

Some people experience neuropsychological sequelae (symptoms such as cognitive, motor and behavioural changes) following a TBI which can complicate recovery. Over three-quarters of the SA sample (77%) reported having experienced neurological sequelae immediately following the injury. The most common complaints were memory loss (50%), poor concentration (43%) and problems finding the right words when speaking (40%). Ongoing complaints were less common; participants who had experienced ongoing issues complained mostly of ongoing memory deficits (n=3), ongoing word finding problems while speaking (n=3), ongoing poor concentration (n=2) and ongoing mood changes (n=2).

Table 53: Effects of TBI among REU, 2012

	National N=235	SA n=39
Experienced any effects[a] following the injury (%)	64	77
Experienced at the time (%):	N=151	n=30
Functional weakness	43	37
Poor concentration	55	43
Memory loss	57	50
Word finding problems	35	40
Poor coordination/ balance	52	37
Personality change	14	0
Mood/Anxiety issues	20	7

[a] Neurological, cognitive, behavioural or psychiatric effects.
Source: EDRS participant interviews

9.3 Body image

Research has highlighted a link between psychostimulant use and body image, suggesting that adolescent girls and young women with negative weight perceptions are more likely to engage in both licit and illicit substance use (Leventhal, 1983; Nieri et al., 2005; Weathers & Billingsley, 1982). Negative weight perceptions are of particular concern for psychostimulant users because, in addition to acting as mood enhancers, psychostimulant drugs suppress the appetite Other studies have found that female stimulant users exhibit higher levels of body image distortions and disordered eating behaviours than non-users (Curran & Robjant, 2006; Parkes et al., 2008) and that some young women report using these drugs specifically to lose weight (Boys, Marsden & Strang, 2001). For example, a recent Australian case report found that crystal meth or 'ice' use was associated with the onset of disordered eating and used as an efficient weight losing behaviour in an established eating disorder (Neale, Abraham & Russell, 2009). The aim of this module is to enhance understanding of the relationship between illicit psychostimulant (IPS) drug use and body image.

In 2012, 15% of REU reported that they had used IPS in their lifetime to help them lose or maintain their weight, and five participants had done this in the past six months.

Characteristics of REU who reported ever using IPS for weight management are presented in Table 54.

Table 54: Characteristics of REU who reported ever using IPS for weight management compared to those who did not, 2012

Have you ever used IPS to help lose or maintain weight? n (%)	No (n=78)	Yes (n=14)
Gender		
Male	80	36
Female	21	64**
BMI		
<18.5 (Underweight)	4	0
≥18.5 (≥Normal)	96	100
Which IPS have you ever used to help lose or maintain weight?		
Ecstasy	-	57
Methamphetamine	-	43
Cocaine	-	7
Ritalin	-	7
Duromine	-	7
Other/Don't know	-	14
Which IPS did you last use to help lose/maintain weight? #		n=5
Ecstasy	-	80
Duromine	-	20
Are you concerned you have lost too much weight because of your IPS use?	n=77	n=13
Yes	10	8
No	90	92
Are you concerned if you stop using IPS you will gain weight?	n=77	n=14
Yes	10	36*
No	90	64
Would weight gain be a desirable outcome should you cease or stop your IPS use?	n=77	n=14
Yes	12	7
No	88	93

Source: EDRS participant interviews
Of those who used IPS to lose or maintain weight during the past 6 months
**p<0.001; *p<0.05

Participants who had ever used illicit psycho-stimulants to help them lose or maintain weight were significantly more likely to be female (p=0.002; 95% CI: -0.65 − -0.16) and were also more likely to be worried about gaining weight if they were to cease their psycho-stimulant use (p=0.04; 95% CI: -0.5 − -0.04). The most commonly used drugs to help with losing or maintaining weight were ecstasy and methamphetamine.

9.4 Drug policy attitudes

Public opinion can play an important role in determining social policy and informing political processes (Matthew-Simmons, Love & Ritter, 2008). The vast majority of public opinion data regarding attitudes to drug policy in Australia is collected at the broader population level. In 2012, additional questions in the EDRS were asked to provide data about how people who use drugs perceive Australian drug policy, building on research undertaken as part of the wider Drug Policy Modelling Program (DPMP) project 'Public opinion and drug policy: Engaging the "affected community"'.

The policy questions were drawn from the National Drug Strategy Household Survey (Australian Institute of Health and Welfare, 2008) to ensure comparability with general

population responses. Participants in the 2012 EDRS were asked three policy questions: (1) Thinking about the problems associated with heroin use, to what extent would you support or oppose measures such as.....', (2) To what extent would you support or oppose the personal use of the following drugs being made legal?' and (3) To what extent would you support or oppose the increased penalties for sale or supply of the following drugs?'. Table 55 presents the collated 'strongly support' and 'support' response findings from participants in the EDRS. In regards to policy initiatives designed to reduce the problems associated with heroin, the majority of SA participants supported needle and syringe programs (77%), methadone/buprenorphine maintenance programs (72%), treatment with drugs other than methadone (71%) and regulated injecting rooms (52%).

The majority of the EDRS sample also supported the legalisation of cannabis (79%) for personal use and just over one-third (38%) supported the legislation of ecstasy for personal use.

Small numbers supported the increased penalties for sale or supply of cannabis (2%), ecstasy (11%) and cocaine (14%). However, 42% of REU supported the increased penalties for sale or supply of heroin and just under one-third (30%) supported increased penalties for sale or supply for methamphetamine.

Table 55: Support for measures to reduce problems associated with heroin, for legalisation of illicit drugs and the increase of penalties for illicit drugs, 2012

%	National	SA
Support measures to reduce problems associated with heroin use:	N=598	**n=92**
Needle syringe programs	85	**77**
Methadone/Buprenorphine maintenance program	68	**72**
Treatment with drugs (not methadone)	65	**71**
Regulated injecting room	65	**52**
Trial of prescribed heroin	34	**32**
Rapid detoxification therapy	40	**45**
Use of naltrexone	50	**64**
Support legalisation (personal use) of:	N=597	**n=92**
Cannabis	79	**79**
Heroin	15	**15**
Methamphetamine	16	**11**
Cocaine	25	**22**
Ecstasy	46	**38**
Support increased penalties for sale or supply of illicit drugs:	N=597	**n=92**
Cannabis	8	**2**
Heroin	49	**42**
Methamphetamine	37	**30**
Cocaine	24	**14**
Ecstasy	17	**11**

Source: EDRS participant interviews

9.5 Ecstasy dependence

The question as to whether it is possible to be dependent on ecstasy is a controversial one. Currently, in the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, text revision (DSM-IV-TR), it is possible to be diagnosed with ecstasy dependence (coded as either amphetamine dependence or hallucinogen dependence), and there are clear case studies in the literature of people who are dependent on ecstasy. In addition, animal models have demonstrated that dependence on ecstasy is biologically plausible. However, findings in relation to ecstasy dependence should be interpreted with caution due to the fact that there has been limited research into this syndrome (Degenhardt, Bruno & Topp, 2010).

To date, internationally, there have been a small number of studies of rates of dependence in ecstasy users. Studies from the US household survey suggest a prevalence rate of past-year dependence in approximately 3.6−3.8% of ecstasy users in the general population. An early NDARC study suggests a lifetime prevalence rate of 64% in similar types of REU interviewed in the EDRS.

In 2012, participants of the EDRS were asked questions from the Severity of Dependence Scale (SDS) adapted to investigate ecstasy dependence. The SDS is a five-item questionnaire designed to measure the degree of dependence on a variety of drugs. The SDS focuses on the psychological aspects of dependence, including impaired control of drug use, and preoccupation with and anxiety about use. The SDS appears to be a reliable measure of the dependence construct. It has demonstrated good psychometric properties with heroin, cocaine, amphetamine, and methadone maintenance patients across five samples in Sydney and London (Dawe et al., 2002). A total score was created by summing responses to each of the five questions. Possible scores range from 0 to 15.

Two cut-off scores are presented below of 3 or more and 4 or more. A cut-off score of 3 or more was used as these scores have been recently found in the literature to be a good balance between sensitivity and specificity for identifying problematic dependent ecstasy use (Bruno, Gomez & Matthews, 2011). Thirty-nine percent of REU obtained a score of 3 and above. The cut off score of 4 and above is a more conservative estimate which has been used previously in the literature as a validated cut-off for methamphetamine dependence (Topp & Mattick, 1997; Bruno et al., 2009). Twenty-nine percent of REU participants scored 4 or above. There was no significant gender differences regarding mean stimulant SDS score and those who scored 3 or 4 or above.

The median SDS score was 1 (range 0-10). Over one-third of the sample (37%) obtained a score of zero on the ecstasy SDS, and 14% obtained a score of 1 on the scale. This indicates that half of the sample (51%) reported no or few symptoms of dependence in relation to ecstasy use. These findings are supported by the fact that the majority of participants (55%) reported that they ‘never or almost never’ felt that their use of ecstasy was out of control and 78% reported that they would find it ‘not difficult to stop or miss a prospective dose of ecstasy’.

10 REFERENCES

Andrews, G. & Slade, T. (2001) Interpreting scores on the Kessler Psychological Distress Scale (K10). *Australian and New Zealand Journal of Public Health*: 25 (6), 494-7.

Australian Bureau of Criminal Intelligence (1999) *Australian Illicit Drug Report 1997−1998*. Canberra: Australian Bureau of Criminal Intelligence.

Australian Bureau of Criminal Intelligence (2000) *Australian Illicit Drug Report 1998−1999*. Canberra: Australian Bureau of Criminal Intelligence.

Australian Bureau of Criminal Intelligence (2001) *Australian Illicit Drug Report 1999−2000*. Canberra: Australian Bureau of Criminal Intelligence.

Australian Bureau of Criminal Intelligence (2002) *Australian Illicit Drug Report 2000−2001*. Canberra: Australian Bureau of Criminal Intelligence.

Australian Bureau of Statistics (2007) *National Survey of Mental Health and Wellbeing: Summary of Results*. Canberra, Australian Bureau of Statistics.

Australian Bureau of Statistics (2009) *National Health Survey: Summary of Results 2007−2008*. Canberra: Australian Bureau of Statistics.

Australian Crime Commission (2003) *Australian Illicit Drug Data Report 2001−2002.* Canberra: Australian Crime Commission.

Australian Crime Commission (2004) *Australian Illicit Drug Data Report 2002−2003.* Canberra: Australian Crime Commission.

Australian Crime Commission (2005) *Australian Illicit Drug Data Report 2003−2004.* Canberra: Australian Crime Commission.

Australian Crime Commission (2006) *Australian Illicit Drug Data Report 2004−2005.* Canberra: Australian Crime Commission.

Australian Crime Commission (2007) *Australian Illicit Drug Data Report 2005−2006.* Canberra: Australian Crime Commission.

Australian Crime Commission (2008) *Australian Illicit Drug Data Report 2006−2007.* Canberra: Australian Crime Commission.

Australian Crime Commission (2009) *Australian Illicit Drug Data Report 2007−2008.* Canberra: Australian Crime Commission.

Australian Crime Commission (2010) *Australian Illicit Drug Data Report 2008−2009.* Canberra: Australian Crime Commission.

Australian Crime Commission (2011) *Australian Illicit Drug Data Report 2009−2010.* Canberra: Australian Crime Commission.
Australian Crime Commission (2012) *Australian Illicit Drug Data Report 2010−2011.* Canberra: Australian Crime Commission.

Australian Institute of Health and Welfare (2002) *2001 National Drug Strategy Household Survey*: *Detailed Findings*. Canberra: Australian Institute of Health and Welfare.

Australian Institute of Health and Welfare (2005) *2004 National Drug Strategy Household Survey*: *Detailed Findings*. Canberra: Australian Institute of Health and Welfare.

Australian Institute of Health and Welfare (2008) *2007 National Drug Strategy Household Survey*: *Detailed Findings*. Canberra: Australian Institute of Health and Welfare.

Australian Institute of Health and Welfare (2011) *2010 National Drug Strategy Household Survey*: *Detailed Findings*. Canberra: Australian Institute of Health and Welfare.

Babor, T., de la Fluente, J., Saunders, J.R., & Grant, M. (1992) *The Alcohol Use Disorders Identification Test: Guidelines for use in Primary Health Care.* Geneva, Switzerland: World Health Organization.

Babor, T., Higgins-Biddle, J.R., Saunders, J. & Monteiro, M. (2000*) The Alcohol Use Disorders Identification Test: Guidelines for use in primary care*. World Health Organization. Geneva: Department of Mental Health and substance dependence. Published document WHO/MSD/MSB/01.6a.

Balfe, M. & Brugha R. (2009) What prompts young adults in Ireland to attend health services for STI testing? *BMC Public Health,* 9, 311.

Barry, D. & Petry, N. M. (2009) Associations between body mass index and substance use disorders differ by gender: Results from the National Epidemiologic Survey on Alcohol and Related Conditions. *Addictive Behaviours,* 34**,** 51-60.

Biernacki, P. & Waldorf, D. (1981) Snowball sampling: Problems, techniques and chain referral sampling. *Sociological Methods and Research,* 10*,* 141-63.

Boys, A., Lenton, S. & Norcoss, K. (1997) Polydrug use at raves by a Western Australian sample. *Drug and Alcohol Review,* 16, 227-34.

Boys, A., Marsden, J. & Strang, J. (2001) Understanding reasons for drug use amongst young people: A functional perspective. *Health Education Research*, 16 (4), 457-69.

Breen, C., Topp, L. & Longo, M. (2002) *Adapting the IDRS methodology to monitor trends in party drug markets: Findings of a two year feasibility trial.* NDARC Technical Report No. 142. Sydney: National Drug and Alcohol Research Centre, University of New South Wales.

Breen, C., Degenhardt, L., Roxburgh, A., Bruno, R., Fetherston, J., Jenkinson, R., Kinner, S., Moon, C., Proudfoot, P., Ward, J. & Weekley, J. (2004) *Australian Drug Trends 2003: Findings from the Illicit Drug Reporting System (IDRS)*. Sydney: National Drug and Alcohol Research Centre, University of New South Wales.

Bruno, R., Matthews, A.J., Topp, L., Degenhardt, L., Gomez, R. & Dunn, M. (2009) Can the severity of dependence scale be usefully applied to 'ecstasy'? *Neuropsychobiology,* 60, 137-147.

Bruno, R., Gomez, R. & Matthews, A. (2011) Choosing a cut-off on the severity of dependence scale for ecstasy use, *The Open Addiction Journal,* 4, 13-14.

Bruns, J. Jr. & Hauser, W.A. (2003) The epidemiology of traumatic brain injury: A review. *Epilepsia,* 44 (Supplement 10), 2-10.

Camilleri, A.M. & Caldicott, D. (2005) Underground pill testing, down under. *Forensic Science International,* 151 (1), 53-8.

Chen, C., Kostakis, C., Harpas, P., Felgate, P., Irvine, R. & White, J. (2011) Marked decline in 3,4-Methylenedioxymethamphetamine (MDMA) based on wastewater analysis. *Journal of Studies on Alcohol and Drugs,* 72, 737-740.

Corrigan, J.D., Bogner, J. & Holloman, C. (2012) Lifetime history of traumatic brain injury among persons with substance use disorders. *Brain Injury,* 26 (2), 139-150.

Cummins, R.A., Woerner, J., Gibson, A., Lai, L., Weinberg, M. & Collard, J. (2007) Australian Unity Wellbeing Index Survey 20. Report 20.0, October 2008. *Part A: The Report. The Wellbeing of Australians – Money, debt and loneliness*. Melbourne, The School of Psychology, Deakin University, Australian Centre on Quality of Life.

Curran, H.V. & Robjant, K. (2006) Eating attitudes, weight concerns and beliefs about drug effects in women who use ecstasy. *Journal of Psychopharmacology*, 20 (3), 425-31.

Dalgarno, P.J. & Shewan, D. (1996) Illicit use of ketamine in Scotland. *Journal of Psychoactive Drugs,* 28*,* 191-9.

Darke, S., Cohen, J., Ross, J., Hando, J. & Hall, W. (1994) Transitions between routes of administration of regular amphetamine users. *Addiction,* 89, 1077–83.

DASSA analysis of the 2007 National Drug Strategy Household Survey: First results dataset (unpublished). Adelaide: Drug and Alcohol Services South Australia.

Dawe, S., Loxton, N., Hides, L., Kavanagh, D.J. & Mattick, R.P. (2002). *Review of diagnostic screening instruments for alcohol and other drug use and other psychiatric disorders.* Canberra: Commonwealth Department of Health & Ageing.

Degenhardt, L., Bruno, R. & Topp, L. (2010) Is ecstasy a drug of dependence? *Drug and Alcohol Dependence*, 107, 1-10.

Forsyth, A.J.M. (1996) Places and patterns of drug use in the Scottish dance scene. *Addiction,* 91*,* 511-521.

Hando, J. & Hall, W. (1993) *Amphetamine use among young adults in Sydney, Australia*. Sydney: New South Wales Health Department.

Hando, J., Topp, L., & Hall, W. (1997) Amphetamine-related harms and treatment preferences of regular amphetamine users in Sydney, Australia. *Drug and Alcohol Dependence,* 46, 105-113.

Heatherton, T.F., Kozlowski, L.T., Frecker, R.C., Rickert, W. & Robinson, J. (1989) Measuring the heaviness of smoking: Using self-reported time to the first cigarette of the day and number of cigarettes per day, *British Journal of Addiction*, 84, 791-800.

John, U., Meyer, C., Rumpf, H. R., Hapke, U. & Schumann, A. (2006) Predictors of increased body mass index following cessation of smoking. *American Journal on Addictions,* 15**,** 192-197.

Kelly, M.P., Johnson, C.T., Knoller, N., Drubach, D. A. & Winslow, M.M. (1997) Substance abuse, traumatic brain injury and neuropsychological outcome. *Brain Injury,* 11 (6), 391-402.

Kerlinger, F.N. (1986) *Foundations of Behavioural Research (third edition).* Japan: CBS Publishing Limited.

Kessler, R., & Mroczek, D. (1994) *Final version of our non-specific Psychological Distress Scale*. Michigan: Survey Research Centre, Institute for Social Research, University of Michigan.

Kirby (The) Institute (2011) *Australian NSP Survey National Data Report 2005−2010*. Sydney: The Kirby Institute for infection and immunity in society, University of New South Wales

Kirby (The) Institute (2012) *Australian NSP Survey National Data Report 2007−2011*. Sydney: The Kirby Institute for infection and immunity in society, University of New South Wales

Leventhal, G. (1983) Body image of drug and alcohol abusers. *International Journal of the Addictions*, 18 (6), 791-804.

Longo, M., Humeniuk, R., Paul, C. & Ali, R. (2003) *South Australian drug trends 2002: Findings from the illicit drug reporting system (IDRS)*. Drug and Alcohol Services Council, South Australia. Sydney: National Drug and Alcohol Research Centre, University of New South Wales.

Matthew-Simmons, F., Love, S. & Ritter, A. (2008) A review of Australian public opinion surveys on illicit drugs. *DPMP Monograph Series No. 17*. Sydney: National Drug and Alcohol Research Centre, University of New South Wales.

National Centre in HIV Epidemiology and Clinical Research (2003) *Australian NSP Survey National Data Report 1995−2002*. Sydney: New South Wales, National Centre in HIV Epidemiology and Clinical Research, University of New South Wales.

National Centre in HIV Epidemiology and Clinical Research (2007a) *Australian NSP survey national data report 2001−2006.* Sydney: New South Wales, National Centre in HIV Epidemiology and Clinical Research, University of New South Wales.

National Centre in HIV Epidemiology and Clinical Research (2007b) *HIV/AIDS, viral hepatitis and sexually transmissible infections in Australia Annual Surveillance Report 2007.* Sydney: New South Wales, National Centre in HIV Epidemiology and Clinical Research, University of New South Wales.

National Centre in HIV Epidemiology and Clinical Research (2010) *Australian NSP Survey National Data Report 2005−2009*. Sydney: National Centre in HIV Epidemiology and Clinical Research, University of New South Wales.

National Notifiable Diseases Surveillance System (2013) *Number of notifications for all diseases by year, Australia, 1991 to 2012 and year-to-date notifications for 2012*. Notifications for all diseases by State & Territory and year. Canberra: Department of Health and Ageing.

National Health and Medical Research Council (2001) *Australian alcohol guidelines: Health risks and benefits.* Canberra: Commonwealth of Australia.

Neale, A., Abraham, S. & Russell, J. (2009) "Ice" use and eating disorders: A report of three cases. *International Journal of Eating Disorders*, 42 (2), 188-91.

Newcombe, R.G. (1998) Interval estimation for the difference between independent proportions: Comparison of eleven methods*. Statistics in Medicine,* 17, 873-890.

Nieri, T., Kulis, S., Keith, V.M. & Hurdle, D. (2005) Body image, acculturation, and substance abuse among boys and girls in the southwest. *American Journal of Drug and Alcohol Abuse*, 31 (4), 617-39

Ovendon, C. & Loxley, W. (1996) Bingeing on psycho stimulants in Australia: Do we know what it means (and does it matter)? *Addiction Research,* 4*,* 33-43.

Parkes, S.A., Saewyc, E.M., Cox, D.N. & MacKay, L.J. (2008) Relationship between body image and stimulant use among Canadian adolescents. *Journal of Adolescent Health*, 43, 616–8.

PASW (2009) PASW Statistics 18. 18th edition. Chicago, PASW inc.

Perkes, I., Schofield, P.W., Butler, T. & Hollis, S.J. (2011) Traumatic brain injury rates and sequelae: A comparison of prisoners with a matched community sample in Australia. *Brain Injury,* 25 (2), 131-141.

Peters, A., Davies, T. & Richardson, A. (1997) Increasing popularity of injection as the route of administration of amphetamine in Edinburgh. *Drug and Alcohol Dependence,* 48*,* 227-37.

Pickering, R. P., Grant, B. F., Chou, S. P. & Compton, W. M. (2007) Are overweight, obesity, and extreme obesity associated with psychopathology? Results from the national epidemiologic survey on alcohol and related conditions. *Journal of Clinical Psychiatry,* 68, 998-1009.

Quinn, C., Breen, C. & White, B. (2004) Illicit Tablet Market in Victoria. *PDI Drug Trends Bulletin, June 2004*. Available at: http://ndarc.med.unsw.edu.au/ndarc.nsf/website/IDRS.erds

Rajs, J., Petersson, A., Thiblin, I., Olsson-Mortlock, C., Fredriksson, A. & Eksborg, S. (2004) Nutritional status of deceased illicit drug addicts in Stockholm, Sweden: A longitudinal medicolegal study. *Journal of Forensic Sciences,* 49, 320-329.

Reinert, D.F. & Allen, J.P. (2002) The Alcohol Use Disorders Identification Test (AUDIT): A review of the recent research. *Alcoholism: Clinical & Experimental Research,* 26, 272-279.

Roxburgh, A. & Burns, L. (2010) *Drug related hospital stays in Australia 1993 to 2008*. Sydney: National Drug and Alcohol Research Centre, University of New South Wales.

Roxburgh, A. & Burns, L. (in press) *Drug-induced deaths in Australia, 2008 Edition.* Sydney: National Drug and Alcohol Research Centre, University of New South Wales.

Saunders, J.B., Aasland, O.G., Babor, T.F., de le Fuente, J.R. & Grant, M. (1993) Development of the Alcohol Use Disorders Identification test (AUDIT). WHO collaborative project on early detection of persons with harmful alcohol consumption – II. *Addiction*, 88, 791-804.

Siegel, S. & Castellan, N.J. (1988) *Nonparametric Statistics for the Behavioural Sciences*, Singapore, McGraw-Hill.

Solowij, N., Hall, W. & Lee, N. (1992) Recreational MDMA use in Sydney: A profile of 'Ecstasy' users and their experiences with the drug. *British Journal of Addiction,* 87*,* 1161-72.

South Australia Police (2004) *South Australian Police Annual Report 2003/2004*. Adelaide: South Australian Police.

South Australia Police (2005) *South Australian Police Annual Report 2004/2005*. Adelaide: South Australian Police.

South Australia Police (2006) *South Australian Police Annual Report 2005/2006*. Adelaide: South Australian Police.

South Australia Police (2007) *South Australian Police Annual Report 2006/2007*. Adelaide: South Australian Police.

South Australia Police (2008) *South Australian Police Annual Report 2007/2008*. Adelaide: South Australian Police.

South Australia Police (2009) *South Australian Police Annual Report 2008/2009*. Adelaide: South Australian Police.

South Australia Police (2010) *South Australian Police Annual Report 2009/2010*. Adelaide: South Australian Police.

South Australia Police (2011) *South Australian Police Annual Report 2010/2011*. Adelaide: South Australian Police.

South Australia Police (2012) *South Australian Police Annual Report 2011/2012*. Adelaide: South Australian Police.

Sutherland, R. & Burns, L. (2012) *SA Drug Trends 2011: Findings from the Illicit Drug Reporting System (IDRS)*. Australian Drug Trends Series No. 78. Sydney: National Drug & Alcohol Research Centre, University of New South Wales

Stafford, J., Degenhardt, L., Dunn, M., Fischer, J., George, J., Johnston, J., Matthews, A., Newman, J., Proudfoot, P. & Weekley, J. (2005) *Australian Trends in Ecstasy and Related Drug Markets 2005: Findings from the Party Drugs Initiative (PDI).* Australian Drug Trends Series No 58*.* Sydney: National Drug and Alcohol Research Centre, University of New South Wales.

Tait, R.J., Anstey, K.J. & Butterworth, P. (2010) Incidence of self-reported brain injury and the relationship with substance abuse: Findings from a longitudinal community survey. *BMC Public Health,* 10, 171.

Tandberg, D. *Improved confidence intervals for the difference between two proportions and the number needed to treat (nnt).* Version 1.49 from <http://www.cebm.net/index.aspx?o=1023>.

Topp, L. & Mattick, R. (1997) Choosing a cut-off on the Severity of Dependence Scale (SDS) for amphetamine users. *Addiction,* 92, 839-845.

Topp, L., Hall, W. & Hando, J. (1997) *Is There a Dependence Syndrome for Ecstasy?* NDARC Technical Report No. 51. Sydney: National Drug and Alcohol Research Centre, University of New South Wales.

Topp, L., Hando, J., Degenhardt, L., Dillon, P., Roche, A. & Solowij, N. (1998) *Ecstasy use in Australia.* NDARC Monograph No. 39. Sydney: National Drug and Alcohol Research Centre, University of New South Wales.

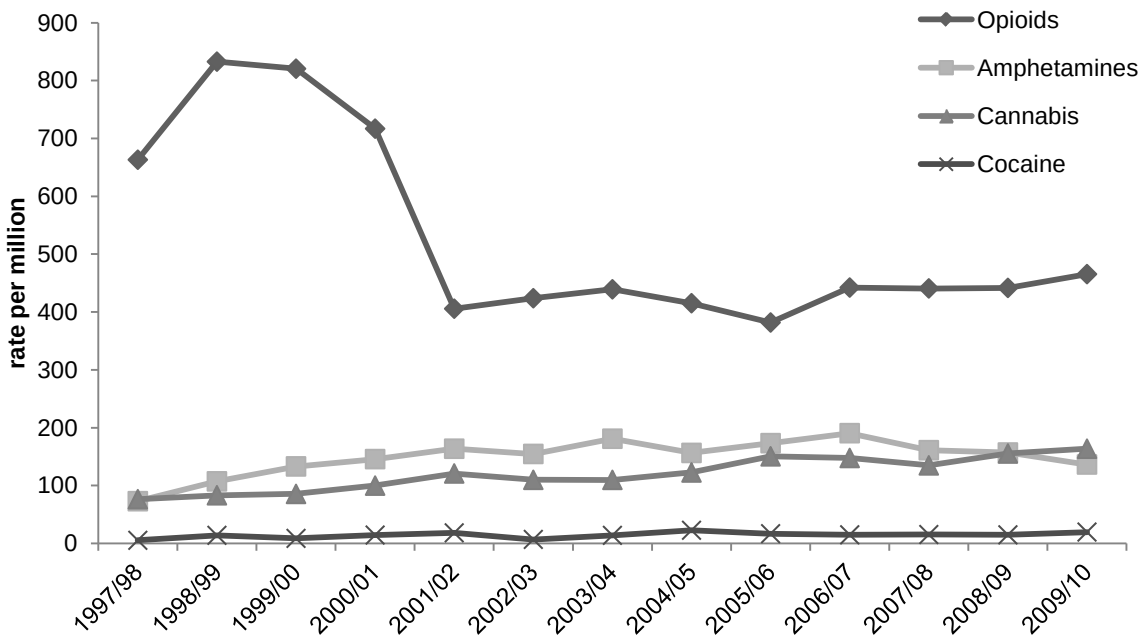
Topp, L., Hando, J., Dillon, P., Roche, A. & Solowij, N. (2000) Ecstasy use in Australia: Patterns of use and associated harms. *Drug and Alcohol Dependence*, 55, 105-115.

Weathers, C. & Billingsley, D. (1982) Body image and sex-role stereotype as features of addiction in women. *International Journal of the Addictions*, 17 (2), 343-7.

White, B., Breen, C. & Degenhardt, L. (2003) *NSW Party Drug Trends 2002: Findings from the Illicit Drug Reporting System (IDRS).* Party Drugs Module. Sydney: National Drug and Alcohol Research Centre, University of New South Wales.

World Health Organization (2003) *Investing in Mental Health*. Geneva: Department of Mental Health and Substance Dependence, Noncommunicable Diseases and Mental Health.

Appendix 1: Rate of substance-related admissions* (primary diagnosis) to hospital in Australia, 1997/1998–2009/10



Source: Australian Institute of Health and Welfare

* For persons aged between 15 and 54 years

Note: 'primary diagnosis' was given to those admissions where the substance was considered the primary reason for the patient's episode of care