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The Methamphetamine Situation in Australia: A review of routine data sources

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THE METHAMPHETAMINE SITUATION IN AUSTRALIA: A REVIEW OF ROUTINE DATA SOURCES

Rebecca McKetin and Jennifer McLaren

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Abbreviations

ABCI	Australian Bureau of Criminal Intelligence
ACC	Australian Crime Commission
ACS	Australian Customs Service
AFP	Australian Federal Police
AIHW	Australian Institute of Health and Welfare
ATS	Amphetamine-type Stimulants
COTSA	Clients of Treatment Service Agencies
DUCO	Drug Use Careers of Offenders
DUMA	Drug Use Monitoring in Australia
HIV	Human Immunodeficiency Virus
HCV	Hepatitis C Virus
ICD-10-AM	International Classification of Diseases – Version 10 – Australian Modification
IDRS	Illicit Drug Reporting System
IDU	Injecting Drug Users
NCHECR	National Centre in HIV Epidemiology and Clinical Research
NDSHS	National Drug Strategy Household Survey
NMDS	National Minimum Data Set
NSP	Needle and Syringe Program

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Health data presented in this report were collated and analysed through the NDARC project "Development of appropriate interventions for amphetamine users" which is funded by the Australian Government Department of Health and Ageing.

Executive Summary

Background

The purpose of the current report is to document what is known about the methamphetamine situation in Australia through an analysis of routinely collected data sources. Material presented in the report is intended to serve as background information for the NDLERF funded project "The emergence of potent forms of methamphetamine in Sydney: Developing our understanding of Australia's dynamic methamphetamine markets" and also as a reference guide on data sources relating to the methamphetamine situation in Australia.

Data sources

Data sources reviewed in this report consist of routinely collected indicator data and survey data that were publicly available at a national level. Routine indicator data sources included hospital separations (National Hospital Morbidity Database), treatment admissions (Alcohol and Other Drug Treatment Services National Minimum Data Set), mortality data, and drug arrest and drug seizure data collated by the Australian Crime Commission. Survey data includes national level surveys that are conducted on a regular basis including surveys of drug use among the general population (National Drug Strategy Household Survey), national surveys of drug use among school students, sentinel surveys of injecting drug users and party drug users conducted by the Illicit Drug Reporting System (IDRS), surveys of drug users who come in contact with the criminal justice system through the Drug Use Monitoring in Australia (DUMA) and the Drug Use Careers of Offenders (DUCO) programs, and surveys of injecting drug users through the Australian Needle and Syringe Program Survey. Data sources that may yield information on the Australian methamphetamine situation that are not included in this report are detailed in the section "other data sources".

The methamphetamine situation

Analysis of the above data sources showed both an increase in the supply and the use of methamphetamine in Australia over the past five years. Seizures of amphetamine-type stimulants (includes methamphetamine) in Australia increased tenfold from 156 kg in 1996-97 to just over 1.8 tons in 2001-02; this increase being characterised by both an increase domestic production of methamphetamine and importation of the drug, notably importation of high purity 'ice' methamphetamine. The increase in the supply and use of methamphetamine appeared to have begun around the mid to late 1990s (approximately 1998-99), while the emergence of the more potent forms of 'base' and 'ice' methamphetamine were first detected in 1999. Since 2001 all forms of methamphetamine (i.e., 'ice', 'base' and powder methamphetamine or 'speed') appeared to be readily available to users, although relatively speaking the powder form has remained the most readily available and most often used.

Currently 'amphetamines' (predominantly methamphetamine) are the second most commonly used illicit drug type after cannabis, with 9% of Australians having ever tried these drugs and about half-a-million Australians having taken the drug in the past year. Use is highest among young adults (20-29 years), and school survey data showed that by the age of 16-17 years around 8-10% of students have used the drug. Typically methamphetamine users are more likely to be male with a ratio of two males to every female, although there is less of a gender difference among adolescents using the drug. Methamphetamine use was observed among a broad range of population groups and

sentinel drug using groups (e.g., injecting drug users and party drug users). Injecting use was particularly high among those users seeking help for their drug use and amphetamine/methamphetamine injection accounted for a substantial proportion of injecting drug use in Australia.

The increase in the supply and use of methamphetamine was associated with an increase in related problems. More drug treatment clients were presenting with 'amphetamine' as their primary drug problem in 1998-2001 than in the early to mid 1990s, while there has been a noticeable increase in the number of admissions to hospitals in Australia for stimulant-induced psychosis and also other stimulant-related disorders. Methamphetamine users tended to have lower contact with health services than their opioid using counterparts, although it was noteworthy that high levels of methamphetamine use were seen among those people in contact with the criminal justice system (i.e., inmates and police detainees). Methamphetamine users who came into contact with health services and law enforcement tend to be slightly older than methamphetamine users seen among the general population, while those who came into contact with law enforcement were slightly more likely to be male.

Analysis of data sources

Currently available routinely collected data sources were able to provide general information about the extent of supply and demand for methamphetamine in Australia, methamphetamine-related trends, and some information on patterns of methamphetamine use. Specifically, these data can provide information relating to methamphetamine on the following issues:

- prevalence of use among the general population
- prevalence of use among the student population
- use patterns among the following specific populations
    - party drug users
    - injecting drug users
    - offenders
- treatment demand
- hospital service utilization for mental and behavioural problems due to stimulants (including psychosis)
- mortality due to poisoning or overdose
- arrest and seizure data for
    - domestic arrests and seizures
    - domestic clandestine laboratory seizures
    - import seizures
- purity for domestic seizures
- street level price and availability information among sentinel groups (party drug users and injecting drug users).

Areas not currently covered by routine data sources include the incidence of methamphetamine use; prevalence and incidence of methamphetamine dependence; extent and nature of the contact that methamphetamine users have with frontline services (e.g., ambulance and emergency personnel) and general health services (e.g., general practitioners). Further focussed research on how and whether methamphetamine use contributes to morbidity and mortality would improve use of routine data in monitoring the burden of methamphetamine, while utilising a uniform

classification system for methamphetamine forms (e.g., 'ice', 'base', powder) where feasible may enhance the utility of data for understanding methamphetamine use patterns and the nature of methamphetamine supply.

Conclusion

Analysis of the routinely collected data in Australia has been able to show that methamphetamine use and supply has increased in Australia from around 1998-99, and that this increase has co-occurred with an increase in related problems such as stimulant-induced psychosis. Moreover these data can provide some indication of the extent of methamphetamine use, broad demographic characteristics of users, and the extent of contact that users have with various health and law enforcement services. While these data have provided much information on the extent of methamphetamine use and methamphetamine-related trends it is also important to note that many of the issues surrounding the methamphetamine situation cannot be answered solely through analysis of routine data sources but require specific focussed research. In these cases routine data are often still essential and continued effort in collecting good quality routine data at a national level will improve prospects for gaining information that can assist with specific research and also serve as ongoing information resource for methamphetamine trends and related issues.

1 INTRODUCTION

The current report was carried out as part of a project on methamphetamine markets in Australia, namely "The emergence of potent forms of methamphetamine in Sydney: Developing our understanding of Australia's dynamic methamphetamine markets". This project is funded by the National Drug Law Enforcement Research Fund (NDLERF), and is being carried out by the National Drug and Alcohol Research Centre, in collaboration with the Australian Customs Service and the NSW Police. The current report also incorporates data from health and epidemiological sources, the analysis of which was funded through Australian Government Department of Health and Ageing under research on developing appropriate interventions for methamphetamine users.

The purpose of the current report is to document existing information sources that relate to methamphetamine use in Australia, particularly all publicly available routine data sources. The primary aim of the report is to examine routine data in Australia and determine what information these data can provide on the methamphetamine situation in Australia. A broad analysis of national data sources and interpretation of these data is provided in the final sections of this report. This discussion is made for the purposes of guiding further investigation and development of methamphetamine data sources rather than to be conclusive in the interpretation of the current data or the methamphetamine situation in Australia. Specifically, the data and related analysis presented in this report will guide further investigation of the methamphetamine situation through the NDLERF funded project "The emergence of potent forms of methamphetamine in Sydney: Developing our understanding of Australia's dynamic methamphetamine markets".

This report is also intended to serve as a reference of available data sources that various individuals and institutions can access regularly to find out about the current methamphetamine situation in Australia. In this capacity, it is anticipated that this report will form baseline information against which readers can compare future data, and serve as a starting point for further investigation and development of potential information sources on methamphetamine use in Australia through the above project and other research in Australia.

This report presents routine indicator data and survey data that are published or otherwise publicly available at a national level. Routine indicator data sources include hospital separations, treatment admissions, mortality data, arrest and seizure data. These data reflect the number and nature of methamphetamine users in Australia who come into contact with various health and law enforcement services and the trends in this service contact. As such these routine data do not represent actual numbers of methamphetamine users nor the experience of all methamphetamine users. Interpretation of these data should be supported by consideration of other information sources, such as survey data, in-depth research on methamphetamine use, and expert opinion about the nature of methamphetamine use. Survey data presented in this report includes those national level surveys conducted on a regular basis and publicly reported. Specifically these include surveys of drug use among the general population (National Drug Strategy Household Survey), surveys of drug use among students through the national school survey, sentinel surveys of injecting drug users and party drug users conducted by the Illicit Drug Reporting System (IDRS), surveys of drug users who come in contact with the criminal justice system through the Drug Use Monitoring in Australia

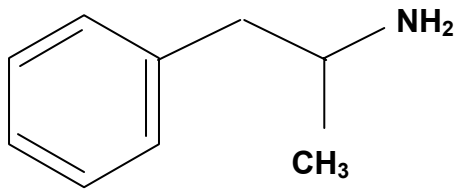
(DUMA) and Drug Use Careers of Offenders (DUCO) programs; and surveys of drug-using behaviour of injecting drug users through national HIV surveillance surveys.

Included in this report are only those data that were publicly available at a national level. Analysis of these data at a jurisdictional level would be valuable in many instances, as would more detailed analysis of national level data. This was not done in the current report because confidentiality restrictions prevent public access to jurisdictional level data or unit record files for many national data sources. There are also several additional methamphetamine-related data sources that would require detailed analysis and collation of unit record files. These data sources may be useful for specific research purposes and are detailed in the section "other data sources".

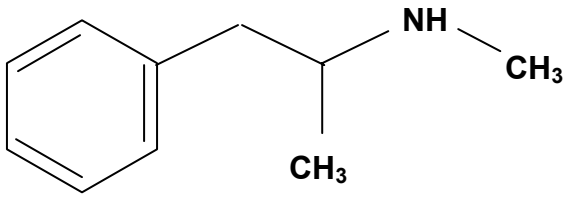
In addition to the type of information presented in this report, much specialized research has been conducted on methamphetamine use and related issues both in Australia and internationally. This type of information is beyond the scope and purpose of the current report but can be accessed through international journals on drug use. A convenient summary of much of the current information on methamphetamine research relevant to the Australian context is contained within Baker, Lee and Jenner (in press).

2 BACKGROUND AND TERMINOLOGY

Over the past few years Australia has seen the emergence of new forms of methamphetamine available on the illicit drug market. Traditionally methamphetamine available in Australia was the 'salt' form of amphetamine or methamphetamine (i.e., hydrochloride or hydrosulphate), which was marketed as a low purity powder called 'speed'. Methamphetamine and amphetamine are very similar in their chemical structure and pharmacological action (Figure 1). Most 'speed' available during the mid to late 1990s was actually methamphetamine (79-89%) (McKetin, Darke, Humeniuk, Dwyer, Bruno, Fleming, Kinner, Hargreaves & Rysavy, 2000; O'Brien, Darke, & Hando, 1996) even though 'speed' was often also referred to as 'amphetamine'. In the past few years, new more potent forms of methamphetamine have emerged – notably so-called 'base' methamphetamine and crystal methamphetamine or 'ice'. These are still the salt form of the drug but they contain a higher percentage of methamphetamine and have different physical characteristics. To alleviate any confusion about the different physical forms of methamphetamine referred to in this report, a brief description of each is provided below.



Amphetamine



Methamphetamine or
Methylamphetamine

Figure 1: Amphetamine and methamphetamine molecules

Methamphetamine powder, or 'speed'

'Speed' is the powder form of methamphetamine or amphetamine that has traditionally been available in Australia. The powder can range in consistency from fine to more crystalline or coarse powder that is whitish in colour, although colour can range to yellow, orange, brown or pink depending on the manufacture of the drug (Exhibit 1). Powder methamphetamine is usually injected, snorted or sometimes swallowed. It is still by far the most readily available form of methamphetamine in Australia.

Exhibit 1. Methamphetamine powder or 'speed'.

'Base'

Base methamphetamine, also known 'paste', 'wax', 'point' or 'pure' is a sticky, gluggy, waxy or oily form of damp powder paste or crystal that is manufactured in Australia and often has a yellow or brownish hue (Exhibit 2). True base methamphetamine is an oil, and may also occur in a waxy form. This 'oily' form of the drug is not soluble in water and consequently would be difficult to inject, and would also be difficult to snort. It could be speculated that most methamphetamine in Australia is probably poorly purified methamphetamine crystal resulting from an incomplete conversion of methamphetamine base to methamphetamine crystal. Iodine and residual chemicals from the 'cooking' process give the brownish-yellow colour, while the oily texture may be from residual base

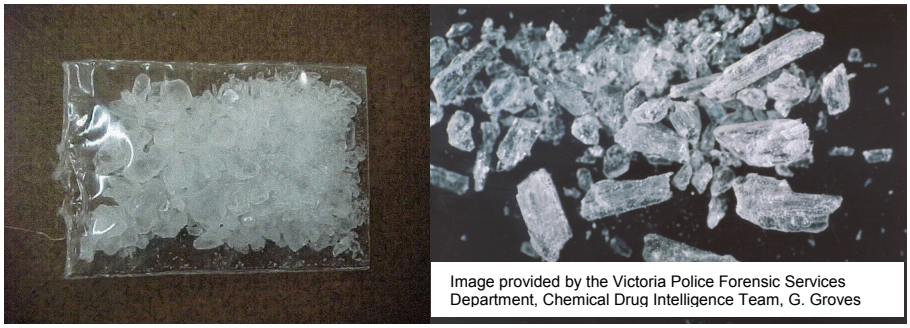
left in the mixture. However, there still remains some uncertainty about the actual composition of the so-called 'base' methamphetamine being used in Australia.

Exhibit 2. 'Base' methamphetamine available in Australia

Crystalline methamphetamine or 'Ice'

'Ice' is crystalline methamphetamine, and has the appearance of large translucent to white crystals or a coarse crystalline powder (Exhibit 3). These crystals are usually produced in Southeast Asia, notably Southeast China. Crystal methamphetamine is often trafficked to Australia and elsewhere via other countries within Southeast Asia (United Nations Office on Drug Control and Crime Prevention, 2002). Recently there has been an increase in the amount of crystalline methamphetamine being seized on importation into Australia, and there has been a parallel increase in the drug's availability and use on the local market. While this form of the drug can be injected, snorted or swallowed as with other forms of the drug, this high purity crystalline form lends itself to being smoked. Smoking of methamphetamine allows a rapid onset and intense drug effect, with 90% bioavailability and peak subjective and physiological effects occurring between 10 and 20 minutes after administration (Cook, Jeffcoat, Hill, Pugh, Patetta, Sadler, White & Perez-Reyes, 1993). A detailed description of the characteristics of 'ice' is provided in a paper by Cho "Ice: a new dosage form of an old drug" (Cho, 1990). To-date there has only been one reported case of clandestine production of 'ice' in Australia.

Exhibit 3. Crystalline methamphetamine or 'ice'



'Pills' or tablets

In Australia the main market for methamphetamine tablets appears to be among the 'party drug' scene where it is sold as ecstasy. However, data from the analysis of local pill seizures suggest that around half contain methamphetamine, often in combination with ketamine or other forms of amphetamine-type stimulants (personal communication August 2003, Cate Quinn).

Exhibit 4. Methamphetamine tablets

'Amphetamines' and ATS vs. methamphetamine

Most drugs sold as 'amphetamine' in Australia are actually methamphetamine, and for this reason the terms amphetamine and methamphetamine are often used interchangeably in this report. These compounds are very similar in their chemical structure and pharmacological action. The addition of a methyl group to the amphetamine molecule creates methamphetamine (also called methylamphetamine, Figure 1). The action of methamphetamine and amphetamine on the brain is almost identical, except that methamphetamine appears to have a stronger psychoactive effect.

The broader grouping of 'amphetamines' refers to amphetamine-related stimulants, including amphetamine and methamphetamine, but excluding ecstasy. Again, most illicit use of 'amphetamines' refers to methamphetamine use, and for practical purposes this is assumed in this report. The term 'amphetamine-type stimulants' or ATS refers to 'amphetamines' including amphetamine and methamphetamine, but also ecstasy and ecstasy-related compounds unless otherwise stated. Use of the term 'stimulants' refers to all amphetamine type stimulants and caffeine (as per ICD codes), but excludes the stimulant drug cocaine. This term is used in hospital separation data, and it is highly likely that most 'stimulant' cases in this context would actually be methamphetamine or amphetamine cases. This is because other stimulants in this category have not been strongly related to mental and behavioural disorders recorded by hospital separation data, such as dependence, withdrawal and psychosis.

3 EXISTING INFORMATION SOURCES

3.1 Extent of methamphetamine use

3.1.1 General population

The National Drug Strategy Household Survey has been undertaken every two-three years since 1985, and provides information on drug use from a representative sample of the Australian population aged 14 years or over. The most recent survey interviewed 26,744 Australians about their drug use. Data were collected either through personal interviews with a self completion section for sensitive information (n = 2055), self-administered questionnaires (n = 22,649) or a Computer Assisted Telephone Interview (n = 2040). Data on use of 'amphetamines' was based on reported use of Amphetamines/Speed for non-medical purposes, and included use of street drugs by the name of 'Crystal', 'Whizz', 'Goey', 'Zip', 'Uppers', and 'Ice'. While survey results pertain to use of 'amphetamines', it should be noted that almost all illicit 'amphetamines' available in Australian are methamphetamine.

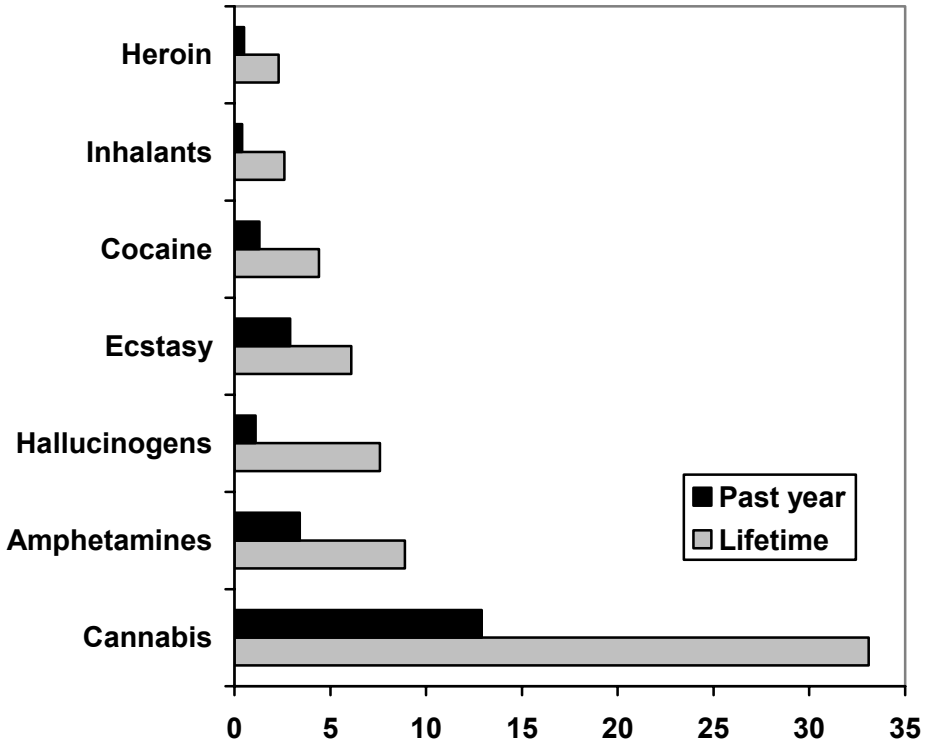


Figure 2: Lifetime and past year prevalence of illicit drug use among Australians aged 14 years and over, 2001

According to the 2001 National Drug Strategy Household Survey (AIHW, 2002), 'amphetamines' are the second most commonly used illicit drug in Australia after cannabis. Exposure to amphetamines among the general population (aged 14 years and over) is relatively high with 1.4 million, or 9% of people, having ever used these types of drugs (Figure 2). Recent use, which provides a better indication of the number of current users in Australia, was lower with 3.4% having used amphetamines in the last year, and even fewer having used in the past month (1.4%). It is noteworthy that among the 534,000 Australians who have used amphetamines in the past year, the majority (72%) use less than monthly. Only around one in ten current users (11.9%) would use the drug daily or weekly, this being equivalent to approximately 63,750 Australians aged 14 or over (Figure 3).

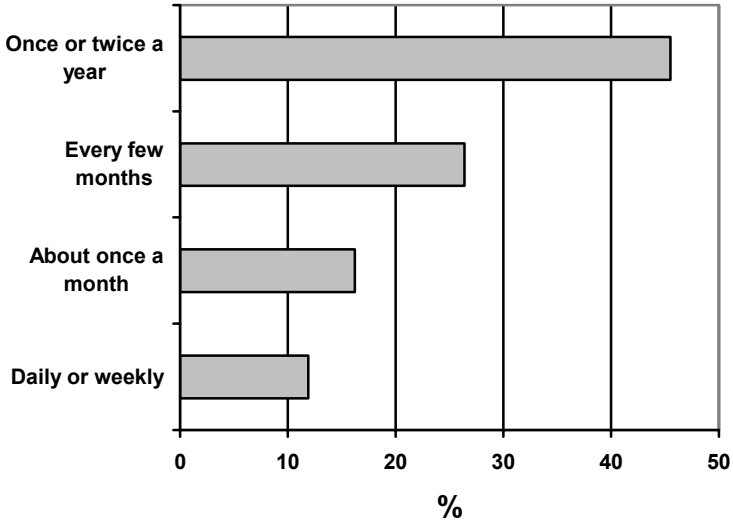


Figure 3: Frequency of amphetamine use among those Australians aged 14 or over who had used amphetamine in the past year, 2001.

Use is notably higher among young adults (20-29 years), this being a trend common to most illicit drug types that is not peculiar to Australia, being well documented internationally (Figure 4). Among this younger group, use levels were over double the national average with one-in-five having ever used the amphetamines, and one-in-ten having used them in the past year. Use was found to be slightly higher among males than females on a ratio of about two males to every female user.

The most common form of amphetamine used among the general population was powder methamphetamine, or 'speed', with 84% having used this form of the drug (Figure 5). There was a surprisingly high level of crystal methamphetamine use, with about one-third (38%) indicating use of this form. This is very high considering that crystal methamphetamine use was very rare in Australia until several years ago. Other forms of methamphetamine used included tablet form (14%), liquid form (9%) and prescription amphetamine (9%).

The most common forms of poly-drug use among amphetamine users were alcohol and cannabis use, with substantial proportions using other stimulant 'party' drugs such as ecstasy and cocaine. Use of depressant drugs such as heroin, prescription pain killers and sedatives was relatively low among this 'general population' group of amphetamine users.

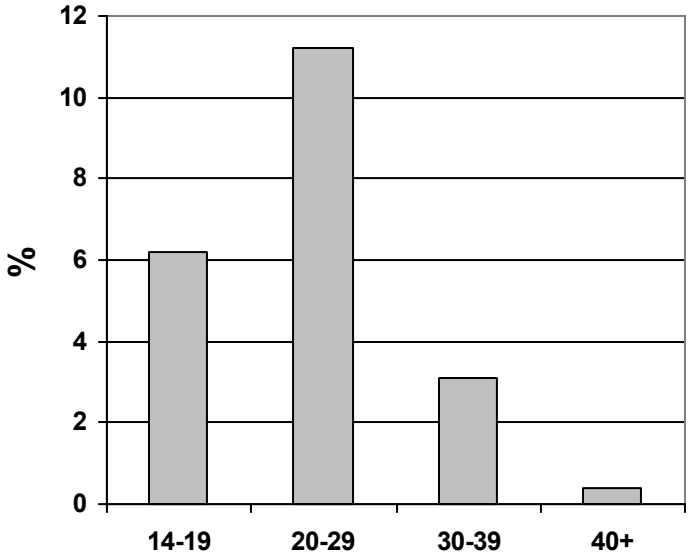


Figure 4: Past year prevalence of amphetamine use among Australians aged 14 and over by age, 2001

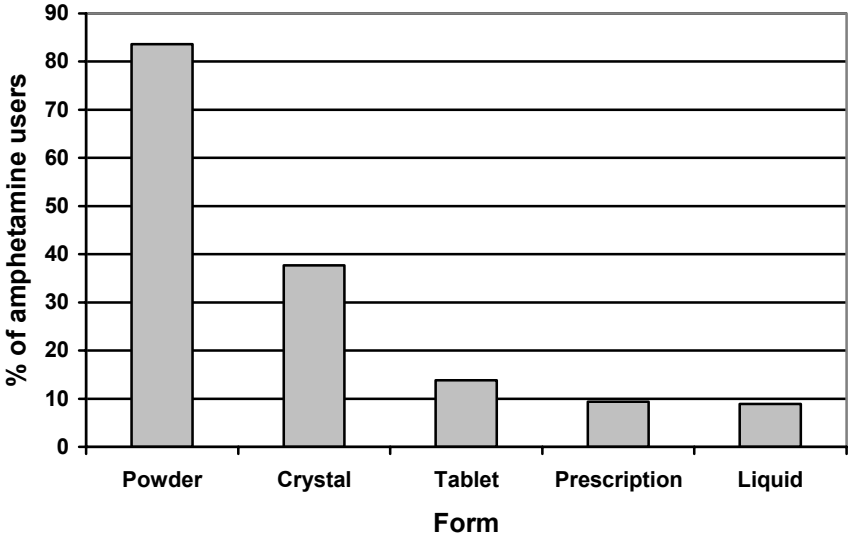


Figure 5: Form of amphetamine used by Australians aged 14 and over who had used amphetamine in the past year, 2001

3.1.2 Student population

Australia's second national survey collecting information on illicit drug use from school students was undertaken in 1999. A third survey has since been undertaken although results have not yet been published. The 1999 survey collected sampled 26,489 secondary school students aged 12 – 17 years from across Australia. Use of 'amphetamines' in this survey was recorded as use of "Amphetamines or speed, uppers, MDA, Ritalin, 'Dex', Dexamphetamine, ox-blood, other than for medical reasons".

Among school students in Australia, 'amphetamines' are the third most commonly used illicit drug after cannabis and inhalants (White, 2001; Figure 6). The use of amphetamines among school students occurs in about 7% of students (lifetime use). Although use varies considerably with age, exposure to methamphetamine among students is not much lower than that seen in the general population. Essentially exposure to amphetamine ranges from around 3% of students aged 12 years to 10-12% of those aged 16-17 years. Recent use of amphetamines (past year) had occurred among 5.5% of students, and again is highest among 16-17 year olds (8.2% and 9.6% respectively) (Figure 7).

Exposure to amphetamine was only slightly higher among boys than girls, with 7.7% of boys and 6.5% of girls having ever used the drug. This is roughly equivalent to a ratio of approximately six males to every five females. Similar ratios of males to females can be seen for past year use (6.0% male vs. 5.1% female). However, if past month use is considered there is a larger difference between the number of males and females using the drug (3.4 vs. 2.2%): this ratio of three males to every two females being the same as that seen among the adult population.

Similar to use patterns among the general population described in the previous section, use of the drug in the previous week (a proxy for more regular use of the drug) occurs among only 1-2% of students. It is important to note that early onset of use, alongside other factors, is a risk factor for development of drug dependence in later life (Glantz & Pickens, 1992).

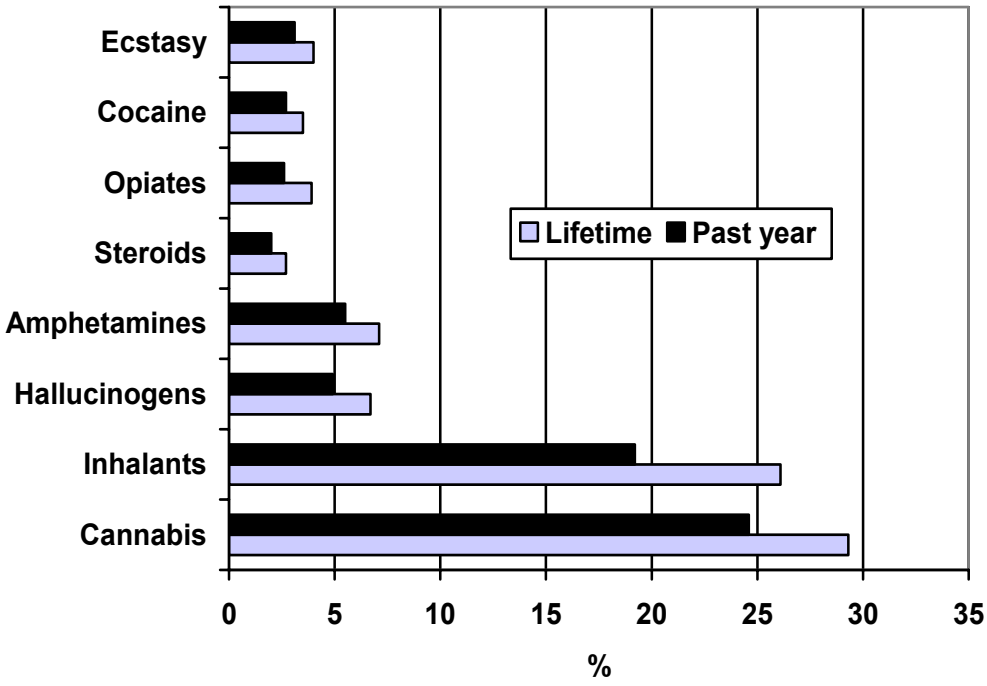


Figure 6: Lifetime and past year prevalence of illicit drug use among school students aged 12-17 years in Australia, 1999.

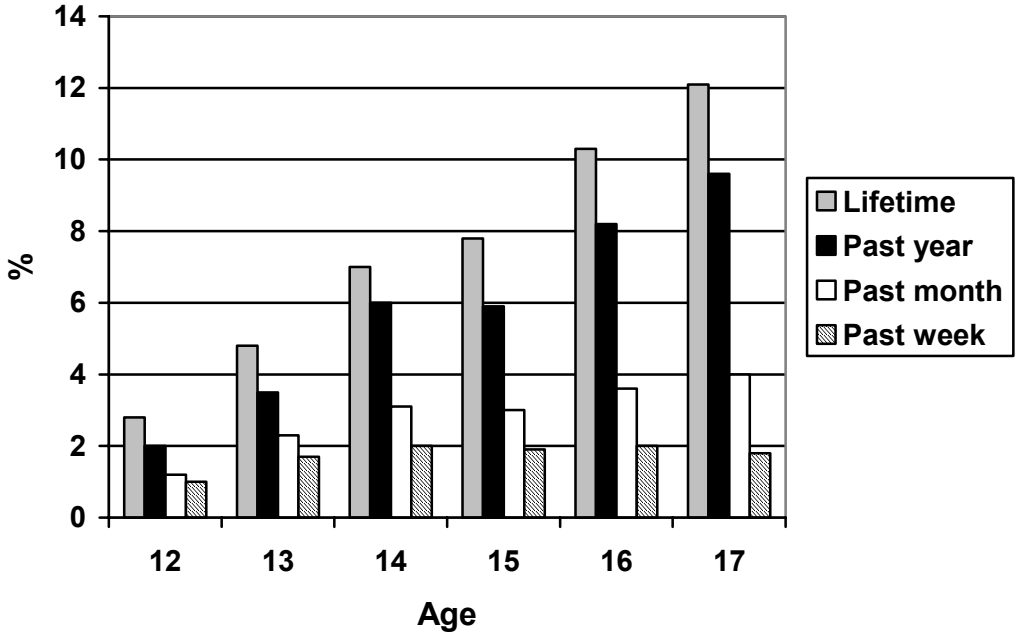


Figure 7: Past year prevalence of amphetamine use among school students aged 12-17 years in Australia by age, 1999

3.1.3 Injecting use

The extent of methamphetamine injection among injecting drug users in Australia can be seen in Table 1. Overall, 37% of users surveyed as part of the 2001 Australian Needle and Syringe Program (NSP) Survey had injected methamphetamine on their last injection occasion (McDonald, Zhou & Breen, 2002). This is a substantial proportion relative to previous years (18-26%) and in part reflects primary heroin injectors switching over to methamphetamine injection during the 2001 heroin shortage. This interpretation of the data is supported by the Illicit Drug Reporting System's survey of injecting drug users which found that methamphetamine was the drug of choice among 25% of IDU in 2001 and 21% in 2002 (see section on 'Market indicators from the IDRS' in this report). There is currently no estimate of the number of methamphetamine injectors in Australia.

There are vast inter-jurisdictional differences in methamphetamine injection, with the highest proportions seen in Queensland, South Australia and Western Australia. It is not possible to say whether this means there are 'more' methamphetamine injectors in these states, as it is not known how many injecting drug users exist within each state.

Table 1: Percentage of injecting drug users who report methamphetamine as their last drug injected, 2000-2001.

	Methamphetamine last injection (%)	
	2000	2001
Australian Capital Territory	6	41
New South Wales	12	17
Northern Territory	27	36
Queensland	38	51
South Australia	30	52
Tasmania	22	21
Victoria	6	25
Western Australia	23	56
Total	**21**	**37**

Note. Data represent findings from the Australian Needle and Syringe Program Survey, NCHECR.

3.2 Service utilization, morbidity and mortality

3.2.1 Treatment demand

Data presented here on treatment demand include the national census of 'Clients of Treatment Service Agencies' (COTSA) which has been undertaken in 1990, 1992, 1995 and 2001 (Shand & Mattick, in press). This data provides a 'snapshot' of people seeking treatment from government and non-government services on the day of the census, although importantly excludes people without face-to-face service provision on that day including those receiving methadone doses. The second data source, the Alcohol and Other Drug Treatment Services National Minimum Data Set (AODTS–NMDS), collects data on a routine basis on clients attending government and non-government treatment agencies (*Alcohol and Other Drug Treatment Services National Minimum Data Set (AODTS–NMDS): Online Data Cubes*). These data DO NOT include treatment data from Queensland and also exclude methadone maintenance treatment, half-way houses, sobering up shelters, and correctional institutions. Refer to the appendix of this report for more information on these data sources.

Data on the overall treatment demand for 'amphetamines' relative to other drugs can be seen in Figures 8 and 9. Both COTSA and NMDS data show similar levels of treatment demand for amphetamine. According to COTSA 8% of clients presented for amphetamine problems on the day of the census in 2001, while the NMDS showed that amphetamine represents the principal drug of concern for 9% of all clients that received treatment during 2000-01. There has been a steady increase in the proportion of amphetamine-related treatment admissions over the period the COTSA Census has been undertaken from about 4% in the early 1990s to the current 8.3%.

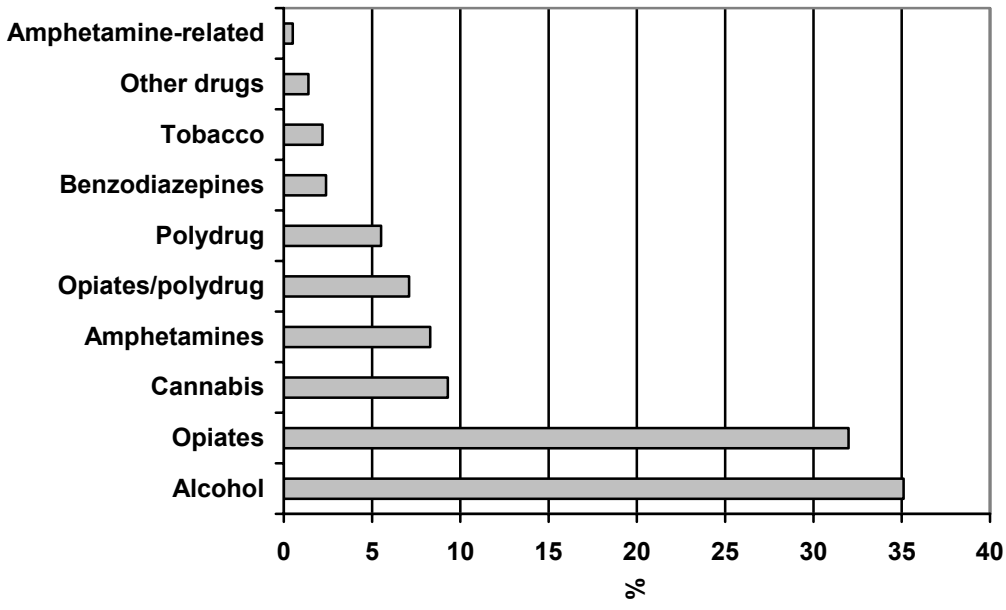


Figure 8: Percentage of treatment clients by drug type, May 2001 (COTSA)

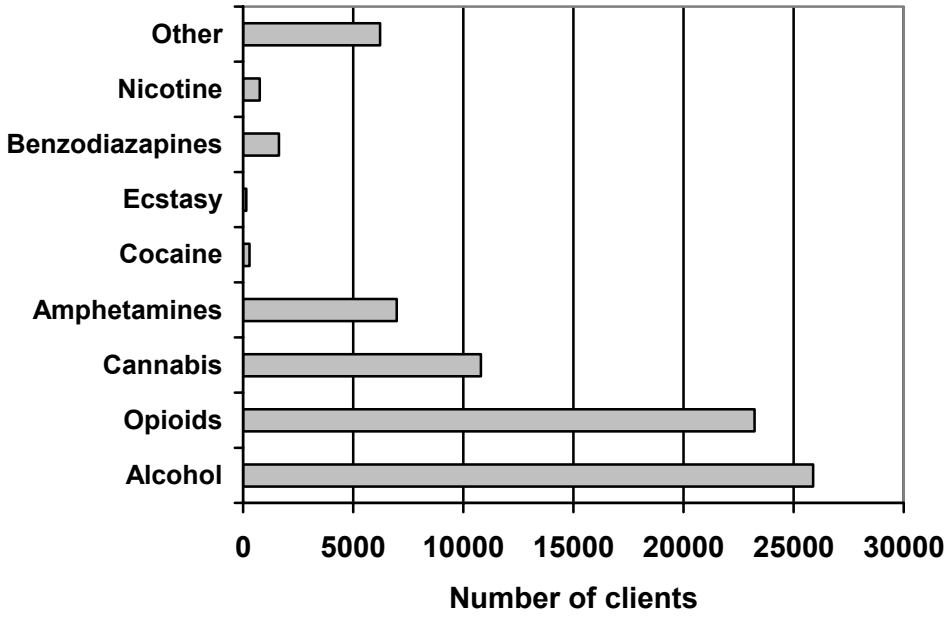


Figure 9: Number of treatment clients by drug type, 2000-01 (NMDS)

Most people seeking treatment for amphetamine-related problems are aged between 20-29 years (56%) (Figure 10). The overall age distribution is similar to that seen among amphetamine users in the general population (see section on extent of use among the general population), although slightly skewed toward older users as would be expected due to the natural lag between up-take of drug use and treatment seeking. Gender breakdown among amphetamine treatment clients is also very similar to that among amphetamine users in the general population, being a ratio of 64% male to 36% female.

Self-referral is the most common mechanism for 'referral' into treatment services among clients admitted to treatment during 2000-01. Around one-third (35%) of amphetamine clients self-referred for treatment, which is a similar to the overall self referral rate among all drug clients (34%). Other sources of referral are shown in Figure 11.

Injecting drug use is by far the most common route of administration among amphetamine treatment admissions, with three-quarters (75.3%) of clients reporting that this was the way they took the drug. Much smaller proportions said they smoked (3.3%), swallowed (9.5%) or snorted (3.8%) the drug.

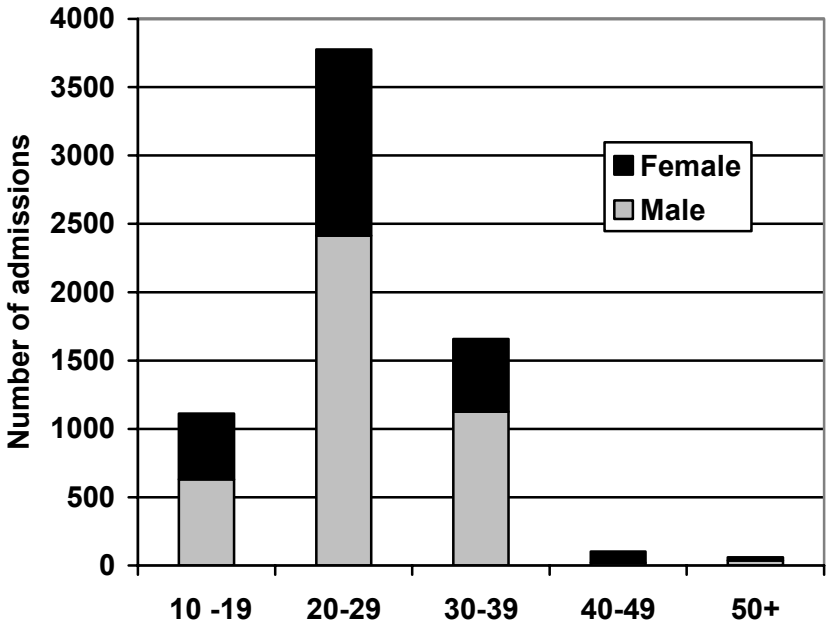


Figure 10: Age and gender of amphetamine treatment clients, 2000-01 (NMDS)

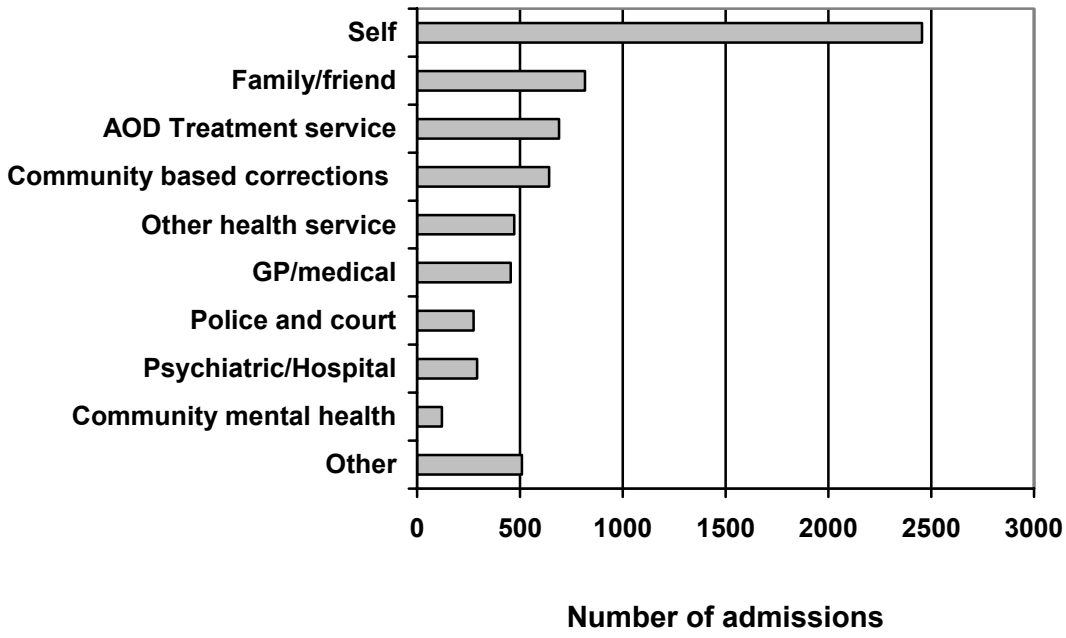


Figure 11: Source of referral for amphetamine-related treatment clients, 2000-01 (NMDS)

3.2.2 Hospital admissions

The following data are taken from the National Hospital Morbidity Datacubes, which are publicly available through the Australian Institute of Health Welfare's website (see Table 13 for details). These data represent summary records for patient admissions at separation from public and private hospitals in Australia (including public acute, public psychiatric hospitals, private acute and psychiatric hospitals, and private free-standing day hospital facilities). The ***principal diagnosis*** is defined as the diagnosis established to be chiefly responsible for the patient's episode of care in hospital and the term 'separations' refers to the episode of care. Further details on data collection methods are provided in the appendix of this report.

In the year 2000-01 there were 2,384 hospital separations in Australia for mental and behavioural disorders due to stimulant use (Figure 12, see appendix for explanation of hospital morbidity data; *National Hospital Morbidity Database: Online Data Cubes*). This represents 6% of all separations for mental and behavioural disorders due to psychoactive stimulant use. By way of comparison, opioids accounted for 16% and cannabis accounted for 5%. Average duration of hospital care for stimulant use was approximately 5 days. In terms of the duration of care required to treat problems, stimulants accounted for 12,194 patient days of care in 2000-01, similar to the number of care days for cannabis (14,060), and just under half that for opioids (29,464).

Most stimulant admissions were for a psychotic disorder (i.e., stimulant-induced, 52%) followed by dependence (23%) and harmful use (13%) (Figure 13). Of those with psychosis, most were treated in specialized psychiatric facilities (84%). Care of dependence was more likely to occur outside of psychiatric hospitals, with 70% of dependence separations being from a general hospital facility.

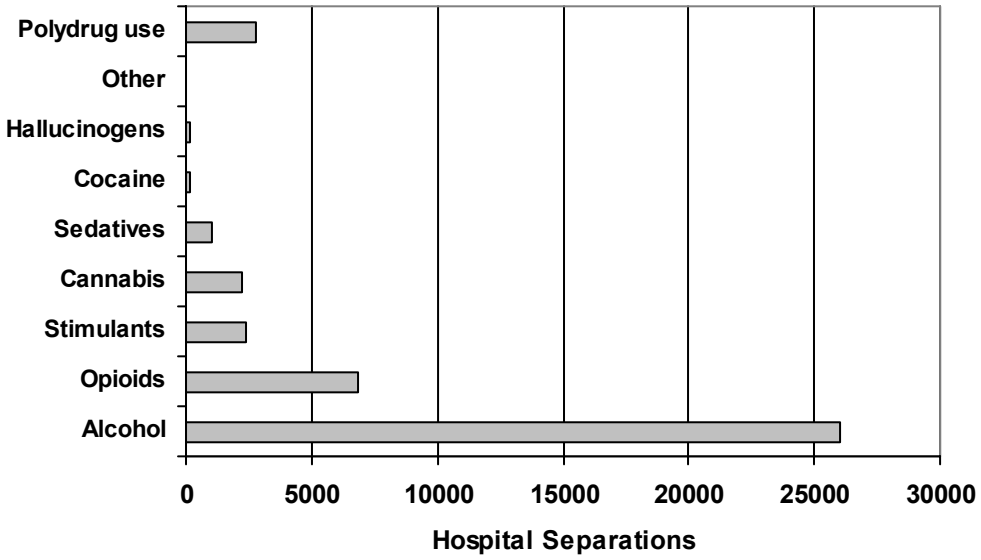


Figure 12: Australian hospital separations for mental and behavioural disorders due to psychoactive substance use by drug type, 2000-01

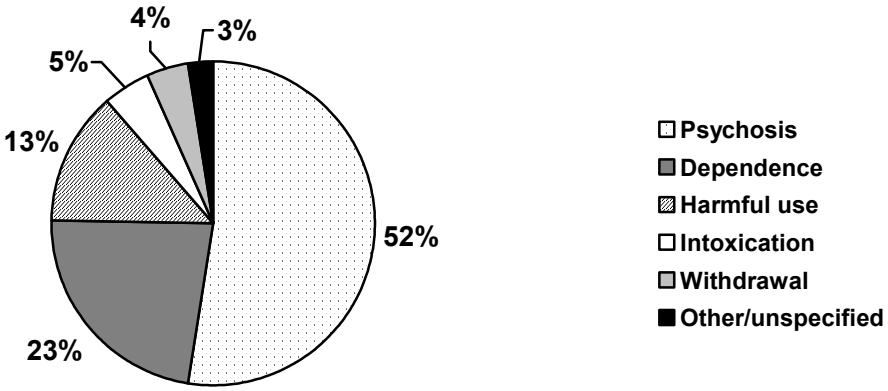


Figure 13: Mental and behavioural disorders due to use of stimulants including caffeine in 2000-01

The age distribution for hospital separations is similar to that for drug treatment clients, and slightly older than for users among the general population. The majority of cases were still aged between 20-30 years (Figure 14). Similar to the gender breakdown among the general population and the treatment population, 67% of hospital separations due to stimulant use were male.

The number of stimulant separations has increased over the past three years (data prior to this were not coded to ICD-10-AM) (Table 2). In particular, there has been a dramatic rise in the number of psychotic disorders due to stimulant use from 200 in 1998-99, to 1,028 in 1999-00 and a further but smaller increase to 1,252 in 2000-01. While this may be associated with the change in diagnostic coding from ICD-9 to ICD-10 in 1997-98, such an increase was not seen for disorders related to other drug classes.

For more information on hospital morbidity data refer to the appendix at the end of this report.

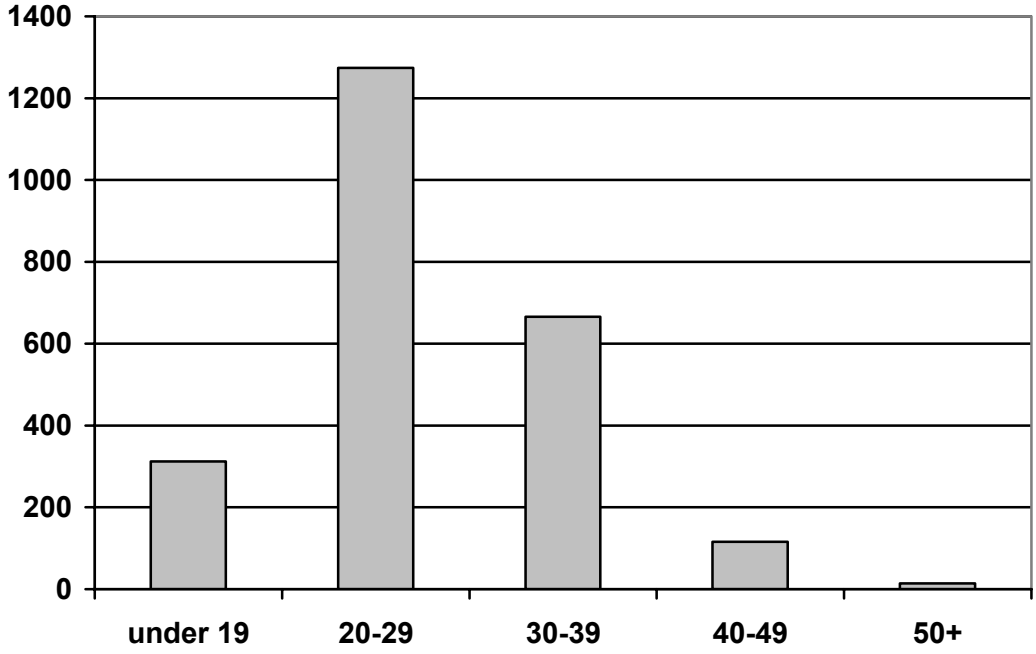


Figure 14: Number of separations for mental and behavioural disorders due to stimulants by age, 2000-01

Table 2: Mental and behavioural disorders by drug type, 1998-99 to 2000-01

	1998-99	1999-00	2000-01
Opioids	7018	7511	6841
Cannabis	1608	2048	2193
Stimulants	938	2044	2384
Sedatives	924	1002	1050
Cocaine	146	92	164
Hallucinogens	116	159	159

Note. Data represent drug-related separations. Other = tobacco and solvents. Data exclude polydrug use and 'other' forms of drug use not specified under the ICD-10-AM codes.

3.2.3 Mortality

Ridolfo and Stevenson (2001) report on data from the National Mortality Database pertaining to deaths attributed to illicit drug use including those caused by 'dependence and abuse' for amphetamines, and poisoning due to psychostimulants. These causes of death are classified according to the World Health Organization's 9th revision of the International Classification of Diseases (ICD-9). There are extremely few deaths directly attributable to dependence or abuse of amphetamines. In 1998 there were three deaths: 2 males and 1 female. Similarly, there were only three deaths recorded due to poisoning on psychostimulant drugs (all male), this possibly including cocaine and ecstasy type drugs also. Comparison with the number of deaths due to other causes related to illicit use for same year (4377 deaths) suggests that death due to the direct toxic effects of amphetamine use, abuse, or dependence appears to be extremely rare. However, there is limited understanding of the aetiological role of methamphetamine use in mortality, and consequently current mortality data may under-represent cases where methamphetamine in-directly contributes to death (e.g., premature death related to cerebral vascular pathology).

3.3 Supply-side

3.3.1 Arrest data

Arrest data presented here are taken from the Australian Illicit Drug Report 2001-02. These data pertain to amphetamine-type stimulants including ecstasy-type drugs (phenethylamines). The arrest data for each state includes Australian Federal Police data. Arrest data for South Australia in 2001-02 is not comparable to previous years. Further explanation of the data can be found in the Australian Illicit Drug Report 2001-02.

The number of arrests related to amphetamine-type stimulants (ATS) in Australia[i] has increased over the last ten years from 3705 arrests in 1993 to 8063 arrests in 2001-02 (Table 3; ABCI, 1997, 1997; ACC, 2003; AIHW, 2003). The number of ATS-related arrests increased notably around 1998. This increase occurred in most jurisdictions and has continued until the present time, with the exception of a recent decrease in New South Wales and South Australia (Figure 15). Note that Tasmania, the Northern Territory and the Australian Capital Territory are excluded from this figure due to the low number of ATS-related arrests in these jurisdictions. The increase in ATS-related arrests expressed as a proportion of all arrests related to illicit drug use is less pronounced, increasing from 4-9% over the period 1993-97 to 6-11% for 1998-2002.

Table 3: ATS-related arrests in Australia, 1993 to 2001-02

	1993	1994	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02
Number	3705	4593	4214	3907	4766	6584	8083	8846	8063
% of all arrests	9	6	4	5	6	8	10	11	11

Sources: ABCI (1997); ACC (2003)

The number of arrests for ATS in 2001-02 varied by jurisdiction, as did the relative proportion of consumer and provider arrests (Table 4). The highest number of ATS-related arrests was recorded in New South Wales and Queensland, followed by Victoria and Western Australia.

Only twenty to thirty percent of arrests for ATS were for providing the drug as opposed to consuming it. Within jurisdictions, the proportion of provider arrests varied from none in the Northern Territory to almost half in South Australia. Males made up the majority of consumer and provider arrests, with most jurisdictions recording a figure of approximately 80%.

[i] Amphetamine-type stimulants (ATS) include phenethylamines such as 3,4-methylenedioxymethamphetamine (MDMA or ecstasy) as well as amphetamine sulfate and methamphetamine.

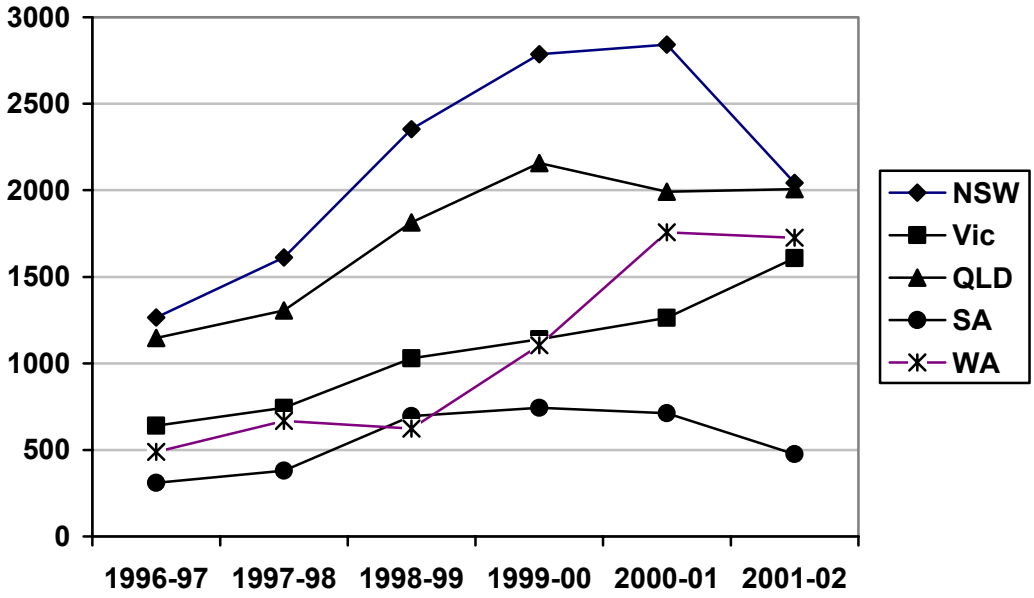


Figure 15: Number of ATS related arrests by jurisdiction, 1996-97 to 2001-02

Table 4: Characteristics of ATS-related arrests by jurisdiction, 2001-02

	Number of ATS arrests	Proportion of all illicit drug arrests (%)	Provider arrests (%)	Males (%)
NSW	2043	12	21	80
Vic	1608	14	34	83
QLD	2007	9	25	80
SA	475	5	46	83
WA	1725	18	29	81
Tas	89	5	20	79
NT	56	6	0	62
ACT	60	16	20	82
Australia	8063	11	27	81

Source: ACC (2003)

3.3.2 Seizure data

Seizure data presented here are taken from the Australian Illicit Drug Report 2001-02. These data pertain to amphetamine-type stimulants including ecstasy-type drugs (phenethylamines). Data represent only those seizures for which drug weight was recorded, and may include double counting of seizures that occurred through joint operations between the Australian Federal Police and state or territory police services. Data from some jurisdictions may be based on suspected drug type and estimated seizure quantities, and may not have been confirmed by forensic analysis. Further explanation of the data can be found in the Australian Illicit Drug Report 2001-02.

Seizures of ATS made by either the Australian Federal Police (AFP) or the respective State/Territory Police are shown in Table 5. In 2001-02 there were 6471 seizures amounting to 1837.9 kg of ATS seized. This represents about 13% of all seizures in terms of number and weight. In comparison, heroin accounts for about 3% of seizures by number and weight, while cannabis accounts for 70% of seizures by weight and 80% by number.

Table 5: Number and weight of AFP and state police ATS seizures by jurisdiction, 2001-02

	Number of Seizures			Weight of seizures (kg)		
	AFP	State Police	Total	AFP	State Police	Total
New South Wales	210	2176	2386	173.3	505.2	678.5
Victoria	104	364	468	561.6	58.4	620.0
Queensland	36	1615	1651	471.1	9.4	480.5
South Australia	11	151	162	0.1	5.2	5.3
Western Australia	39	1634	1673	24.3	24.6	48.9
Tasmania	-	25	25	-	1.5	1.5
Northern Territory	3	45	48	0.003	0.7	0.7
Australian Capital Territory	-	58	58	-	2.5	2.5
Total	403	6068	6471	1230.4	607.5	1837.9

Source: ACC (2003)

Over the last five years, the number of ATS seizures by state/territory police or the Australian Federal Police[i] showed an overall upward trend (Figure 16)[ii]. More pronounced was the increase in the weight of ATS seized in recent years, which increased more than tenfold from 155.7 kg in 1996-97 to 1837.9 kg in 2001-02. This is a much larger increase than for most other drug types, with the exception of the similar increase seen in the weight of cocaine seized domestically. By comparison, there has been a two-fold increase in domestic seizures of heroin over the same time period, from 236.5 kg in 1996-97 to 483.7 kg in 2001-02.

Methamphetamine made up 97% of all methamphetamine and amphetamine seizures analysed. The proportion of seizures analysed that have been amphetamine has decreased over the last five years, while the proportion of analysed seizures that have been methamphetamine have increased (Table 6).

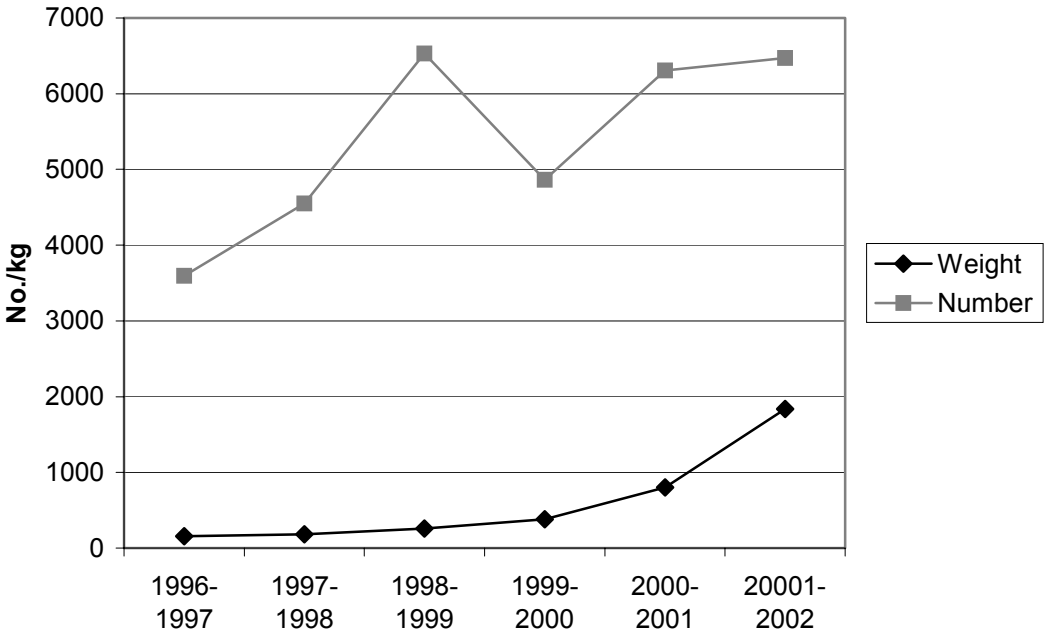


Figure 16: Number and weight of ATS seizures by AFP and State/Territory police, 1996-97 to 2001-02

[i] Some seizures may be counted twice due to joint operations between the Australian Federal Police and State and Territory Police (ABCI, 2000; 2001; 2002; ACC, 2003). Data presented here may be updated subsequent to this publication based on further chemical analysis, information or because some seizures may be subject to ongoing investigation. Data presented here are valid as of the date of the cited source. The seizure data from the AFP may or may not include seizures detected by the Australian Customs Service (ABCI, 2000). Customs seizure data is presented separately below (Figure 19).

[ii] Note that figures prior to 1998-99 do not include South Australian Police seizure data.

Table 6: Number of methamphetamine and amphetamine seizures analysed by AFP and state/territory police, 1997-98 to 2001-02

	1997-98	1998-99	1999-00	2000-01	2001-02
amphetamine	505	405	200	250	96
methamphetamine	2420	3163	3870	3242	3063

Source: ABCI (1997); AIHW (2003); ACC (2003)

3.3.3 Purity of domestic seizures

Table 7 shows methamphetamine and amphetamine purity data for seizures made by the Australian Federal Police and state or territory police during 2001-2002. Note that purity figures reflect only those seizures which undergo forensic analysis during the reporting period, and that purity figures for New South Wales state level seizures are not included. Furthermore, the different forms of methamphetamine (ice, base or powder), which vary in purity, are not distinguished.

The average purity level of methamphetamine analysed in 2000-01 was 22%, higher than the average purity of amphetamine seizures analysed during the same time period (14%). The median purity of methamphetamine seizures varied between 5% and 25% depending on the jurisdiction but was relatively high in Western Australia (23%), Queensland (19%) and Tasmania (25%). The purity of both amphetamine and methamphetamine increased from 1997-98 to 2000-01 (Figure 17; Topp, Kaye, Bruno, Longo, Williams, O'Reilly, Fry, Rose and Darke, 2002).

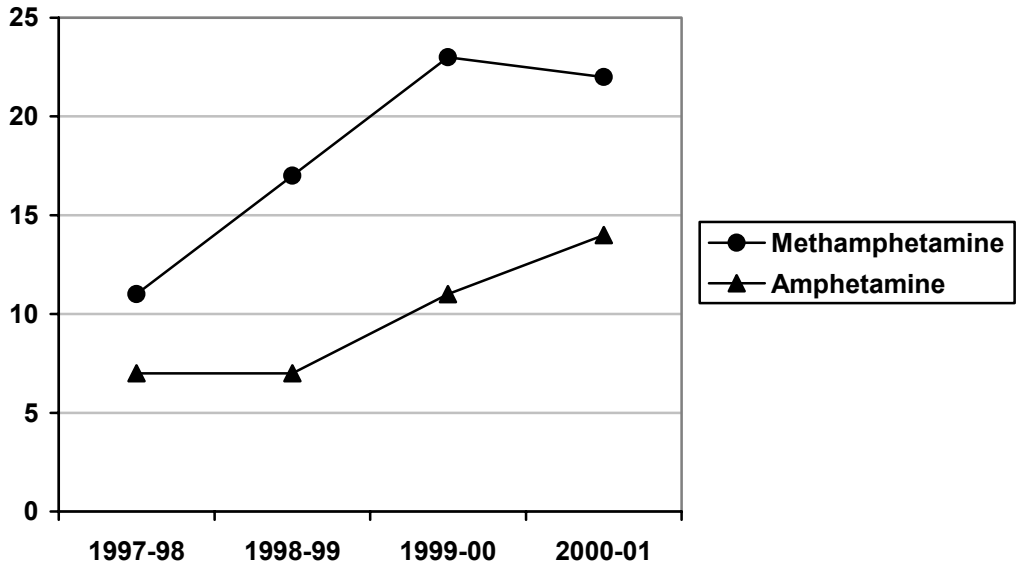


Figure 17: Average purity of amphetamine and methamphetamine seizures, 1997-98 to 2000-01

Table 7: Purity of amphetamine and methamphetamine seizures recorded by state police and the AFP in 2001-02

		Amphetamine				Methamphetamine			
		Cases	Median	Min	Max	Cases	Median	Min	Max
		No.	%	%	%	No.	%	%	%
NSW									
	State	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
	AFP	2	9.0	2.7	15.2	61	10.5	1.1	81.8
Vic									
	State	7	13.0	4.0	17.0	746	15.0	-	99.0
	AFP	1	1.6	1.6	1.6	22	19.4	0.8	81.9
QLD									
	State	14	0.9	0.1	14.3	987	19.7	0.1	80.0
	AFP	-	-	-	-	10	2.3	1.8	81.0
SA									
	State	57	0.3	-	18.4	551	14.6	-	78.5
	AFP	-	-	-	-	1	2.0	2.0	2.0
WA									
	State	13	10.0	9.1	55.0	499	23.0	-	86.0
	AFP	1	15.9	15.9	15.9	1	80.0	80.0	80.0
Tas									
	State	-	-	-	-	48	24.8	0.1	70.6
	AFP	-	-	-	-	-	-	-	-
NT									
	Territory	-	-	-	-	37	5.5	0.5	94.5
	AFP	-	-	-	-	4	80.3	78.0	82.4
ACT									
	Territory	1	1.7	1.7	1.7	61	7.1	0.6	79.0
	AFP	-	-	-	-	35	80.3	1.8	82.8

Source: (ACC, 2003)

Note. '-' means zero or rounded to zero, or not applicable in the case of purity figures where there where zero seizures.

3.3.4 Clandestine laboratory data

Detections

According to the Australian Illicit Drug Report 2001-02, the number of clandestine laboratories manufacturing ATS detected in Australia has steadily increased over the past five years from 95 in 1997-98 to 240 in 2001-02 (Figure 18). Note that data for the Australian Capital Territory, the Northern Territory and Tasmania were omitted from Figure 18 due to the small number of clandestine laboratories detected in these jurisdictions (3 in 1997-98; 1 in 1998-99; 2 in 1999-2000 and 2000-01; and 4 in 2001-02). The largest number of clandestine laboratories has been found in Queensland. Between 2000-01 and 2001-02, the number of laboratories detected in Queensland almost doubled from 77 to 138[17].

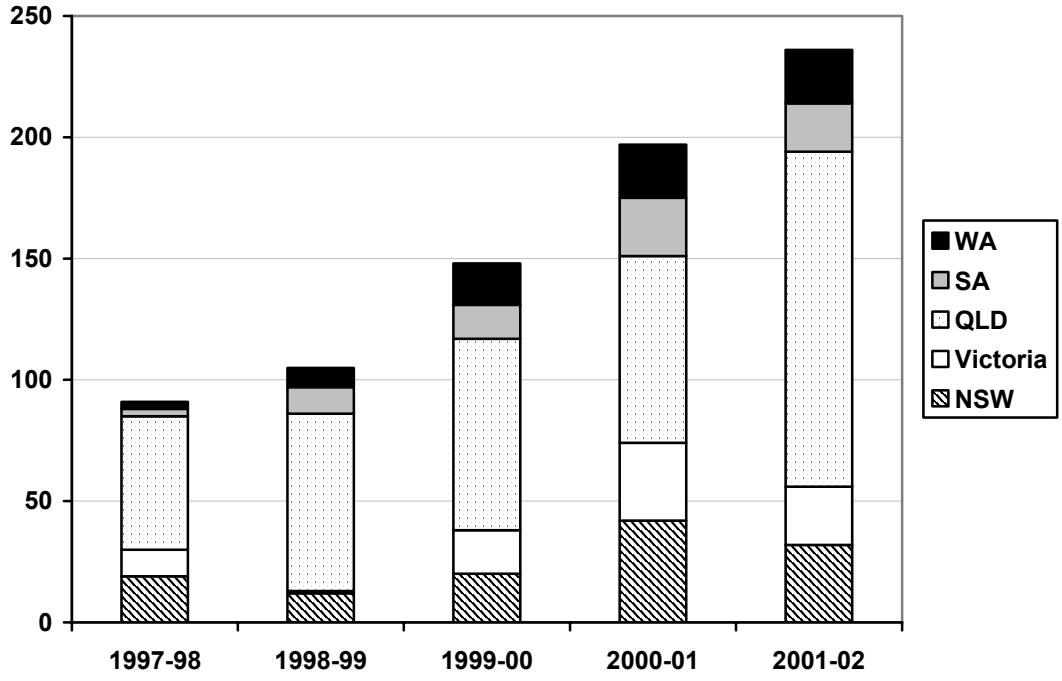


Figure 18: Number of clandestine laboratories found in Australia, 1997-98 to 2001-02

Manufacture

The Australian Illicit Drug Report 2001-02 noted a trend toward smaller, more portable clandestine laboratories. Outlaw Motorcycle Gangs are still thought to be involved, but more likely have control over larger laboratories. They are likely to contract 'cooks' who manufacture the ATS. Most of the precursors necessary for production are sourced within Australia and consist mainly of medication containing pseudoephedrine. Pseudoephedrine-based production using the hypophosphorous acid method remained the most common method of ATS manufacture in 2001-02. Other methods include the hydriodic acid/red phosphorus method, the Phenyl-2-Propanone method and the dangerous 'Nazi' method.

3.3.5 Importation and border detection

The Australian Customs Service maintains data on illicit drugs seized at the border of Australia. These data are published in the Australian Illicit Drug Report. Weights presented here may be net, gross or estimated and may be updated subsequent to this publication based on further chemical analysis, further information or because some seizures may be subject to ongoing investigation. Data presented here are valid as of March 2003.

Figures from the Australian Customs Service showed a marked increase in the amount of ATS[i] and crystalline methamphetamine ('Ice') seized at the Australian border between 2000 and 2002. By way of comparison, in 1999-2000, much more heroin (268.6 kg) than ATS/Ice (21.7 kg) was seized by customs, whereas in 2001-2002, similar amounts of ATS/Ice (428.2 kg) and heroin (419.9 kg) were seized. It should be noted that much of the increase in ATS/Ice seized (Figure 19) can be accounted for by two very large seizures made in 2000 and 2001. The number of ATS and Ice seizures combined went from 60 in 1999-2000 to 203 in 2001-02 (Australian Customs Service, 2001, 2003).

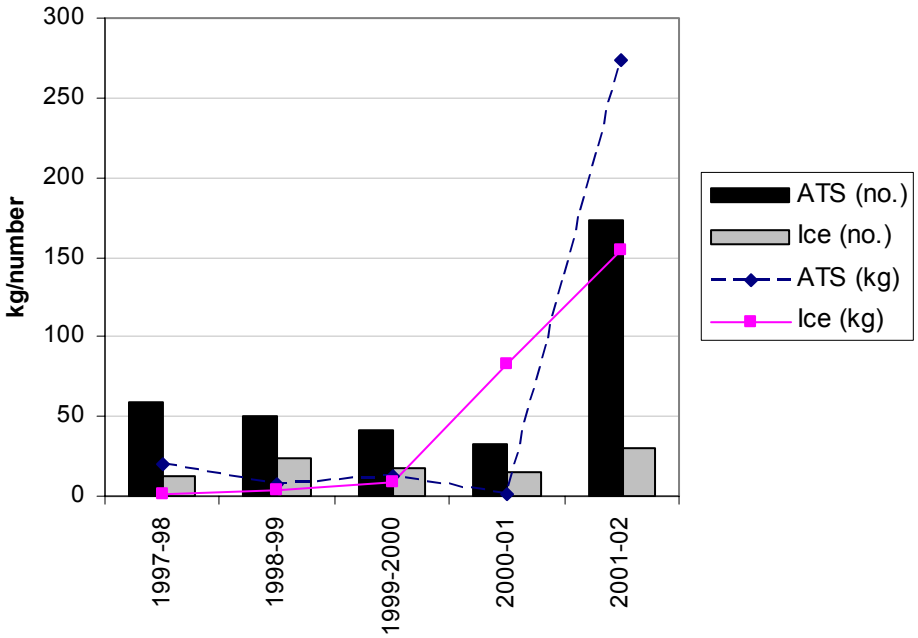


Figure 19: Australian Customs Service ATS and Ice seizures, 1997-98 to 2001-02

[i] Amphetamine Type Substances (ATS) here include amphetamines and ethylamphetamines in liquid, capsule, paste, powder or tablet form. ATS exclude ecstasy and crystalline methamphetamine, which are reported separately (ACS, 2003).

3.3.6 Drug use among offenders

Drug use monitoring in Australia (DUMA)

Drug Use Monitoring in Australia (DUMA) is a project run jointly by the Australian Institute of Criminology, state police services and local researchers (Makkai & McGregor, 2003). DUMA measures illicit drug use among individuals recently detained by police through urinalysis and interview. It is presently carried out in seven locations around Australia[i].

In 2002 30% of detainees tested positive for amphetamines[ii], with a greater proportion of females (39%) than males (28%) testing positive. Table 8 shows that the proportions of detainees testing positive to amphetamines varied by location, as did the proportion of detainees who reported use of amphetamines in the last 30 days[iii]. Overall, use of amphetamines among male detainees was substantially lower in Sydney (Bankstown and Parramatta) in comparison with other cities.

Table 8: Percentage of male and female detainees testing positive to amphetamines in the last 30 days by location, 2002 (DUMA)

	Males		Females	
	N	% testing +ve	N	% testing +ve
Adelaide	403	34.9	80	50.0
Bankstown	312	11.5	55	15.4
Brisbane	588	26.2	86	38.8
East Perth	631	38.4	143	45.9
Elizabeth	410	30.1	80	35.0
Parramatta	265	18.1	48	25.7
Southport	320	27.4	57	38.9

[i] Since the project began in 1999, it has been run in Southport (QLD), East Perth (WA), Bankstown (NSW) and Parramatta (NSW). In 2002 three more sites were added: Brisbane (QLD), Elizabeth (SA) and Adelaide (SA).

[ii] Note that the urinalysis does not distinguish between legal and illegal use of amphetamine, although 92% of positive amphetamine screens were confirmed to have taken methamphetamine, which indicates illegal drug use.

[iii] Eighty-one per cent of detainees testing positive for methamphetamine also self-reported that they had used methamphetamine in the previous 30 days, and 3.6% of those with a negative result on the methamphetamine urinalysis reported using the drug in the past 48 hours. The concordance between self-reported use and positive urinalysis was higher when arrestee asked about use in last 30 days (81%) than in last 48 hours (57%) (Makkai & McGregor, 2003).

Data on age of amphetamine positive detainees were derived from Weierter and Lynch's analysis of DUMA data obtained from four sites (Southport, East Perth, Bankstown and Parramatta) over the years 1999, 2000 and 2001 (Weierter & Lynch, 2002). This analysis was based on a total of 5440 detainees, of whom 80% where male. Amphetamine use was concentrated among the younger detainees, with 70% of the detainees testing positive for amphetamines being under 30 years of age, while 34% were aged under 23. In comparison, about 66% of detainees testing positive to opiates were under 30 and 30% under 23. Cannabis use was more concentrated among the younger detainees than both amphetamine use and heroin use.

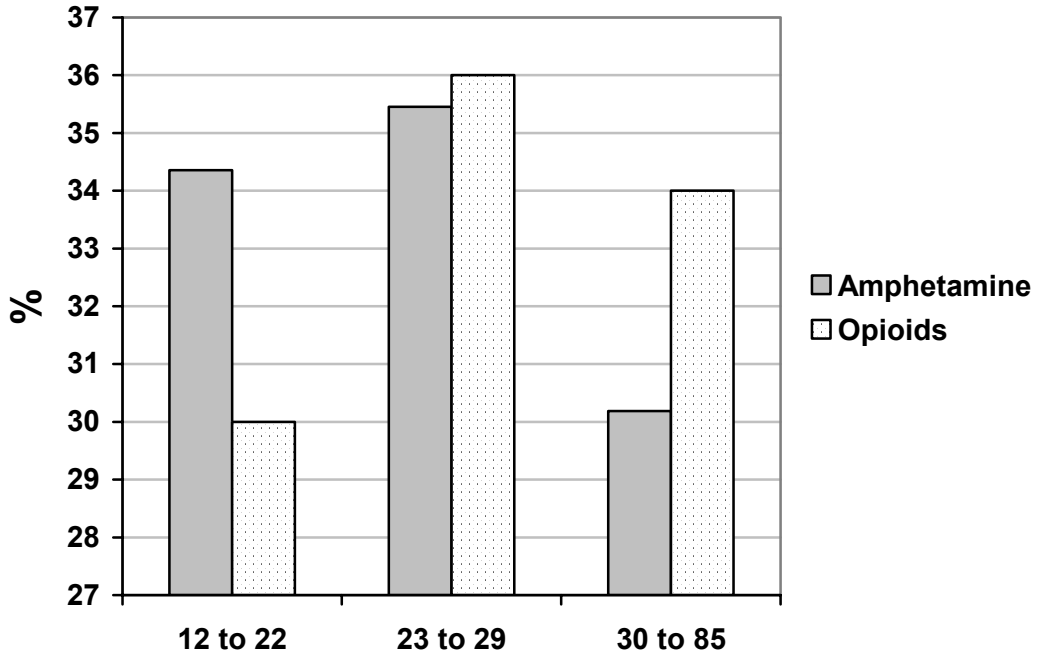


Figure 20: Proportion of detainees testing positive to amphetamines vs. opioids by age group for Southport, East Perth, Bankstown and Parramatta, 1999-2001 (DUMA)

Weierter and Lynch conduct further analysis of the above DUMA data to show the relationship between self-reported drug dependence and crime. In their analysis, they consider Southport separately from the other three sites (East Perth, Bankstown and Parramatta). They found that most amphetamine dependent arrestees where arrested for miscellaneous offences (46% in Southport and 45% in other sites). Property crime was the next most common offence for which amphetamine dependent arrestees where charged, (31% in Southport and 30% in other sites) followed by drug offences (13% in Southport and 9% in other sites) and violent offences (14% in Southport and 11% in Southport). This pattern of criminal activity is not dissimilar to that seen for dependence on other drug types, as shown by the data from East Perth, Bankstown and Parramatta presented in Figure 21[i].

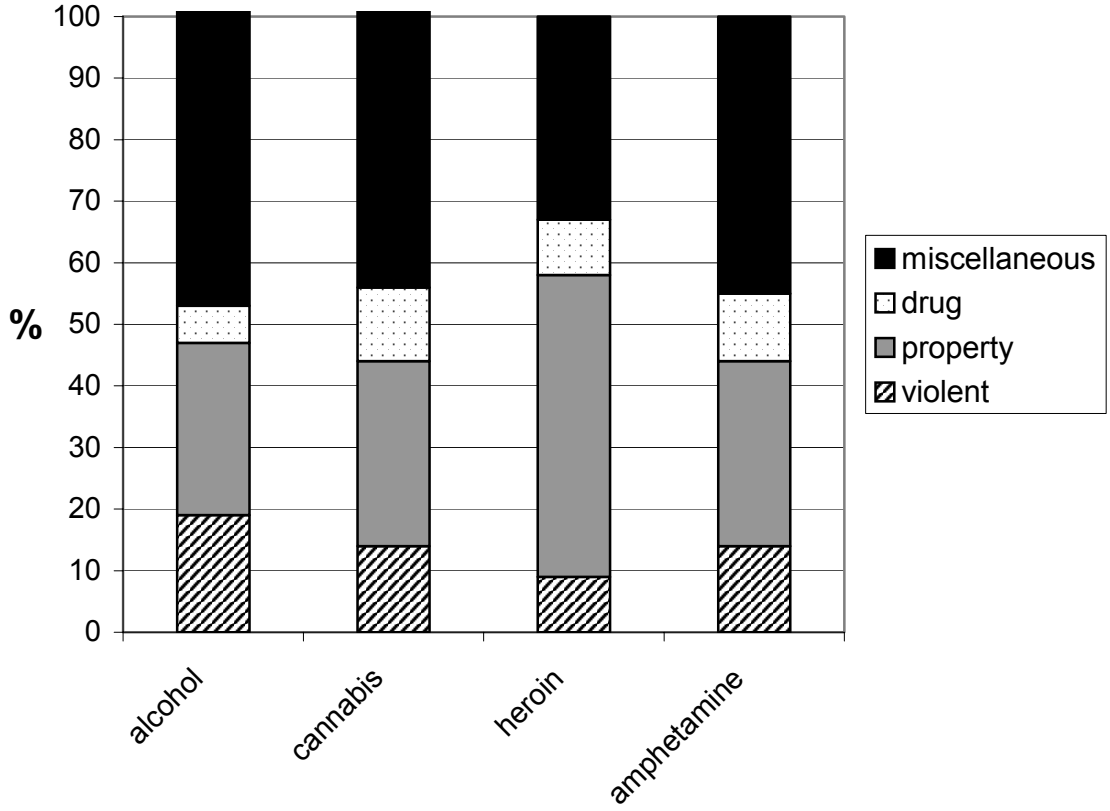


Figure 21: Type of crime committed by drug-dependent detainees in East Perth, Bankstown and Parramatta, 1999-2001 (DUMA)

[i] Weierter and Lynch (2002) collated data for Southport separately from the data pertaining to East Perth, Bankstown and Parramatta that is presented in Figure 21. Data from Southport show a similar pattern of criminal activity among drug dependent arrestees (see Weierter and Lynch, 2002).

Drug Use Careers of Offenders (DUCO)

The Drug Use Careers of Offenders (DUCO) project administers a questionnaire on drug use and criminal history to a random sample of the prison population (Australian Institute of Criminology, 2002). So far only data on a sample of male detainees are available in preliminary form. The data presented below include prison samples from the Northern Territory, Queensland, Tasmania and Western Australia only. Consequently these data are likely to show higher levels of amphetamine use than the national average.

Forty-two per cent of prisoners had used amphetamine in the six months before arrest, and 17% reported being dependent on amphetamine. The proportions who had used amphetamine were smaller than those corresponding to cannabis (61%), but far more than for other drugs, while the prevalence of 'dependence' on amphetamine was similar to that for heroin. These data confirm the DUMA data reported previously, in that amphetamine use appears to be concentrated among the younger age groups (Table 9).

Table 9: Proportion of male prisoners who used illicit drugs in the six months before arrest and proportion reporting dependency, by age and type of illicit drug, 2001.

	18-24		25-39		40+		Total	
	Used	Dep.*	Used	Dep.	Used	Dep.	Used	Dep.
Cannabis	82	37	65	21	29	6	61	22
Heroin	36	22	28	19	12	9	27	18
Amphetamine	64	30	43	17	16	3	42	17
Cocaine	23	5	17	3	5	0.2	16	3
Ecstasy	36	3	24	2	5	0.2	23	2
Any illicit drug	90	61	75	47	37	16	70	44

*Note.*Data taken from a sample of prisoners from the NT, QLD, Tasmania and WA.
*Dep. Refers to self-reported drug dependence.
Source: AIHW (2003)

3.3.7 Market indicators from the IDRS

The Illicit Drug Reporting System (IDRS) monitors illicit drug markets across Australia through interviews with injecting drug users (IDU), party drug users, interviews with key informants and analysis of existing data sources (Breen, Degenhardt, Roxburgh, Bruno, Duquemin, Fetherston, Fischer, Jenkinson, Kinner, Longo & Rushforth, 2003; Topp, Breen, Kaye & Darke, 2002). The following information is based on the findings from the IDRS.

Availability

The emergence of more potent forms of methamphetamine, notably so-called 'base' methamphetamine and crystalline methamphetamine, was first detected in 1999. The detection of 'base' methamphetamine occurred in Queensland with the establishment of the IDRS, while the presence of more pure 'crystal meth' was also noted in Tasmania, South Australia and New South Wales. However, it was not clear whether the 'crystal meth' found in these states was the same as the 'base' methamphetamine noted in Queensland[3]. The availability of these more potent forms of methamphetamine continued through 2000-01[19] and are currently regarded as easy to very easy to obtain in nearly all parts of Australia[25].

There still remains some conjecture about the terminology used to describe the more potent forms of 'base' and 'ice' methamphetamine, and the actual composition of these forms. However, the 2002 IDRS undertook a photo identification of different forms identified by injecting drug users as 'ice' and 'base'. This study showed reasonable specificity between the different forms of methamphetamine classified as 'ice' and 'base' by Topp and Churchill (2002) and what users report as being 'base' and 'ice' methamphetamine[25]. This classification system is outlined at the beginning of this document

In 2002 methamphetamine powder was considered easy to obtain in all areas of Australia, with 77% of those IDU commenting on availability stating that it was 'easy' or 'very easy' to obtain. Of those IDU who commented on the availability of base, most (69%) reported that it was easy or very easy to obtain, particularly in South Australia, Tasmania and Queensland. Fifty per cent of those who commented on crystalline methamphetamine (ice) said that it was easy or very easy to obtain. However, there was some variability across states and territories. In South Australia and Queensland it was considered easy to obtain, whereas in New South Wales, Victoria and the Northern Territory it appeared more difficult to obtain. Table 10 shows the proportion of those who commented on each form of methamphetamine who stated that the drug was 'easy' or 'very easy' to obtain by jurisdiction.

Most IDU obtained methamphetamine from a friend (26%), a mobile dealer (23%) or a dealer's home (25%). Mobile dealers were a particularly common source in New South Wales (41%) and Victoria (30%). A smaller proportion obtained the drug from a street dealer (10%).

Table 10: Proportion of IDU reporting that methamphetamine is 'easy' or 'very easy' to obtain by jurisdiction and methamphetamine form, 2002

	NSW	ACT	Vic	Tas	SA	WA	NT	QLD
Powder	70	76	85	83	74	68	70	96
Base	69	77	50	92	91	46	32	84
Ice	27	50	30	42	86	53	24	67

Source: Breen et al., (2003)
Note. Data refers only to those IDU who could comment on the availability of methamphetamine forms.

Price

The price of methamphetamine varied depending on the form of the drug and the quantity being sold (Table 11). Powder methamphetamine was typically sold in gram quantities and ranged in price from $50 to $300. So-called 'base' methamphetamine was sold in 'points' (approximately one-tenth of a gram) for between $25 and $50. 'Ice' was also sold in points for between $25 and $80. As has been found previously, the lowest prices for all forms of methamphetamine were found in South Australia.

Data from undercover police operations and police informants suggest the price of one ounce of methamphetamine costs anywhere between $900 and $5500. This variation in price might be in part due to a lack of distinction between the different forms of the drug.

Table 11: Price (AUD) of methamphetamine by jurisdiction

	NSW	ACT	Vic	Tas	SA	WA	NT	QLD
1 gram powder [a]	100	300	200	75	50	250	80	200
0.1gram base [a]	50	50	35	50	25	50	50	30
0.1gram ice [a]	50	50	50	50	25	50	80	50
1 gram all forms [b]	n.a.	250-400	200	60-80	n.a.	200-250	80-400	n.a.
8 ball (3.5g) [b]	180-250	900-1100	n.a.	n.a.	300	n.a.	250-350	400-800
1 ounce (28g)[b]	900-2500	2200-5000	5000	1200-5000	n.a.	3500-5500	1100-1800	3000-4000

[a] From interviews with injecting drug users, Breen et al. (2003);
[b] From undercover operations and police informants, ACC (2003)

The price of methamphetamine has remained reasonably stable in most jurisdictions over the past few years (Table 12). Obvious exceptions to this trend were an increase in the price of 'grams' in Victoria, Queensland and possibly also in the Australian Capital Territory. It is difficult to interpret the meaning of this price increase due to the increased availability of more pure forms of methamphetamine over the same time period. Moreover, efforts to accurately identify different forms of the drug were not initiated until 2000, and even then reporting categories changed between 2000 and 2002. The price of smaller quantities of 'base' methamphetamine has generally remained at $50 per point. This probably provides a better indication of trends in the market for more potent forms of methamphetamine.

Table 12: Price (AUD) of street level methamphetamine by jurisdiction, 1997-2002 (IDRS)

Methamphetamine Form		1997	1998	1999	2000	2001	2002
Powder (one gram)	NSW	100	100	80	90	100	100
	ACT			300	180	250	300
	Vic	50	50	50	50	200	200
	Tas			-	80	70	75
	SA	50	50	50	50	50	50
	WA			200-250	200	250	250
	NT			-	80	80	80
	QLD			50	80	180	200
Base (0.1 gram)	NSW			100	50	50	50
	ACT			-	-	50	50
	Vic			-	50	50	35
	Tas			50-80	50	50	50
	SA			50-60	30	50	25
	WA			-	50	50	50
	NT			-	-	50	50
	QLD			50-60	50	50	50

Trends in use

The increase in the use of 'base' and 'ice' methamphetamine became very apparent among injecting drug users during the during 2001 heroin shortage. At this time an estimated 76% of injecting drug users surveyed by the IDRS in Australia had recently used methamphetamine – a notable increase from previous years. The increase of 2001 appeared to have stabilized in 2002. Still 73% of IDU reported recent use of methamphetamine and the presence of the more potent forms of methamphetamine was still evident. For example, one-quarter of the injecting drug users surveyed through the IDRS in Sydney had recently used crystalline methamphetamine and/or methamphetamine base, while exposure was substantially higher than this in South Australia (56%), Western Australia (74%) and Queensland (39%). This level of exposure to methamphetamine 'base' and 'ice' was similar to that seen in 2001, although markedly higher than previous years. For example, in 1999 only a handful of injectors in Sydney reported use of 'ice' (3%), and "base" methamphetamine was being reported for the first time. Even though exposure to 'base' and 'ice' were similar among injectors, 'ice' was used less frequently than either 'base' or powder methamphetamine. Powder methamphetamine was still the most common form of the drug used by injectors.

Use of 'base' and 'ice' methamphetamine has also become relatively commonplace among the dance party scene since 2001. One in five 'party-drug-users' interviewed in Sydney during 2001 had used methamphetamine 'base' recently, while one-quarter had used the crystalline form of the drug. Even though similar numbers had been exposed to both 'ice' and base, the 'base' form of the drug was used more often: most of this group used 'base' once a month compared with only having used 'ice' once in the past 6 months. Similar to use among IDU, powder methamphetamine was still by far the most common form of the drug used in the dance-party scene (Topp et al., 2002).

3.4 Other data sources

This report has detailed only those data that are publicly available at a national level. Following is a list of potential data sources that may provide additional information relevant to understanding the methamphetamine situation in Australia. This list is not intended to be comprehensive but to provide a general indication of the types of data potentially available. Examples include data sources that may be available at national, jurisdictional and/or at a local level. Public access to many of these datasets is restricted for confidentiality reasons, although access could potentially be sought for specific research purposes.

1. Emergency room data: Methamphetamine-related emergency room admissions.

2. Ambulance attendance data: Treatment of methamphetamine-related acute toxic effects and mental and behavioural disorders due to methamphetamine (i.e., psychosis).

3. HIV surveillance data: HIV risk taking among injecting methamphetamine users.

4. Needle and Syringe Program data: Trends in methamphetamine injection and proportion of methamphetamine injections.

5. Forensic toxicology data on intoxicated drivers and toxicology on driver fatalities: proportion of detected intoxicated drivers and driver fatalities where methamphetamine intoxication was indicated.

6. Toxicology screening among methadone patients: Trends in the proportion of methadone patients who screen positive for methamphetamine.

7. National Coronial Database and forensic information on drug-related deaths: Information on methamphetamine-related deaths

8. Forensic data on drug seizures: composition, purity and form of methamphetamine seizures, similar to that collected by the Victoria Forensic Science Centre.

In addition to analysis at a national level, more detailed analysis of specific data sets may reveal disparities in jurisdictional or local patterns and trends in methamphetamine use, and also reveal valuable information about the nature of methamphetamine-related incidents through additional data which is not collated at a national level (e.g., circumstances of the incident, form of the drug involved).

4 ANALYSIS OF THE METHAMPHETAMINE SITUATION

Recent changes in the methamphetamine situation

The supply of amphetamine-type stimulants in Australia has increased dramatically over the past five years, with seizures increasing tenfold from 156 kg in 1996-97 to just over 1.8 tons in 2001-02. There has been a similar increase both in terms of domestic production and importation of methamphetamine. Most methamphetamine seized in Australia currently is produced domestically; however, recent increases border seizures of crystalline methamphetamine suggests that there may be substantial competition to the domestic market from methamphetamine produced in Southeast Asia. At this point, imported methamphetamine has consisted mostly of the high purity crystalline methamphetamine, or 'ice'.

The majority of clandestine laboratories detected in Australia are located in Queensland, and pseudoephedrine-based production using the hypophosphorous acid method has remained the most common method of manufacture. Methamphetamine has made up the majority of so-called 'amphetamines' available in Australia since the mid 1990s, although the proportion of 'amphetamine' has diminished from about a quarter of the market to less than a few percent. The physical forms of domestically produced methamphetamine have diversified over recent years to include tablet form and so-called 'base' methamphetamine, although the traditional powder form of the drug is still the most readily available and commonly taken form throughout Australia. It is assumed that 'ice' available in Australia is imported rather than locally produced, although there has been one recent detection of a clandestine laboratory in Australia producing ice.

Over the past few years there has been a growth in methamphetamine use, particularly in the new forms of the drug noted above (ice, so-called 'base' methamphetamine and tablets). Increased use of the more potent 'base' and 'ice' forms of methamphetamine has been noted across a range of drug using populations, being detected by general population surveys, among 'party' drug users and injecting drug users. This trend first emerged in 1999, became pronounced with the heroin supply shortage of 2001 and has continued to the present time. Since 2001 all forms of the drug were readily available to users, although relatively speaking the powder form remained the most readily available and most often used, followed by base, and then ice. While a similar proportion of drug users will have used 'base' and ice, the latter is used less often.

There has been a corresponding increase in problems associated with methamphetamine use over this time. Treatment admissions were higher in 2001 than previous estimates from the 1990s. Admissions for psychiatric episodes due to stimulant use have increased dramatically from 200 in 1998-99, to 1,028 in 1999-00 and 1,252 in 2000-01, and a similar but smaller increase has been seen in admissions for other stimulant disorders. The number of arrests relating to amphetamine-type stimulants also increased from between three to four thousand in the mid 1990s to just over 8000 per year since 1999. These trends suggest that the increase in methamphetamine use in Australia began prior to the heroin shortage of 2001, probably around 1998-99, similar to the time when the more potent forms of 'base' and crystalline methamphetamine was first noticed on the drug market.

Current methamphetamine use patterns

Current levels of methamphetamine use in Australia are high. One in ten Australian's have ever used 'amphetamines', while a similar proportion of young adults have used the drug recently. Most users are young (20-30 years) while two-thirds are male. Of the half-million or so Australians who currently use amphetamines, most use recreationally. Only around one in ten current users take the drug weekly or more often, this amounting to approximately 63,000 Australians. It is presumably this smaller group who would be likely to experience the most problems associated with amphetamine use, and be the ones who would be most likely to come into contact with health and law enforcement services. This figure would likely be an underestimate of the true number of 'problematic' amphetamine users as it is based on a general population survey, which inherently underestimate the size of problematic drug using populations.

Levels of use among adolescents are not greatly different from those seen among the adult population, with recent use of the drug occurring in 8-10% of school students aged 16-17 years. Gender differences were far less pronounced among school students than among the general population, with a ratio of 6 males to 5 females using the drug. This suggests that use of methamphetamine may be relatively higher among younger women than older women. Given this trend among students it may also be important to consider gender breakdown by age group for methamphetamine users in contact with services. By way of example, data on methamphetamine treatment in Australia presented in Figure 24 shows that 43% of clients under the age of 20 are female, in comparison with only 30-35% of older clients. A similar trend can be seen in hospital separation data, where 40-45% of those under 20 years of age are female in comparison with 31% of those aged over 30 years.

Use of methamphetamine is particularly high among party drug users in Australia. One in five 'party-drug-users' interviewed in Sydney during 2001 had used methamphetamine 'base' recently, while one-quarter had used ice. Even though similar numbers had been exposed to both 'ice' and 'base', the 'base' form of the drug was used more often: most of this group used 'base' once a month compared with only having used 'ice' once in the past 6 months. Powder methamphetamine was still by far the most common form of the drug used in the dance-party scene[26].

Methamphetamine users comprise a substantial proportion of the injecting drug using population in Australia. One to two in every five injecting drug users report using methamphetamine as their last injection. Many of these are likely to be heroin users who also use methamphetamine. However, around one in five injecting drug users surveyed by the IDRS in 2002 nominated methamphetamine as their primary drug. Patterns of methamphetamine use are similar to those seen among the party drug users, with powder dominating, followed by base, and less frequent use of ice.

Methamphetamine use is also high among criminally involved populations. Surveys of detainees estimate that 28% of males arrested and 39% of females arrested use 'amphetamines' (predominantly methamphetamine). Most amphetamine users are detained for miscellaneous offences or property offences (75%) with relatively few being detained for drug-related (11%) or violent offences (14%). As would be expected, a similarly high rate of methamphetamine use can be seen in some prisons in Australia, with surveys of in-mates showing around half having recently used the drug and one in five being dependent.

Contact with health and law enforcement

Relative to heroin, methamphetamine users appear to have relatively low contact with services specifically for their methamphetamine use. Only six to seven thousand methamphetamine users received treatment in 2000-01[i], in comparison with the 63 000 who used the drug regularly during this period. This level of treatment contact is much lower than for dependent opioid users, where typically around one-third will be in treatment for their drug use at any given time[19]. Contact with the hospital system for stimulant-related disorders was also low with 2,384 registered cases during 2000-01: just over one-third of the number seen for opioids. The low level of contact with services may reflect a low demand for services, or lack of appropriate and accessible services for this population. It is clear that contact with services has increased over the past few years with the increase in levels of use and increased availability of more potent forms of the drug. This suggests that methamphetamine use in Australia will increasingly impact on services should levels continue to increase. It is not clear to what extent the documented level of contact with services represents the true extent of problems due to methamphetamine use. The true impact of methamphetamine use may be under-estimated because of difficulties in the diagnosis and recording of methamphetamine-related problems and lack of data from frontline services.

In contrast to the relatively low level of contact of methamphetamine users with health-related services, methamphetamine use is relatively common among people who come into contact with the criminal justice system. As described above, estimates suggest that between one-quarter and a half of detainees or inmates are users of methamphetamine. Most do not come into contact with the criminal justice system because of methamphetamine-related offences, but because of miscellaneous or property offences.

Methamphetamine users in contact with the health system or law enforcement tended to be slightly older than those methamphetamine users seen in the general population. In terms of age differences, 78% methamphetamine users among the general population were aged under 30 years, while 73% of those in contact with treatment services and 67% of those in contact with hospitals were under the age of 30 years. This would be expected due to the lag between up-take of methamphetamine use and the onset of dependence where people would begin to seek help for their drug use. Offenders who tested positive for amphetamines were also slightly older than the general population with 70% aged under 30 years, although they tended to be younger than other drug-positive offenders.

In terms of gender, methamphetamine users who came into contact with the health system were similar to those methamphetamine users seen in the general population, with around two-thirds being male. Those users who came into contact with the criminal justice system were more likely to be male (80%); however, methamphetamine use was not lower among women offenders than male offenders. This suggests that male and female offenders were similarly likely to use amphetamine, but that overall more offenders were male.

[i] Note. This figure excludes people seeking drug treatment in Queensland.

5 ANALYSIS OF DATA SOURCES ON METHAMPHETAMINE

Currently available national data

There is a substantial amount of routinely collected national data on methamphetamine that is publicly available. Most of these data are available online (Table 13). Specific data sources that were examined in this report provide information on the following broad areas.

- prevalence among the general population
- prevalence among the student population
- use patterns among the following specific populations
    - party drug users
    - injecting drug users
    - offenders
- treatment demand
- hospital service utilization for mental and behavioural problems due to stimulants (including psychosis)
- mortality due to poisoning or overdose
- arrest and seizure data for
    - domestic arrest and seizures
    - domestic clandestine laboratory seizures
    - import seizures
- purity for domestic seizures
- street level price and availability information among sentinel groups (party drug users and injecting drug users).

These routinely collected data cover many key aspects of methamphetamine supply and demand in Australia. There has been much longer ongoing routine data collection on supply-side issues than for health issues (e.g., treatment and hospital admissions). This facilitates interpretation of trends over time in methamphetamine supply. However, recent developments in national level health data, particularly the national minimum data set and national morbidity databases, have provided valuable information. Of particular utility was the public access to treatment and morbidity data cubes from the AIHW web-site, which allowed easy and timely access to information. Routine sentinel surveys were able to provide detailed information on the different physical forms of methamphetamine available and patterns of methamphetamine use.

Most data sources that related to actual methamphetamine users included gender breakdown and comparable age breakdown (i.e., up to 19, 20-29, 30-39, and 40+). This facilitated comparison of the demographic characteristics of methamphetamine users from different sub-populations. An important exception to this was lack of age-related information among arrestees. Age-breakdowns were not included in published national arrest statistics, while age-strata employed by surveys of drug use among offenders were

not comparable to the age distributions used by health data sources. This meant that it was difficult to compare the age distribution for methamphetamine users in the criminal justice system to those in the health system.

One major limitation of routine data sources relating to both health and law enforcement was the categories used to define methamphetamine. Most sources provide data for the amorphous group labelled 'amphetamines' or 'stimulants', and it was not clear which drugs were included in this group. Standardization of categories for amphetamine-type stimulants would facilitate comparison of data, as would providing breakdown by sub-categories of stimulants where possible.

In addition to clarity of the terminology used to define methamphetamine, there was the problem of distinguishing between different forms of methamphetamine. Further distinction between different physical forms of the drug, such as 'ice', may allow trends in the purity of methamphetamine in Australia to be tracked more accurately, and also allow better monitoring of trends in the availability of more pure forms of methamphetamine. Recent developments in Victoria around detailed profiling of all drug seizures may provide important insights into the physical appearance and composition of the various forms of methamphetamine in Australia and how and whether routine data could be adapted to better monitor specific forms of methamphetamine. Improved profiling of the different forms of methamphetamine from import countries would also assist with determining the contribution of imported methamphetamine to the Australian domestic market.

While the focus of this report was national level indicators, law enforcement data and sentinel surveillance data show large inter-jurisdictions differences in methamphetamine supply and demand. Consequently it may be important to allow for geographic disparity when analysing national trends in both law enforcement and health data. Breakdown of national treatment and morbidity data by jurisdiction would be very valuable. Conversely, aggregation of certain data sources at a national level (e.g., purity data, IDRS data) would also be valuable, although this may be hindered by jurisdictional differences in collection of data and/or missing data in some jurisdictions.

Potential areas for analysis

Although publicly available routine data sources did cover many key areas relating to the methamphetamine situation, there remained areas that were not covered. Further development and analysis of data sources, as discussed below, may yield information on the following areas.

- Extent of methamphetamine use:
    - incidence data for methamphetamine use,
    - up-to-date information on methamphetamine use among students, and
    - prevalence and incidence of 'problematic' methamphetamine use (i.e., dependent or injecting use),

- Service contact and utilization associated with methamphetamine use:
    - extent and nature of contact with front-line workers (ambulance and emergency staff, police officers),
    - service utilization related to physical health problems (e.g., renal and cardiac pathology), and
    - service utilization information for general health services (e.g., general practitioners).

- Extent and nature of morbidity and mortality associated with methamphetamine use:
    - HIV and HCV prevalence and related risk behaviour among injecting methamphetamine users,
    - up-to-date mortality data, and
    - research improving understanding of the relationship between methamphetamine use and morbidity and mortality, from which aetiological fractions can be derived (e.g., vascular pathology).

- Supply of methamphetamine:
    - proportions of different 'forms' of methamphetamine seized domestically,
    - purity and composition data for different forms of methamphetamine (domestic), and
    - purity and composition information on methamphetamine forms likely to be imported.

Incidence data and prevalence data on problematic use could potentially be obtained using indirect estimation techniques (Hickman, Seaman & de Angelis et al. 2001), although this would require considerable development of routine data sources and an exploration of the application of in-direct estimation techniques to methamphetamine use. Monitoring incidence among the general population and youth population would require consistent and frequent national general population and school surveys, and consequently such data are not likely to be obtainable without considerable resource implications. In contrast, data on methamphetamine use among students is collected regularly but is not published in a timely fashion (i.e., current published data is for 1999).

There is considerable potential to collect information on methamphetamine users from services other than specialized treatment services. Data from hospitals (including psychiatric data) have the potential to provide additional information on trends in methamphetamine use, information on methamphetamine users who may not access specialized treatment services, and also information on methamphetamine psychosis. There still remain questions about the extent to which hospital separation data accurately assess methamphetamine-related admissions. Comparison of routine data collected through the hospital morbidity database with prospectively collected data on hospital separations would help establish the accuracy of hospital morbidity data.

Hospital morbidity data presented in this report include only mental and behavioural problems due to stimulant use. Further exploration of hospital data could reveal more about the physical morbidity associated with methamphetamine use. This would require consideration of the likely health consequences associated with methamphetamine that may lead to hospitalization (e.g., cardiac and cerebral vascular pathology, renal pathology), associated diagnostic codes, and what proportion are likely to be due to methamphetamine use.

Emergency data may have potential for monitoring methamphetamine use based on experiences in other countries. Problems with using emergency room data are that intoxication or drug use may not been routinely detected or reported, and also the difficulty assessing the relationship between the reason for presentation and the mention of methamphetamine in emergency room records. Prospective collection of data on emergency room patients may provide insight into the potential utility of emergency room data for understanding methamphetamine use. Given that systems exist in Australia to collect this data, and that emergency rooms presentations have provided valuable information on trends and physical morbidity associated with methamphetamine use elsewhere, further effort to establish the utility of these data in Australia may be worthwhile.

The extent and nature of contact with front-line services is another issue that needs to be addressed, although currently it is difficult to see how this could be done through the existing routine data sources. Ambulance data has been used to monitor ambulance attendance related to heroin overdoses, but these events are marked by administration of an opioid antagonist. There is currently no established equivalent 'marker' for stimulant-related overdoses. Detailed examination of ambulance records may reveal whether and how information on methamphetamine-related incidents could be extracted. A similar process could be undertaken through police records to establish whether there are any likely markers for police contact with methamphetamine-related cases outside of drug possession and dealing.

Data on mortality is also collected but not published regularly, this probably being due to the low number of deaths recorded as caused by methamphetamine. One limitation of methamphetamine mortality data is that methamphetamine may cause death through a number of mechanisms that may not be identified as 'drug-related', such as cardiac and cerebral pathology. Estimating the number of deaths related to methamphetamine would require a development of a protocol for deciding what constituted a methamphetamine-related death, and this would require undertaking specific research to understand the characteristics of methamphetamine-related deaths. It may also involve examining deaths due to pathology commonly associated with methamphetamine use and determining whether methamphetamine played a role in these deaths.

Many of the issues surrounding the methamphetamine situation cannot be answered through analysis of routine data sources but require in-depth research. In these cases routine data are often still essential. For example, estimating trends in the incidence of injecting or dependent methamphetamine use would require several routine data sources that had been collected on a continuous basis for a number of years. Continued effort in collecting good quality routine data at a national level will improve prospects for gaining information that could assist with specific research and also serve as ongoing information resource for methamphetamine trends and related issues.

Table 13: Online sites for methamphetamine-related data sources

List of on-line data sources for methamphetamine:
• prevalence among the general population: http://www.aihw.gov.au/publications/phe/ndshs01df/ • prevalence among the student population: http://www.health.gov.au/pubhlth/publicat/document/mono46.pdf • use patterns among party drug users: http://ndarc.med.unsw.edu.au/ndarc.nsf/website/IDRS.bulletins • use patterns among injecting drug users: http://ndarc.med.unsw.edu.au/ndarc.nsf/website/IDRS.bulletins • treatment demand for methamphetamine use: http://www.aihw.gov.au/drugs/datacubes/index.html • hospital service utilization for mental and behavioural problems related to methamphetamine (including psychosis) http://www.aihw.gov.au/hospitaldata/datacubes/index.html • mortality due directly to stimulants: http://www.aihw.gov.au/publications/index.cfm?type=detail&id=6461 http://www.aihw.gov.au/mortality/data/current_data.html • purity data: http://www.crimecommission.gov.au/html/pg_publications.html • arrest and seizure data: http://www.crimecommission.gov.au/html/pg_publications.html • clandestine laboratory seizures: http://www.crimecommission.gov.au/html/pg_publications.html • drug use among offenders: http://203.34.9.76/research/duma http://www.aic.gov.au/research/projects/0019-paper.html • price and availability data from party drug users and injecting drug users: http://ndarc.med.unsw.edu.au/ndarc.nsf/website/IDRS.bulletins

6 CONCLUSION

The supply of amphetamine-type stimulants in Australia has increased dramatically over the past five years, with a ten fold increase in seizures of methamphetamine. This increase has been characterized by a rise in domestic production of methamphetamine and greater importation of high purity crystalline methamphetamine. Most domestically produced 'amphetamine' is methamphetamine produced from pseudo-ephedrine through the hypophosphorous acid method. Low purity powder methamphetamine is typically the most available form of the drug although other forms have become increasingly available since 1999. These other forms include higher purity 'wet' powder sold as 'base' methamphetamine, methamphetamine pills, and the imported crystalline methamphetamine or 'ice'.

Methamphetamine use and related contact with health and law enforcement increased most noticeably around 1998-1999. This corresponds well with the emergence of more potent forms of methamphetamine on the market. Increased use of methamphetamine during the heroin shortage of 2001 was particularly salient, although it needs to be noted that the increase in methamphetamine use occurred prior to this time, at least as early as 1999. Most indicator data for 2002 is not yet available; however, existing data and information from the IDRS would suggest that levels of methamphetamine use have continued to remain high.

High levels of methamphetamine use have been found across different populations, while most users are young, with a ratio of approximately two males to every female. Most use is recreational although there does exist a population of regular dependent users while injection of methamphetamine is also relatively high in Australia. Contact with health services is low among this group, but has increased alongside increasing use of the drug. In contrast, methamphetamine use seems relatively common among people who come into contact with the criminal justice system, with one to two in every ten inmates being dependent on methamphetamine and higher proportions of inmates and detainees having recently used the drug.

Analysis of the existing routine data sources has been valuable in understanding the current methamphetamine situation and recent trends in the methamphetamine market. Continued collection of these data and improved comparability of different data sources would be useful for monitoring the methamphetamine situation in the future. Improved profiling of different forms of methamphetamine and development of a common terminology for these forms would greatly facilitate understanding the market dynamics. Development of data relating to low-threshold and frontline services is also necessary to gauge the full impact of methamphetamine use. Further development of these and other data routine data sources would also allow more robust prevalence estimates for injecting or dependent methamphetamine, and potentially allow monitoring of trends in the uptake of problematic methamphetamine use.

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8 APPENDIX

Treatment demand data

There are two sources of data in Australia that examine treatment demand for illicit drugs. The first is the national census on 'Clients of Treatment Service Agencies' or COTSA. This census has been undertaken 4 times in Australia (1990, 1992, 1995 and 2001) and involves a cross sectional survey of treatment agencies on a particular day. The most recent census was conducted on May 2 2001 and included data from 458 agencies around Australia –90.1% of the agencies surveyed and 87% of all agencies identified. Agencies were identified for inclusion in the survey through examination of all available listings of federal, state and territory government and non-government organizations. This data provides a "snapshot' of people seeking treatment on the day of the census, although importantly excludes people without face-to-face service provision on that day including those receiving methadone doses.

The second data source relating to treatment demand is the recently established Alcohol and Other Drug Treatment Services National Minimum Data Set (AODTS–NMDS). This system involves routine data collection from treatment agencies on a nationally agreed set of common data items. NMDS data are collected from publicly funded (government and non-government) alcohol and other drug treatment service providers. This data pertains to individuals with a drug use problem, and excludes those seeking help for the drug use of other people (e.g. parent seeking treatment for their child). The NMDS for 2000–2001 counts clients as opposed to treatment episodes. Therefore, clients are only counted once for the year; however, if the same client registered at more than one alcohol and other drug treatment agency during the year they will be counted more than once in the data. Some jurisdictions provided data based on completed treatment episodes instead of registrations. For those jurisdictions, client registrations will be undercounted. These data DO NOT include treatment data from Queensland, and cannot be analysed by state or territory for confidentiality reasons. Also these data DO NOT include methadone maintenance treatment, half-way houses, sobering up shelters, and correctional institutions. Indigenous clients may be undercounted, while the category 'Indigenous' includes those persons who identified as Aboriginal, Torres Strait Islander and both Aboriginal and Torres Strait Islander.

While the NDMS dataset is the preferred dataset as it counts the actual number of cases of drug treatment per year, it has the major limitation of excluding Queensland data in 2000-01 (Note that future years of data collection will include Queensland data). Despite the limitations of each data set, the overall findings from each are similar. Consequently, NMDS data has been used in this report to describe the current treatment demand for methamphetamine (as the public access to national level data facilitates more detailed analysis of amphetamine-related admissions) while COTSA data will be used to examine trends over time (as there have been four data collection episodes over the last decade).

Hospital morbidity data

The National Hospital Morbidity Database is compiled by the Institute (AIHW) from data supplied by the State and Territory health authorities. It is a collection of electronic confidentialised summary records for admitted patients separated from public and private hospitals in Australia in the years 1993–94 to 2000–01. The total number of records for 2000–01 was 6.14 million. Almost all hospitals in Australia are included: public acute, public psychiatric hospitals, private acute and psychiatric hospitals, and

private free-standing day hospital facilities. Definitions are based on the *National Health Data Dictionary*, although the actual definitions used may have varied among the data providers and from one year to another. Also, fine details of the scope of the collection have varied from year to year.

Not all private hospital separations are included in the National Hospital Morbidity Database. In 2000–01, there were about 81,809 separations (3.5%) fewer private hospital separations reported to the Database than to the Australian Bureau of Statistics' Private Health Establishments Collection, which has wider coverage.

In general diagnostic codes represent those from the ICD-10-AM. However, not all data were originally collected using ICD-10-AM codes. For 1998–99, diagnoses were recorded using ICD-9-CM by South Australia, Western Australia, Queensland and Tasmania. The Australian Institute of Health and Welfare mapped the ICD-9-CM data provided for 1998–99 forward to ICD-10-AM. For 1999–00 South Australia mapped the data collected using the 1st Edition of ICD-10-AM forward to codes of the 2nd Edition of ICD-10-AM before providing them to the Institute. Where mapped codes could be identified (because they were invalid 1st Edition codes), the Institute mapped the South Australian data backward to 1st Edition codes so that national data could be presented in a single classification. All other states and territories used the first edition of ICD-10-AM (National Centre for Classification in Health 1998). For 2000–01, diagnoses were reported to the National Hospital Morbidity Database for all States and Territories using the second edition of ICD-10-AM (National Centre for Classification in Health 2000).

Data presented here are based on separations by principal diagnosis. The ***principal diagnosis*** is defined as the diagnosis established after study to be chiefly responsible for occasioning the patient's episode of care in hospital. The term 'separations' refers to the episode of care, which can be a total hospital stay (from admission to discharge, transfer or death), or a portion of a hospital stay beginning or ending in a change of type of care (for example, from acute to rehabilitation). 'Separation' also means the process by which an admitted patient completes an episode of care by being discharged, dying, transferring to another hospital or changing type of care.

The data reported here only include "Mental and Behavioural Disorders due to psychoactive substance use (ICD-10-AM codes F10-F19)". This includes sub-categories of: acute intoxication, harmful use, dependence syndrome, withdrawal state, withdrawal state with delirium, psychotic disorder, amnesic syndrome residual and late-onset psychotic disorder, other mental and behavioural disorders and unspecified mental and behavioural disorders. The data presented here do not include separations for other ailments due to stimulant drugs, nor those where stimulants may have been a contributing factor rather than the cause of the diagnosis. Diagnoses that are due to amphetamine or methamphetamine come under the category of diagnoses due to "stimulants including caffeine (F15)" (excludes cocaine which comes under the code F14). Therefore data presented here represents diagnoses due to all amphetamine-type drugs and caffeine, not just amphetamine and methamphetamine. For the sake of conciseness this report refers to this class as 'stimulants'. However, it is likely that amphetamine and/or methamphetamine account for the bulk of separations related to stimulants as the dependence syndrome and drug-induced psychosis are documented almost exclusively in conjunction with these drugs.

Although data on hospital separations can reflect an aspect of the burden of disease in the community, they do not usually provide measures of the incidence (number of new cases) or prevalence (number of cases existing at a point of time) of conditions. This is because not all patients with a type or degree of illness are treated in hospital. In addition, the number and pattern of hospitalisations can be affected by differing admission practices, differing levels and patterns of service provision, and multiple admissions for some chronic conditions.

Data presented in this report include segregated general hospital and psychiatric hospital admissions, and are referred to as such in the text.