

**E. Kelly, R. McKetin & J. McLaren**

**Health Service Utilisation among Regular  
Methamphetamine Users**

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# **HEALTH SERVICE UTILISATION AMONG REGULAR METHAMPHETAMINE USERS**

**Erin Kelly, Rebecca McKetin and Jennifer McLaren**

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## EXECUTIVE SUMMARY

### Background

It has been estimated that there are around 103,000 regular methamphetamine users in Australia, of whom approximately 73,000 are dependent on the drug. Heavy or dependent methamphetamine use is associated with a range of physical and mental health problems, such as psychosis, cardiovascular complaints, bruxism (teeth grinding and clenching) and sleep disturbances. People who inject methamphetamine are also at risk of contracting and transmitting blood-borne viruses. It is therefore likely that methamphetamine users have high levels of contact with the health sector. To date there has been little research examining health service utilisation among methamphetamine users in Australia, with most previous research in this area focussing on opioid and cocaine use.

Information on health service utilisation among methamphetamine users can improve our understanding of how methamphetamine use impacts on the health sector, the coverage of services for methamphetamine use, and factors affecting access to health services among this population. This type of information can ultimately aid the design of accessible treatment and other health care services for methamphetamine users.

The aim of the current study was to investigate patterns of health care utilisation among methamphetamine users. Specifically, we investigated the level of contact that methamphetamine users had with various health care services, both for general health care and methamphetamine-related problems. We also examined factors influencing health service utilisation, including patterns of drug use, sociodemographic characteristics, and disability in physical and mental functioning.

### Method

Participants were 310 regular methamphetamine users from Sydney who were recruited through advertisements in newspapers, free press publications, needle and syringe programs and websites, as well as through word of mouth and referral from other research studies. Inclusion criteria for participation were having used methamphetamine at least monthly in the past year and being at least 16 years of age. A structured questionnaire was administered face-to-face by researchers at a mutually convenient location, such as cafes, parks and health centres. All participants were volunteers who completed informed consent and were reimbursed \$30 for their participation.

Measures of health service utilisation were based on those used previously to assess drug treatment outcomes (Mattick et al., 2001; Shanahan et al., 2004) and included past year and past month utilisation of drug treatment services, hospitals, emergency and ambulance services, and general practitioners. Past month utilisation of other health professionals and purchasing of prescription medication was also measured. Additional information was collected on methamphetamine-related contact with drug treatment, hospital, emergency, and ambulances services, and also whether participants had received help for their methamphetamine use from a general practitioner.

Drug use measures included: (a) lifetime, past year and past month use of all major drug types; (b) frequency of drug use in the past month by drug type; (c) lifetime and past year injection of specific drug types and current frequency of injection; and (d) drug of choice.

Information was also obtained on the main method of methamphetamine administration and methamphetamine dependence in the past year. Methamphetamine dependence was defined as a score of four or greater on the Severity of Dependence Scale (Topp & Mattick, 1997).

Disability in physical and mental functioning was measured by the 12-item Short Form (SF-12, Ware, Kosinski, & Keller, 1996). Demographic factors measured included gender, age, language spoken at home, country of birth, income, level of high school education, tertiary education and employment status.

## Results

Almost all participants (94%) had used at least one health service in the past year. The proportion of participants who had contact with general practitioners within the past month was particularly high relative to other health services (53% vs. 10% or less, see Table below). It is noteworthy that 15% of participants had received help for their methamphetamine use from their general practitioner in the past year.

Specialised drug treatment agencies were the next most common health service used; however, only 10% of participants had received treatment specifically for methamphetamine use during the past year. The majority of drug treatment provided to methamphetamine users was for concurrent heroin use.

Almost one third of participants (31%) had been to an emergency department within the past year, one in five had used an ambulance service during this time, and 16% had been admitted to hospital. Almost one third (31%) of participants who had utilised these services within the past year indicated that methamphetamine was the main reason for their attendance.

<b>Percentage of methamphetamine users utilising health care services</b>			
<b>Service</b>	<b>Past month (%)</b>	<b>Past year (%)</b>	<b>Methamphetamine-related contact in past year (%)</b>
<b>Hospital</b>	<b>1</b>	<b>16</b>	<b>5</b>
<b>Ambulance</b>	<b>2</b>	<b>20</b>	<b>5</b>
<b>Emergency</b>	<b>4</b>	<b>31</b>	<b>7</b>
<b>General practitioner</b>	<b>53</b>	<b>88</b>	<b>15<sup>a</sup></b>
<b>Treatment</b>	<b>10</b>	<b>39</b>	<b>10</b>

<sup>a</sup> Received any help for methamphetamine use

Overall, health service utilisation among methamphetamine users was strongly related to injecting drug use, and particularly to the injection of heroin. After adjusting for disability in physical and mental functioning, heroin injectors were two to three times more likely than their non-heroin injecting counterparts to have utilised health care services. This trend was particularly pronounced for drug treatment, with heroin injectors being over five times more likely than non-heroin injectors to have attended drug treatment in the past year, and twice as likely to have received treatment for methamphetamine use in their lifetime.

Almost half of the sample (41%) had bought prescription medication in the previous month. Benzodiazepines were by far the most commonly purchased medication followed by antidepressants and narcotic analgesics. Unlike other types of health service utilisation, purchasing prescription medication was not related to heroin use, but was related to disability in mental functioning, older age, and higher income. Methamphetamine users on a low income (net weekly income less than AU\$200) were half as likely to have purchased prescription medication relative to their more financial counterparts.

### **Conclusion**

Methamphetamine users who participated in the current study reported high utilisation of health care services. Their level of general practitioner utilisation and purchasing of prescription medication was only slightly lower than that found among heroin users (Darke, Ross, Teesson, & Lynskey, 2003). Methamphetamine users also appeared to have high levels of contact with emergency departments relative to the general population, although their contact with ambulance, emergency and hospital services was lower than that previously observed among heroin users (Darke et al., 2003).

The current findings suggest that methamphetamine users who are concurrent heroin users have the greatest impact on the health sector in terms of their utilisation of general health care and specialised drug treatment services. The over-representation of heroin users attending health services is likely to reflect their greater need for health care, including specific urgent medical problems such as heroin overdose. However, higher drug treatment utilisation among heroin using participants in the current study is also likely to reflect the availability of services for opioid use in Sydney and the relative scarcity of services tailored to methamphetamine dependence.

Dependent methamphetamine users who are not concurrent heroin injectors are likely to be more difficult to access and engage in treatment or other health services because they have low levels of contact with the health system. Further research is needed to examine health care needs among this segment of the methamphetamine using population and the reasons why they do not access services. In the interim, general practitioners, and to a lesser extent emergency services, appear to be the most viable option for accessing and providing education and referral information to this population.

# 1 INTRODUCTION

## 1.1 Methamphetamine use in Australia

Almost one in ten Australians have ever tried methamphetamine (known locally by the street terms ‘speed’, ‘base’, ‘ice’, and ‘crystal’) and around half a million Australian adults are current users of the drug (Australian Institute of Health and Welfare, 2005).

Although many of these people would use the drug infrequently, recent estimates suggest that there are around 73,000 dependent methamphetamine users in Australia (McKetin, McLaren, Kelly, Hall, & Hickman, 2005). These dependent methamphetamine users are likely to benefit from drug treatment, as well as requiring health services for a range of other problems related to their methamphetamine use.

Heavy or dependent methamphetamine use is associated with a range of adverse health consequences that are likely to result in the utilisation of health care services. Specifically, heavy methamphetamine users are at elevated risk for psychosis, which has a significant impact on frontline emergency and medical staff (McKetin, McLaren, & Kelly, Submitted). They also suffer high rates of other mental health problems, including depression, for which they are likely to receive medication and other health care services (Baker, Lee, Claire et al., 2004; Hall, Hando, Darke, & Ross, 1996). Cardiovascular complaints also occur among methamphetamine users (e.g. tachycardia) which lead some users of the drug to seek help from emergency departments (Kaye & McKetin, in preparation; McKetin et al., Submitted; Petitti, Sidney, Quesenberry, & Bernstein, 1998). Other physical complaints associated with the drug’s use, such as bruxism (teeth grinding and clenching), sleep disturbances and weight loss, are similarly likely to cause a proportion of methamphetamine users to take medication and/or seek help from health care services. The majority of dependent methamphetamine users also inject the drug, meaning that they are at risk of contracting and transmitting blood borne viruses as well as requiring treatment for other injection-related problems (McKetin et al., Submitted).

Despite the size of the methamphetamine using population in Australia, and the range of health care needs that this population is likely to present, there has been scarce systematic research into their health care utilisation. It is important to examine health service utilisation among methamphetamine users because this type of information can help us to understand the extent and nature of the impact that methamphetamine use has on the health sector. Information on health service utilisation can also be used to understand the coverage of treatment services and factors affecting access to health services among methamphetamine users. This type of information can ultimately aid the design of accessible treatment and other health care services for methamphetamine users. Health service utilisation information also provides a basis for costing drug use and assessing the economic benefits of providing treatment for drug dependent populations (Mattick et al., 2001).

## 1.2 Health service utilisation

Research on health service utilisation is typically based on the model devised by Aday and Andersen (Aday & Andersen, 1974). The basic premise of this model is that health service use is a function of predisposing factors, enabling factors and need factors (Aday & Andersen, 1974; Andersen, 1995; Booth, Staton, & Leukefeld, 2001). Factors that are

likely to predispose individuals to use health services include demographic factors (e.g. age and gender), social structure factors (e.g. education and ethnicity), and health beliefs. Enabling factors are those that facilitate or impede a person's use of health services, including both personal factors (e.g. income and transport), and external factors, such as the availability of appropriate services. Need factors include both the person's perceived need for health care, and objective measures of health status. Aday and Anderson's model of health service utilisation has undergone a number of revisions since its conception, in an effort to include other important factors in health service utilisation, such as the characteristics of the health care system, the external environment (e.g. political and economic context), and personal health practices, such as diet, exercise, and alcohol or drug use (Andersen, 1995).

### *Predisposing factors*

A number of studies have confirmed the influence of predisposing factors in health service utilisation. It has been found that females are typically more likely to use health services than males (Broyles, Narine, Brandt, & Biard-Holmes, 2000; Dunlop, Coyte, & McIsaac, 2000; Scott, Marwick, & Crampton, 2003), health service utilisation generally increases with age (Broyles et al., 2000; Sterk, Theall, & Elifson, 2002), and that individuals from minority groups are typically less likely to use health services than those from the majority population (Doescher, Saver, Franks, & Fiscella, 2000; Fiscella, Franks, Gold, & Clancy, 2000; O'Connor & Haley, 2003; Scott et al., 2003). The influence of education on health service utilisation is less clear, with some studies finding the use of health services to be greater among people with higher levels of education (Dunlop et al., 2000), while others have found health service use to be greater among people with less education (Gravelle et al., 2003; Yip, Kephart, & Veuglers, 2002). The latter finding is likely to be confounded by the association between low levels of education and low socioeconomic status, which is predictive of poor health.

An often neglected aspect of predisposing factors on health service utilisation is health beliefs. Strain (1991) found that those who are more sceptical of medicine are less likely to use health services, and those with a stronger belief in health maintenance are more likely to use health services. Similarly, Fiscella et al. (1998) found scepticism of medical services to be associated with fewer physician and emergency visits and less frequent hospitalisations. Unsurprisingly, Bellon et al. (1999) found that those who perceived themselves to be more susceptible to illness, and those who perceive their illness to be more severe, use primary care services more frequently than other individuals.

### *Enabling factors*

The bulk of research on enabling factors has been concerned with the effect of socioeconomic status on health service utilisation. Low socioeconomic status has been found to differentially influence health service utilisation. When health care is financially and geographically available, those with low socioeconomic status are more likely to access health services, due to their greater need of health care, which is attributable to their lower standard of living (Dunlop et al., 2000; Turrell, Harris, & Jolley, 2004; van Doorsler et al., 2000; Veugelers & Yip, 2003; Yip et al., 2002). However, when health care is less available, those with low socioeconomic status are less likely to access health services (Andrulis, 1998; Dunlop et al., 2000; Fiscella et al., 2000; Turrell et al., 2004), presumably due to the inability to afford such services.

Another important enabling factor in accessing health care is the availability of services. This can be considered in terms of physical availability - that is, whether there are health services in the area, and the availability of appropriate services – or whether the health services are suitable to the needs and characteristics of the potential consumer. Unsurprisingly, greater availability of services results in more health service utilisation (Broyles et al., 2000; Gravelle et al., 2003; Turrell et al., 2004).

### *Need factors*

As would be expected, need factors are often cited to be the most important factor in explaining health service utilisation. There is significant evidence that poor health status is positively associated with greater use of health services. People who perceive their health status to be poor, or identify a greater number of health complaints, are more likely to use health services than those who have better health (Broyles et al., 2000; Dunlop et al., 2000; Gravelle et al., 2003; Korten et al., 1998; Mendoza-Sassi, Beria, & Barros, 2003; Scott et al., 2003; Strain, 1991). There is also evidence that frequent health service use is positively associated with mental health disorders (Bellon et al., 1999).

The final factor implicated in health service utilisation is negative health behaviours. Although negative health behaviours can increase health service utilisation because they result in health problems, it has been proposed that people who engage in negative health behaviours are not very concerned about their health, and therefore do not seek the health care they need (Vogt & Schweitzer, 1985).

## **1.3 Health service utilisation among drug users**

There have been few research studies specifically on health service utilisation among drug users, although research in the U.S.A. provides evidence of a high level of health service utilisation among drug users, particularly for emergency departments (Cherpitel, 2003; Darke et al., 2003; French, McGeary, Chitwood, & McCoy, 2000; McGeary & French, 2000; Ottaway & Erickson, 1997; Stein, O'Sullivan, Ellis, Perrin, & Wartenberg, 1993; Sterk et al., 2002; Virgo, Price, Spitznagel, & Ji, 1999; Zywiak et al., 1999). Results from the 2000 National Alcohol Survey in the U.S.A. showed that illicit drug users were almost twice as likely as non-drug-users to report emergency department utilisation and one and a half times more likely to report primary care utilisation in the past year (Cherpitel, 2003). In French et al.'s (2000) study of a community sample of chronic and injecting drug users (predominantly cocaine and/or opioid users) in Florida, drug users were found to have utilised significantly more hospital and emergency care than non-drug users, but less outpatient services. Both studies controlled for factors likely to influence health service utilisation, such as gender, age, ethnicity, income and health insurance status.

Previous research on health service utilisation among heroin users seeking treatment in Australia has also found that this population has high levels of contact with the health sector, and that they seek health care from a range of health services (Darke et al., 2003; Shanahan et al., 2004). Heroin users surveyed by Darke et al. (2003) were most likely to have recently received health care from general practitioners, followed by emergency departments, ambulances, hospitals and dentists. Prescription medication use was found

to be particularly high, with approximately half the heroin users surveyed having purchased prescription medication in the past month.

Although the majority of studies on health service utilisation among drug users have focussed on heroin and cocaine users, there have been some studies conducted on health service utilisation among methamphetamine users in the U.S.A. These studies provide evidence that methamphetamine use significantly impacts on emergency departments. Studies of methamphetamine users attending emergency departments, hospitals and primary care facilities have identified common presenting symptoms to include chest pain, abdomen pain, injuries, complications of substance use, upper respiratory infections, pneumonia, psychiatric illness and medication requests (Palepu et al., 2001; Richards et al., 1999; Sanchez-Carbonell & Seus, 2000). Emergency room patients that test positive for meth/amphetamine were more likely than other patients to have attended due to trauma-related incidents, such as intentional self-inflicted injury or injuries obtained from assault (Richards et al., 1999; Tominaga, Garcia, Dzierba, & Wong, 2004). Tominaga et al. (2004) examined a subset of patients admitted to an emergency department in Hawaii over a 12 month period. Those that tested positive for meth/amphetamine had significantly longer hospital stays than meth/amphetamine-negative patients and the total cost of their care was greater. Richards et al. (1999) compared emergency department utilisation among patients with urine toxicology screens positive for methamphetamine with the remaining emergency department patients. Methamphetamine positive patients were more likely than other patients to have been transported to emergency via ambulance and were more likely to be admitted to the hospital, resulting in greater resource utilisation and cost.

Most of the previous research on health service utilisation among methamphetamine users has focussed on their use of drug treatment services. Studies on drug treatment utilisation among amphetamine users in Australia have found that they seek amphetamine-related treatment from a range of health care services, many of which are not specialised drug or alcohol treatment facilities. Specifically, amphetamine users have been found to seek treatment from general practitioners, emergency departments, psychiatrists and natural therapists (Hall & Hando, 1994; Hando, Topp, & Hall, 1997; Vincent, Shoobridge, Ask, Allsop, & Ali, 1999). Research findings from the U.K. suggest that amphetamine users perceive drug treatment services as inappropriate to their needs (Klee & Morris, 1994; Wright, Klee, & Reid, 1999). This may explain the tendency of amphetamine users to seek amphetamine-related care at services other than drug treatment centres. Amphetamine users that do seek treatment are found to be heavier, more dependent methamphetamine users than their non-treatment seeking counterparts, who also have higher levels of polydrug use and lower sociodemographic status (Hando et al., 1997; Hser, Huang, Chou, Teruya, & Anglin, 2003; Klee & Morris, 1994; McKetin, Kelly, Indig, & McLaren, 2004; McKetin & McLaren, 2004; Rawson et al., 2000; Reiber, Galloway, Cohen, Hsu, & Lord, 2000; Vincent et al., 1999; Wright et al., 1999).

In summary, there has been limited systematic research on health service utilisation among drug users, and little of this research has focussed specifically on methamphetamine users. Based on the existing literature, it is reasonable to say that illicit drug use is associated with high levels of health service utilisation. Research on health service utilisation among methamphetamine users indicates that they are likely to have high utilisation of emergency services, but there is little research on their utilisation of other general health care services. It also appears that methamphetamine users seek help for their drug use from a range of general health services.

## **1.4 Aims of the current study**

The aim of the current study was to examine health service utilisation among regular methamphetamine users in Sydney. Specifically, we examined:

1. the level of contact that methamphetamine users have with various health care services;
2. the proportion of methamphetamine users who access health care for methamphetamine-related problems; and
3. factors predictive of health service utilisation, including drug use, disability and sociodemographic characteristics.



## 2 METHOD

### 2.1 Procedure

Regular methamphetamine users ( $n = 310$ ) were recruited from across Sydney via a range of methods, including advertisements placed in local newspapers and free press publications, word of mouth, flyers placed in needle and syringe programs, advertisements on websites (e.g. pill reports website), and referral from other research studies. Recruitment took place from December 2003 to July 2004. Inclusion criteria for participation in the study were having used methamphetamine at least monthly in the past year and being at least 16 years of age.

All participants were volunteers who completed informed consent prior to participation in the survey. Participants were reimbursed \$30 for their participation. Interviews were conducted at a mutually convenient location, such as cafes, parks and health centres. A structured questionnaire was administered face-to-face by researchers to obtain information on demographic characteristics, general drug use and methamphetamine use patterns, physical and mental functioning and health service utilisation. These areas are described in detail below.

### 2.2 Measures

*Demographic* measures included gender, age, language spoken at home, country of birth, level of high school education, tertiary education, employment status and prison history.

*Drug use* measures included: (a) lifetime, past year and past month use of all major drug types; (b) injecting drug use, including lifetime and past year injection of specific drug types, and current frequency of injection; (c) current frequency of drug use by drug type; and (d) drug of choice. Information was also obtained on the main method of methamphetamine administration and methamphetamine dependence in the past year. Methamphetamine dependence was measured using the Severity of Dependence Scale (SDS). Scores on this scale range from 0 to 15, with higher scores indicating greater drug dependence. A score of four or greater was used to indicate methamphetamine dependence (Topp & Mattick, 1997).

*Disability in physical and mental functioning* was measured using the 12-item Short Form (SF-12, Ware et al., 1996). The SF-12 yields two scores: the Physical Component Summary, a measure of physical functioning; and the Mental Component Summary, a measure of mental functioning. Lower scores on each scale represent greater disability in functioning (Sanderson & Andrews, 2002). The prevalence of disability on each scale was categorized using the scales designed by Sanderson and Andrews (2002). No disability was represented by a score of 50 or greater, mild disability by scores of 40 to 49, moderate disability by scores of 30 to 39, and severe disability by scores below 30.

*Health service utilisation* questions were based on the Health Services Utilisation form developed by the Centre for Health Economics Research and Evaluation (University of Technology, Sydney), which has been adapted and used to measure health service utilisation among drug using populations (Mattick et al., 2001; Shanahan et al., 2004). This section included questions on contact with drug treatment services, hospitals,

emergency departments, ambulance services, general practitioners, and contact with any additional health professionals (see Appendix). Participants were asked about the number of contact episodes in the past month with various services. In addition, participants were asked about the number of contact episodes in the past year for those services which were expected to have a low frequency of utilisation, namely drug treatment centres, hospitals, emergency departments and ambulances. Participants were also asked about the number of prescription and non-prescription medications purchased in the previous month, and the name of the medication purchased.

Drug treatment services were defined as services that provided specialised treatment for alcohol or other drug use, and excluded services that provided only preventative or non-specific support services (e.g. needle and syringe programs, shelters or refuges). Hospitals included both public and private acute care facilities, and psychiatric units.

*Methamphetamine-related attendances* to hospital, emergency, ambulance and drug treatment services included only those where methamphetamine was the primary reason for the attendance. Methamphetamine-related visits to general practitioners included those where the participant received any help for their methamphetamine use, regardless of whether methamphetamine use was the main reason for the visit.

### **2.3 Statistical analyses**

Data were analysed using SPSS (SPSS Incorporated, 2003). Comparisons were made between the characteristics of participants who utilised services with those who had not, using a Pearson's Chi Square test for dichotomous variables, a median rank order correlation test for non-normally distributed data, and t-tests for normally distributed data. Logistic regression was used to examine factors associated with health service utilisation.

## **3 RESULTS**

### **3.1 Characteristics of the sample**

The median age of participants was 28 years (range 16-60 years). Over half (59%) of the participants were male, almost all (96%) identified English as their main language, and the majority (80%) were born in Australia. Participants had a median of 10 years of formal school education and approximately half (45%) had a tertiary qualification. Almost two thirds (61%) of participants were currently unemployed and one third reported having served a prison sentence.

The majority of participants (82%) had used methamphetamine at least weekly in the past year and 13% had used daily. Polydrug use was common, with a median of seven drug classes used in the past year (range 2-11). Fifty-five percent of the sample reported methamphetamine to be their drug of choice. The next most commonly reported drugs of choice were cannabis, ecstasy and heroin (12% each). Approximately three quarters (72%) of the sample had ever injected a drug, and two thirds (65%) nominated injecting as their main route of methamphetamine administration during the past year. Over half of participants (56%) were classified as being dependent on methamphetamine according to a score of four or greater on the Severity of Dependence Scale (Topp & Mattick, 1997). Two-thirds of the sample had disability in mental functioning and 47% had disability in physical functioning according to the SF-12, and only 17% had no disability in either their mental or physical functioning.

### **3.2 Overview of health service utilisation**

Almost all (94%) of the participants had utilised at least one health care service during the preceding year (including hospitals, emergency departments, ambulances, general practitioners and drug treatment services).

The proportion of participants who had contact with general practitioners within the past month was particularly high relative to other health services (53% vs. 10% or less, Table 1). It is noteworthy that 15% of methamphetamine users had received some help from their general practitioner for their methamphetamine use during this time.

The next most common health service with which methamphetamine users had contact was treatment agencies; however, only 10% had received treatment specifically for methamphetamine use.

Almost one-third of participants had been to an emergency department within the past year, one in five had used an ambulance service during this time, and 16% had been admitted to hospital. Around one-quarter to one-third of participants who had utilised these services within the past year indicated that methamphetamine was the main reason for their attendance (Table 1).

**Table 1. Percentage of methamphetamine users utilising health care services**

	Past month (%)	Past year (%)	Methamphetamine-related contact in past year (%)
Hospital	1	16	5
Ambulance	2	20	5
Emergency	4	31	7
General practitioner	53	88	15 <sup>a</sup>
Treatment	10	39	10

<sup>a</sup> Received any help for methamphetamine use. Methamphetamine-related contact with all other services reflects contact where methamphetamine was the main presenting problem.

### 3.2.1 The relationship between the utilisation of various health services

There was a significant overlap between the utilisation of different health services. This was particularly true for the utilisation of hospitals, emergency departments and ambulances (Table 2). This would be expected, as participants were often transported to emergency departments via ambulance, and admitted to hospital post emergency attendance.

There was a less pronounced relationship between the utilisation of general health care services and drug treatment, although participants who had been to drug treatment were more likely to have received hospital, ambulance or emergency care during the past year than those who had not been to drug treatment. They were also more likely to have seen a general practitioner in the past month.

There was no relationship between the utilisation of general practitioners in the past year and the utilisation of the other health services. This is likely to be due to the high prevalence of general practitioner utilisation, with only 12% of participants not having visited a general practitioner in the past year. For this reason we examined general practitioner utilisation during the past month. As shown in Table 2, there was still only a modest positive association between having attended a general practitioner and attendance at other general health care services.

**Table 2. Correlation between the utilisation of various health services**

	Hospital	Emergency	Ambulance	Drug treatment	General Practitioner
Hospital	-	0.40***	0.34***	0.16**	0.09
Emergency		-	0.48***	0.14*	0.10
Ambulance			-	0.22***	0.16**
Drug treatment				-	0.27***

Note. Figures for hospital, emergency, ambulance and drug treatment utilisation refer to care received in the past year, while figures for general practitioner utilisation refer to care received in the past month

\*p < 0.05, \*\*p < 0.01, \*\*\*p < 0.001; Spearman rank order correlation

### 3.3 Hospital, ambulance and emergency care

Just under a third of the sample had attended an emergency department in the past year, and approximately one in five participants had received care from an ambulance or had been admitted to hospital in that time. Approximately one quarter of the participants who had been admitted to hospital in the past year had been admitted to a psychiatric ward. The majority of participants who had accessed ambulance, emergency or hospital services had done so only once in the past year (Figure 1).

Almost one third (31%) of participants who had used these services indicated that their contact was methamphetamine-related. The overwhelming majority of these people (90%) had methamphetamine-related contact with these services only once during the past year.

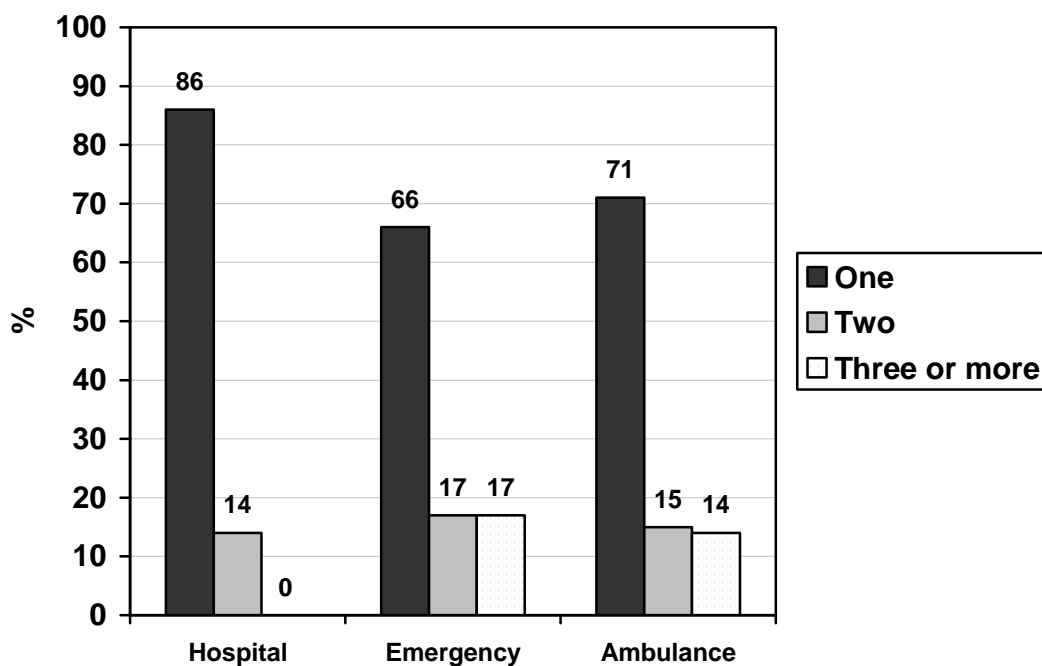


Figure 1. Number of hospital, emergency department and ambulance attendances in the past year

#### 3.3.1 Factors predicting the use of hospital, ambulance and emergency care

Predictors of having attended either hospital, ambulance or emergency services were examined. As would be expected, physical disability was related to having received hospital, emergency or ambulance care within the past year. Poor mental health was also related to having received help from these services, but only for participants with moderate or severe disability in mental functioning. Other factors related to having received hospital, emergency or ambulance care in the past year were injecting methamphetamine, injecting heroin and being Australian born (Table 3).

After adjusting for disability in physical and mental functioning, heroin injectors were over twice as likely as other methamphetamine users to have received hospital, ambulance or emergency care. Conversely, methamphetamine users who were born outside of Australia were only half as likely to have received care from these services relative to their Australian born counterparts (Table 4).

**Table 3. Characteristics of participants who had received hospital, emergency or ambulance care in the past year**

	Received hospital, ambulance or emergency care in the past year (%)	
	No	Yes
<b>Demographics</b>		
Age (median years)	27	28
Sex (% male)	58	61
Non-Australian Born	24	13*
Unemployed	59	65
Net weekly income (median, \$)	250	240
<b>Methamphetamine use in the past year</b>		
Dependent	52	63
Injecting	57	74**
Used more than weekly	58	68
<b>Injected heroin in the past year</b>	30	53***
<b>Disability in physical functioning</b>	38	62***
<b>Disability in mental functioning<sup>a</sup></b>	42	58**

<sup>a</sup> Moderate or severe disability

\*p<.05, \*\*p<.01, \*\*\*p<.001

**Table 4. Factors associated with hospital, ambulance or emergency service utilisation during the past year**

	Odds Ratio	95% Confidence Interval	P Value
Disability in physical functioning	2.50	1.53 - 4.08	0.000
Disability in mental functioning <sup>a</sup>	1.41	0.86-2.31	0.18
Heroin injection in past year	2.25	1.37 - 3.72	0.001
Born outside of Australia	0.51	0.26 - 0.98	0.042

<sup>a</sup> Moderate or severe disability

### 3.4 General practice

Attendance at general practitioners was common, with 88% of participants having visited a general practitioner in the past year. Frequency of general practitioner visits was also high. Although most of the participants who had been to see a general practitioner in the past month reported having done once (46%) or twice (32%), one in five (21%) had been to see a general practitioner three or more times in the past month.

Fifteen per cent of participants had received help for their methamphetamine use from a general practitioner during the past year. Half of these participants had received help for their methamphetamine use on one occasion only, while 21% had received help on two occasions, and 29% reported having received help on three or more occasions.

#### 3.4.1 Factors predicting the use of general practitioners in the past month

Having been to a general practitioner in the past month was associated with disability in physical functioning, and moderate to severe disability in mental functioning. Participants who had attended a general practitioner tended to be older, unemployed, heavy methamphetamine users who were concurrent heroin injectors (Table 5). After adjusting for disability in physical and mental functioning, heroin injectors were two to three times more likely to have attended a general practitioner than non-heroin injectors (Table 6), while there was no longer a significant association between age or unemployment and general practitioner attendance.

**Table 5. Characteristics of participants who received care from a general practitioner in the past month**

	General practitioner attendance in past month (%)	
	No	Yes
<b>Demographics</b>		
Age (median years)	26	30***
Sex (% male)	65	55
Non-Australian Born	18	22
Unemployed (%)	54	68*
Net weekly income (median; \$)	228	247
<b>Methamphetamine use in the past year</b>		
Dependent	49	62*
Injecting	55	71**
Used more than weekly	56	68*
Injected heroin in the past year	25	51***
Disability in physical functioning	35	58***
Disability in mental functioning <sup>a</sup>	36	58***

<sup>a</sup> Moderate or severe disability

\*p < 0.05; \*\*p < 0.01; \*\*\*p < 0.001

**Table 6. Factors associated with general practitioner utilisation in the past month**

	Odds Ratio	95% Confidence Interval	P Value
<b>Disability in physical functioning</b>	<b>2.28</b>	<b>1.41 - 3.69</b>	<b>0.001</b>
<b>Disability in mental health functioning<sup>a</sup></b>	<b>1.93</b>	<b>1.19 - 3.14</b>	<b>0.008</b>
<b>Heroin injection in past year</b>	<b>2.66</b>	<b>1.61 - 4.40</b>	<b>0.000</b>

<sup>a</sup> Moderate or severe disability

### 3.5 Drug treatment

#### 3.5.1 Treatment for any drug type

Over one third (39%) of participants had received treatment for drug use in the past year; however, only ten percent had received drug treatment for their methamphetamine use during this time. The majority of participants (69%) reported that heroin was the main drug for which they sought help on their last treatment occasion.

Participants who had received drug treatment in the previous year usually had one (65%) or two (22%) distinct episodes of drug treatment. A small proportion of the drug treatment attendees (12%) reported three or more episodes of drug treatment in the past year.

Drug treatment attendance in the past year (for any drug) was associated with older age, unemployment, heavier methamphetamine use, recent heroin injection, as well as moderate or severe disability in physical and mental functioning (Table 7). After adjusting for disability in physical and mental functioning, both injecting methamphetamine and injecting heroin remained significantly predictive of having received drug treatment (Table 8). Other demographic factors were no longer significantly related to drug treatment attendance, although there was a non-significant trend toward employment being related to a lower likelihood of having received treatment (OR = 0.59, CI 0.31 – 1.12, p = 0.103).



**Table 7. Characteristics of participants who had received drug treatment in the past year**

	<b>Received drug treatment in past year (%)</b>	
	No	Yes
<b>Demographics</b>		
Age (median years)	25	32***
Sex (% male)	61	57
Non-Australian Born	21	17
Unemployed	50	79***
Weekly income (median, \$)	253	240
<b>Methamphetamine use in the past year</b>		
Dependent	50	65**
Injecting	46	92***
Used more than weekly	59	67
Injected heroin in the past year (%)	19	70***
Disability in physical functioning <sup>a</sup>	13	32***
Disability in mental functioning <sup>a</sup>	39	61***

\*p < 0.05; \*\*p < 0.01; \*\*\*p < 0.001

<sup>a</sup> Moderate or severe disability

**Table 8. Factors associated with having received drug treatment in the past year**

	<b>Odds Ratio</b>	<b>95% Confidence Interval</b>	<b>P Value</b>
<b>Disability physical functioning<sup>a</sup></b>	<b>2.41</b>	<b>1.22 - 4.78</b>	<b>0.012</b>
<b>Disability in mental functioning<sup>a</sup></b>	<b>1.57</b>	<b>0.88 - 2.78</b>	<b>0.125</b>
<b>Methamphetamine injection in past year</b>	<b>5.19</b>	<b>2.38 - 11.32</b>	<b>0.000</b>
<b>Heroin injection in past year</b>	<b>5.64</b>	<b>3.08 - 10.33</b>	<b>0.000</b>

<sup>a</sup> Moderate or severe disability

### 3.5.2 Treatment for methamphetamine use

The only factors related to having received treatment for methamphetamine use per se in the past year were being dependent on methamphetamine (OR = 8.1, CI 2.6-29.0,  $p = 0.001$ ) and being currently unemployed (OR = 2.5, CI 1.0-6.5,  $p = 0.052$ ). Because only 10% of the sample had received methamphetamine treatment in the past year, we also examined predictors of having ever received treatment for methamphetamine use (Table 9).

As would be expected, methamphetamine dependence and other indicators of heavy methamphetamine use were strongly related to having a history of methamphetamine treatment. Participants that had ever received methamphetamine treatment were also likely to be older, unemployed methamphetamine users who had a history of heroin injection and were born in Australia (Table 9). After adjusting for dependence on methamphetamine, participants who were born outside of Australia were less than half as likely to have ever received treatment for their methamphetamine use, while participants who had ever injected heroin were over twice as likely to have received methamphetamine treatment compared with participants who had no history of heroin injection (Table 10). There was also a non-significant trend for employed participants to be less likely to have ever received treatment for methamphetamine use than their unemployed counterparts (OR = 0.56, CI = 0.29 – 1.06,  $p = 0.074$ ).

**Table 9. Characteristics of participants who had received treatment for methamphetamine use**

	Received drug treatment for methamphetamine			
	Past year		Ever	
	No n=278	Yes n=31	No n=233	Yes n=77
Demographics				
Age (median years)	27.5	30	27	30.5*
Sex (% male)	58	68	57	66
Non-Australian Born	21	13	23	10*
Unemployed	59	81*	56	77**
Weekly income	242	240	250	230
Methamphetamine use in the past year				
Dependent	52	90***	50	74***
Injecting	62	77	58	82***
Used more than weekly	61	71	56	81***
Injected heroin				
Ever	59	68	56	77**
Past year	39	39	36	48
Disability in physical functioning	47	55	45	53
Disability in mental functioning	67	68	65	74

\* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$

**Table 10. Factors associated with having ever received treatment for methamphetamine use**

	Odds Ratio	95% Confidence Interval	P Value
Methamphetamine dependent	2.52	1.40 - 4.53	0.002
Ever injected heroin	2.49	1.36 - 4.57	0.003
Born outside of Australia	0.37	0.16 - 0.83	0.016

### 3.6 Other health services

In addition to the health services already discussed in the previous sections, approximately one quarter of the sample (28%) had consulted with other health professionals during the past month. The most common types of other health professionals visited were dentists, reported by 33% of those who had seen another health professional, followed by counsellors or psychologists, psychiatrists, and optometrists (15%, 14% and 10% of participants who had visited other health professionals respectively). Other health professionals visited are shown in Table 11.

**Table 11. Proportion of methamphetamine users who had utilised other professional health services in the past month**

Type of health professional	Per cent
Dentist	9
Counsellor/psychologist	4
Psychiatrist	4
Optometrist	3
Nurse	2
Physiotherapist	1
Chiropractor	1
Gynaecologist	1
Liver specialist	1
Acupuncturist	1
Naturopath	1
Massage therapist	1

## 3.7 Purchase of medications

### 3.7.1 Prescription medication

Almost half the sample (41%) had bought prescription medication from a pharmacy in the previous month. Although most of these participants had purchased only one or two packets of prescription medication in the past month (46% and 25% respectively), almost one third (30%) had bought three or more packets during this time.

Benzodiazepines were by far the most commonly purchased drug type, being purchased by almost half (45%) of those who had bought prescription medication in the past month. Antidepressants and narcotic analgesics were the next most commonly purchased prescription medication, reported by 18% and 12% of participants who purchased prescription medication respectively. Less commonly purchased medications can be seen in Table 12.

**Table 12. Types of medication purchased in the previous month**

	Whole sample (%)	Of those who purchased medication (%)
Prescription medication		
Benzodiazepines	18	45
Antidepressants	7	18
Narcotic analgesics	5	12
Antibiotics	3	8
Asthma medication	3	8
Anti-psychotic medication	3	7
Any prescription medication	41	
Non-prescription medication		
Analgesics	26	71
Cold and flu preparations	7	18
Vitamins	2	5
Antihistamines	2	4
Sedative hypnotics	1	4
Anti-inflammatory drugs	1	4
Eye drops	1	3
Any non-prescription medication	36	

### 3.7.2 Factors associated with the purchase of prescription medication

Participants who had purchased prescription medication in the past month were significantly older, were more likely to be female, and had a higher weekly legal income than those who had not purchased prescription medication in that time. Purchasers were also more likely to be methamphetamine dependent, to nominate injection as their main route of methamphetamine administration and to be frequent methamphetamine users.

Further, those who had purchased prescription medication in the past month had significantly more disability in their physical and mental functioning (Table 13).

After adjusting for disability in physical and mental functioning, participants on a net income below AU\$200 per week were less than half as likely to have purchased prescription medication, and those aged over 30 years were almost twice as likely to have purchased prescription medication than younger participants. In addition, there was a trend for females to be more likely than males to have purchased prescription medication, and a weak relationship between methamphetamine dependence and the purchasing of prescription medication, although this was not statistically significant (Table 14).

**Table 13. Characteristics of participants who had purchased prescription medication in the past month**

	Purchased prescription medication in past month (%)	
	No	Yes
Demographics		
Age (median years)	26	31**
Sex (% male)	65	52*
Non-Australian born	22	17
Unemployed (%)	58	66
Weekly income (median, \$)	215	255.5*
Methamphetamine use in the past year		
Dependent	48	67**
Injector	58	71**
Used more than weekly	58	69*
Injected heroin in past year (%)	35	45
Disability in physical functioning	40	57**
Disability in mental functioning	59	79***

\*p < 0.05; \*\*p < 0.01; \*\*\*p < 0.001

**Table 14. Factors associated with purchasing prescription medication in the past month**

	Odds Ratio	95% Confidence Interval	P Value
Disability in physical functioning	1.37	0.82 – 2.29	0.233
Disability in mental functioning	2.34	1.27 – 3.95	0.006
Aged 30 years and older	1.92	1.14 – 3.22	0.014
Low income	0.41	0.23 - 0.73	0.002
Female	1.66	1.00 – 2.77	0.051
Dependent on methamphetamine	1.57	0.93 - 2.65	0.093

### **3.7.3 Non-prescription medication**

Over one third of the sample (36%) had bought non-prescription medication in the month preceding the survey. Almost half (47%) of these participants had purchased more than one packet of non-prescription medication in this time. Analgesics were by far the most common type of non-prescription medication bought (71% of those who purchased non-prescription medication), followed by cold and flu preparations. Less common types of non-prescription medication can be seen in Table 12.

## 4 DISCUSSION

The results of the present study show that methamphetamine users have a high level of contact with health services, with over nine in ten participants having used at least one health care service in the past year. The level of general practitioner utilisation in the current study was particularly high, and similar to that found among heroin users in Sydney (Darke et al., 2003). Specifically, 53% of participants in the present study had been to see a general practitioner in the past month, compared to 60% of heroin users surveyed by Darke et al. However, the utilisation of hospitals, emergency departments and ambulances was lower among methamphetamine users than among heroin users. Darke et al. found that 11% of heroin users had received care from an ambulance or emergency service in the past month in comparison with 2% and 4% of methamphetamine users in the current study respectively. Similarly, Darke et al. found that 8% of heroin users had been admitted to hospital in the past month in comparison with 1% of the methamphetamine users that we surveyed. The greater use of emergency, ambulance and hospital services by heroin users is likely to be due to heroin overdose.

The results of the current study fit with the literature on health service utilisation among drug users, in that methamphetamine users were found to be heavier users of emergency departments than the general population. Specifically, 31% of methamphetamine users had received care from an emergency department within the past year, in comparison with 14% of young adults in NSW (NSW Health Department, 2004). The high level of emergency department utilisation among methamphetamine users is likely to be due in part to urgent medical needs among this population (e.g. drug overdose). However, methamphetamine users may also prefer to use emergency departments than other types of health services due to their greater accessibility. Emergency departments may be more accessible to drug users because they a free service, do not require appointments, have long opening hours, and offer a greater level of anonymity than other types of health services. According to McGeary and French (2000), vulnerable populations such as drug users tend to access health care through the most easily accessible services.

More than a third of methamphetamine users (39%) had received drug treatment in the past year for a drug or alcohol problem; however, only ten percent had received treatment for methamphetamine use. The finding that a large proportion of methamphetamine users receive drug and alcohol treatment for other drugs of concern (typically heroin) indicates that this population are not unlikely to have contact with drug treatment services, but that they are unlikely to receive treatment for their methamphetamine use per se. This finding could reflect a lack of treatment options for methamphetamine use in Sydney, and is consistent with the dearth of evidence around effective treatment for methamphetamine use (Baker, Lee, & Jenner, 2004) and the perception that traditional drug treatment approaches are inappropriate for methamphetamine-related problems (Klee & Morris, 1994; Wright et al., 1999). Alternatively, drug users might feel less impetus to seek treatment for methamphetamine than for heroin because methamphetamine use is less costly than heroin use, and is less debilitating in terms of physical withdrawal and its impact on day-to-day functioning. Having said this, it is important to note that over half of methamphetamine users surveyed in the current study were dependent on methamphetamine and would therefore be likely to benefit from effective drug treatment.

One of the major findings from the present study was that methamphetamine users who were also injecting heroin had the highest levels of contact with health services. Methamphetamine users who were concurrent heroin injectors were at least twice as likely as their non-heroin injecting counterparts to have utilised both general health services and specialised drug treatment services. The over-representation of heroin users attending health services is likely to reflect their greater need for health care, including specific urgent medical problems such as heroin overdose. However, higher health service utilisation among heroin injectors is also likely to reflect the availability of services tailored toward opioid dependence in Sydney, and a possible gap in service provision for methamphetamine users who are not concurrent heroin injectors.

Dependent methamphetamine users who are not concurrent heroin injectors are likely to be more difficult to access and engage in treatment or other health services because of their low levels of contact with the health system. Based on the current sample of methamphetamine users, just over half (55%) of dependent methamphetamine users had not injected heroin in the past year, and a large proportion (60%) of these dependent methamphetamine users were injecting drug users. General practitioners seem to be an obvious point through which we could access this population, because almost all methamphetamine users had contact with general practitioners. Information and education on methamphetamine use, harms and preventative care (e.g. testing for blood-borne viruses) could be provided through general practitioner services, in addition to referring methamphetamine users to appropriate drug treatment services.

Purchasing prescription medication was particularly common among the current sample of methamphetamine users, with 41% of participants having purchased prescription medication in the preceding month. This is similar to the level of prescription medication purchase among heroin users in Sydney surveyed by Darke et al (2003). In line with Darke et al.'s results, benzodiazepines, antidepressants and narcotic analgesics were the most commonly purchased prescription medications. While it would seem likely that similarities in medication use between the two samples would be due to the number of heroin users in the current sample, this was not found to be the case. Prescription medication use was more strongly related to heavy methamphetamine use than to heroin use, and was also significantly associated with poor mental health and sociodemographic factors. It is possible that methamphetamine users were taking psychotropic medications to alleviate the side effects of methamphetamine use, and/or treat pre-existing mental health conditions.

Methamphetamine users who were on a particularly low income (below AU\$200 per week) were half as likely to obtain prescription medication than their more financial counterparts, even after adjusting for disability in mental and physical health, drug use, and demographic factors related to obtaining prescription medication. This finding is consistent with previous research indicating that low income tends to be associated with lower health service utilisation when health care is not freely available (Andrulis, 1998; Dunlop et al., 2000; Fiscella et al., 2000; Turrell et al., 2004), and suggests that drug users on low incomes may not be able to afford prescription medications. Based on the current study it cannot be determined whether income would affect methamphetamine users' ability to comply with prescribed medication for specific health problems, or whether this finding reflects a degree of self-medication or misuse of prescription psychotropic drugs among more financial drug users.



A common conception of health service utilisation is that the use of health services is a function of predisposing factors, enabling factors and need factors (Aday & Andersen, 1974; Andersen, 1995). Need factors were the most significant predictors of health service utilisation in the present study, with disability and heavy drug use being strongly predictive of health service utilisation. The only predisposing factor that was predictive of health service utilisation was country of birth. Methamphetamine users who were born outside of Australia were less likely than their Australian born peers to have used hospitals, emergency departments or ambulances in the past year, or to have ever received treatment for their methamphetamine use. A similar association between country of birth and the use of health services has been found in past research, with individuals from minority groups typically less likely to use health services than those from the majority population (Doescher et al., 2000; Fiscella et al., 2000; O'Connor & Haley, 2003; Scott et al., 2003). This is likely to be due to a combination of cultural and language barriers.

Overall, it appears that methamphetamine users have a significant impact on Australia's health system, particularly on emergency departments and general practitioners. However, the impact of methamphetamine use on health services appears to be less than that associated with heroin use. Methamphetamine users had lower levels of ambulance, emergency and hospital service utilisation than seen among heroin users, and much of the health service utilisation among methamphetamine users was attributable to heroin injection. Lower levels of health service utilisation among methamphetamine users compared to heroin users is likely to be due to the relative harms associated with each drug, particularly the greater risk of fatal overdose from heroin use (Degenhardt, Conroy, Gilmour, & Hall, 2005; Hall & Darke, 1998). Dependent methamphetamine users who are not concurrent heroin injectors are a less visible subgroup of the methamphetamine using population, and are likely to be more difficult to access and engage in treatment or other health services because they have low levels of contact with the health system. Further research is needed to examine health care needs among this segment of the methamphetamine using population and reasons why they do not access services.

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## 6 APPENDIX

### Drug treatment

Have you received treatment for your drug use from a drug treatment centre in the **past year**?

No.....0      Go to X  
Yes.....1

How many different times have you sought help for your drug use from a drug treatment centre in the past year?\_\_\_\_\_ (i.e. separate or non-continuous treatment episodes)

When did you go to treatment: was it in the past six months; in the past month?

In past month..... 1  
In past six months..... 2  
More than six months..... 3

What was the main drug that you sought help for on this occasion?

(Prompt: Was it methamphetamine, or was it another drug?)

Methamphetamine..... 1  
Heroin ..... 2  
Cocaine ..... 3  
Ecstasy ..... 4  
Cannabis ..... 5  
Methadone..... 6  
Other opiates..... 7  
Benzodiazepines ..... 8  
Alcohol..... 9  
Other ..... 10      Specify\_\_\_\_\_

Did you attend any other treatment centres (other than the one just described) in the **past year** specifically to get help for your drug use?

No.....0 Go to X  
Yes..... 1

For each DIFFERENT centre attended in the past year fill in the following sections (assess retrospectively from next most recent treatment episode):

When did you go to treatment: was it in the past six months; in the past month?

In past month..... 1  
In past six months..... 2  
More than six months..... 3

Was methamphetamine the main drug for which participant sought treatment?

No.....0  
Yes..... 1

Complete for each treatment centre attended in past year.

## Hospital

Have you been admitted to a hospital or psychiatric unit in the **past year**?

- No..... 0      Go to X  
Yes..... 1

How many times have you been admitted to hospital or psychiatric unit in the past year?

No. \_\_\_\_\_

Type of facility

- Psychiatric facility..... 1  
General ward..... 2  
Other..... 3      Specify \_\_\_\_\_

How did you get taken to hospital on this occasion?

- Self referred..... 1  
Friend or family member..... 2  
General health care worker..... 3  
Ambulance..... 4  
Police..... 5  
Other..... 6      Specify \_\_\_\_\_

When did you go to hospital: was it in the past six months; in the past month?

(Code according to the time-frame that they left hospital)

- In past month..... 1  
In past six months..... 2  
More than six months..... 3

Was your methamphetamine use (including methamphetamine psychosis) the MAIN problem you received help for on this occasion?

- No..... 0      Ask next question  
Yes, methamphetamine psychosis..... 1      Go to X  
Yes, other methamphetamine-related problem..... 2      Go to X

What was the main problem for which you sought help?

Describe:

.....  
.....  
.....

I want to ask you about the other times in the past year that you went to hospital or to a psychiatric unit (other than the one just described)

For each hospital admission in past year (assess retrospectively from next most recent occasion):

*Hospital admit 2.*

Type of facility:

- Psychiatric facility..... 1



General ward..... 2  
Other ..... 3      Specify \_\_\_\_\_

How did you get taken to hospital on this occasion?

Self referred..... 1  
Friend or family member ..... 2  
General health care worker ..... 3  
Ambulance..... 4  
Police ..... 5  
Other ..... 6      Specify \_\_\_\_\_

When did you go to hospital: was it in the past six months; in the past month?  
(Code according to the time-frame that they left hospital)

In past month..... 1  
In past six months..... 2  
More than six months..... 3

Was your methamphetamine use (including methamphetamine psychosis) the MAIN  
problem you received help for on this occasion?

No..... 0  
Yes, methamphetamine psychosis ..... 1  
Yes, other methamphetamine-related problem ..... 2

Complete for each hospital admission in past year.

## Ambulance and Emergency

Have you received help from [an ambulance/emergency department] in the past year?

No.....0      Go to X

Yes.....1

How many different times did you receive help from/visit [an ambulance/emergency department] in the past year? \_\_\_\_\_

How many of these times were because of your methamphetamine use? \_\_\_\_\_

In the last 4 weeks, how many times you have received help from/visited [an ambulance/emergency department]? \_\_\_\_\_

*If participant has used an ambulance or emergency department in the past year, ask:*

How many of these times did you receive help for your methamphetamine or speed use? \_\_\_\_\_

Last time you received help from [an ambulance/emergency department] (in the last year), what did you receive help for (e.g. describe symptoms treated and/or treatment protocol provided)?

Describe:

## General practice

Have you visited a general practitioner in the past year?

No.....0      Go to X

Yes.....1

Have you received help for your methamphetamine or speed use from a general practitioner in the past year?

No.....0

Yes.....1

In the last 4 weeks, how many times have you visited **GPs**? \_\_\_\_\_

*If participant has visited GP in past 4 weeks, ask:*

How many of these times did you receive help for your methamphetamine use? \_\_\_\_\_

### **Other health professionals**

In the last 4 weeks, how many times have you visited **other health professionals** (e.g. chiropractor, naturopath, community health nurse, physiotherapist, specialist doctor, optometrist, dentist, podiatrist)?

(Exclude health professionals already included under drug treatment and hospital care)

No. \_\_\_\_\_

List other health professionals visited in past 4 weeks

i.

---

ii.

---

iii.

---

## Medications

In the last 4 weeks, did you buy any prescription medications from a pharmacy?

No..... 0

Yes..... 1

Brand name

No. packets purchased in past 4 weeks:

i. \_\_\_\_\_

ii. \_\_\_\_\_

iii. \_\_\_\_\_

iv. \_\_\_\_\_

In the last 4 weeks, did you buy any **non-prescription (over the counter) medications** from a pharmacy or supermarket (that is, NOT prescribed for you by a doctor)?

No..... 0

Yes..... 1

Brand name

No. packets purchased in past 4 weeks:

i. \_\_\_\_\_

ii. \_\_\_\_\_

iii. \_\_\_\_\_

iv. \_\_\_\_\_