

1-1-2011

## **Prescription drug use among detainees: Prevalence, sources and links to crime**

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McGregor, C., Gately, N. J., & Fleming, J. R. (2011). Prescription drug use among detainees: Prevalence, sources and links to crime. *Trends and Issues in Crime and Criminal Justice*, 423(August), 1-6. Available [here](#)

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# Trends & issues

in crime and criminal justice



Australian Government  
Australian Institute of Criminology

No. 423 August 2011

**Foreword** | *Concern regarding the diversion and non-medical use of prescription pharmaceuticals continues to grow as anecdotal evidence and other research points to a sizeable increase in the illegal market for such drugs. Estimating the prevalence of illegal use and understanding how pharmaceutical drugs come to be traded in the illegal drug market remain key research priorities for policymakers and practitioners in both the public health and law enforcement sectors.*

*This report is the first of its kind in Australia to examine the self-reported use of illicit pharmaceuticals among a sample of police detainees surveyed as part of the Australian Institute of Criminology's Drug Use Monitoring in Australia (DUMA) program. In all, 986 detainees were interviewed, of which 19 percent reported having recently used pharmaceutical drugs for non-medical purposes in the past 12 months—nearly five times as high as reported by the general Australian population, once again highlighting the value of conducting drug use research among criminal justice populations. In addition, this paper provides policymakers with valuable information about the reasons for use and the methods by which pharmaceuticals are typically accessed for non-medical purposes.*

Adam Tomison  
Director

## Prescription drug use among detainees: Prevalence, sources and links to crime

Catherine McGregor, Natalie Gately and Jennifer Fleming

The increased diversion and non-medical use of prescribed medications has raised concerns internationally and in Australia (DCPC 2007). The harms associated with non-medical prescription drug use, notably dependence and overdose, are well-documented (Loxley 2007; McGregor et al. 2002). However, the links between illicit drug use, including illicit or non-medical prescription drug use, and crime are less clear. While illicit drug use is substantially higher in offender populations compared with the general community (Adams et al. 2008; AIHW 2008), direct causal links between specific drugs, including prescription drugs, and specific offences have not been clearly identified (McKetin et al. 2006). Marked changes in illicit drug use patterns in recent years include a decrease in heroin use and an increase in non-medical prescription drug use (Black et al. 2008; DCPC 2007; Zarocostas 2009).

In Australia, the most commonly diverted pharmaceuticals for illicit use are benzodiazepines and opioids (Dobbin 1998). The rise in non-medical pharmaceutical opioid use is thought to be in response to the decrease in heroin availability that began around the end of 2000. Despite this problem, objective information on the extent of the diversion and non-medical use of pharmaceuticals in Australia is sparse. A number of methods are used to gain access to prescribed medications including presenting inaccurate symptoms to health professionals, consulting with multiple doctors, poor prescribing practices by medical practitioners, self-prescribing by health practitioners, theft of the medication from surgeries or pharmacies, altering and forging prescriptions, and purchasing over the internet (DCPC 2007). A focus group study and review of illicit pharmaceutical markets in the United States identified the diversity of sources of illicit pharmaceuticals including drug tourism, direct purchases on the street and in nightclubs, and theft from elderly relatives (Inciardi et al. 2007). According to this review, prescription drugs are common targets of residential burglaries and home invasions.

The major source of information on prescription drug use in the Australian community is the *National Drug Strategy Household Survey*, a triennial survey that measures drug use trends in a random sample of Australian households. The 2007 *National Drug Strategy Household Survey* surveyed over 23,000 households and found that after cannabis (9%), non-medical pharmaceutical use (4%) was the most common illicit drug use category reported for the previous 12 months (AIHW 2008). Painkillers/analgesics (3%) followed by tranquillisers/sleeping pills (1%) were the most common types of pharmaceuticals used. Over half (53%) of those who had recently (in the previous 12 months) used painkillers most frequently obtained them from a shop or retail outlet, while recent users of tranquillisers most commonly nominated a ‘friend or acquaintance’ as their source of supply (40%). A national study of injecting drug users in Australia (n=909) showed that for 18 percent of the sample, morphine was the pharmaceutical opioid injected most often in the month prior to interview. Ten percent had injected pharmaceutical stimulants, including dexamphetamine and methylphenidate, and nine percent had injected benzodiazepines in the previous six months (Black et al. 2008).

There are few studies of non-medical prescription drug use by offenders. The Drug Use Monitoring in Australia (DUMA) study of drug use among police detainees showed that during 2008, around one-quarter of benzodiazepine users reported non-medical benzodiazepine use in the previous 30 days. Non-medical use of the pharmaceutical opioid methadone was identified in 28 percent of detainees testing positive for methadone, while non-medical use of the pharmaceutical opioid buprenorphine was identified in 36 percent of detainees testing positive for buprenorphine (Gaffney et al. 2010).

Prompted by an apparent increase in the availability of pharmaceuticals in illicit drug markets identified by police seizures and an increase in detainees in the watch house having prescription medicine in their possession, WA Police approached the WA DUMA project group to develop a method

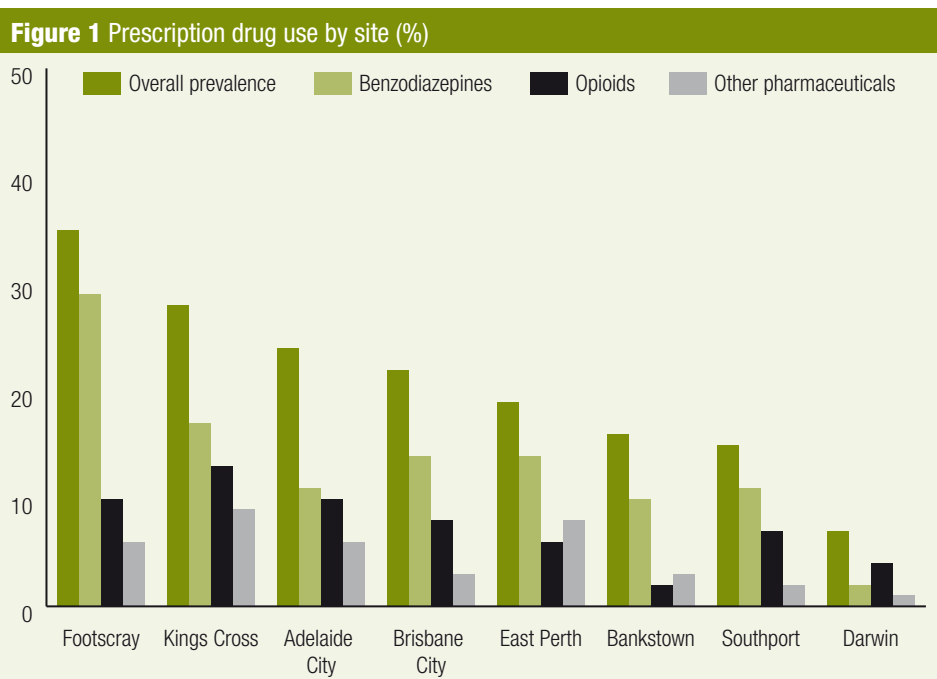
of investigating the extent of non-medical prescription drug use among detainees. They planned to use the data to describe current trends in the illegal possession of legal drugs from a police perspective, with an aim to clarify and develop the role of policing in this area. This report presents the results of the DUMA prescription drugs addendum developed in response to these concerns.

### Methodology

The DUMA program is designed to collect demographic, lifetime and current substance use history and criminal justice-related information on a quarterly basis from those recently detained by the police (see Makkai 1999 for a full explanation of the project methodology). Self-reported drug use is validated by the collection of a urine sample. The core DUMA questionnaire has remained consistent over time, allowing for year-by-year comparisons. The study design also allows for the inclusion of a one to two page addendum on key topical issues each quarter. The prescription drugs addendum was included in the DUMA data collection during the first quarter of 2009 and was designed to assess the prevalence of non-medical prescription drug use among police detainees. Secondary aims were to assess differences between users and non-users of prescription drugs and to

ascertain the main methods of obtaining access to these medications.

The prescription drug use addendum was developed as a collaborative effort between Edith Cowan University and the Australian Institute of Criminology and was piloted at three sites in the fourth quarter of 2008. Questions were developed to examine the types of pharmaceuticals used, the frequency of use, the methods of obtaining pharmaceuticals and the reasons for non-medical use of prescribed drugs. Identifying appropriate terminology was particularly challenging as it was necessary for the respondent to recognise the difference between appropriate medical use and use that was not intended by the prescribing doctor even when the medication had been legally obtained. The full addendum was administered nationally in the first quarter collection period of 2009. Eight sites—Footscray, Kings Cross, Bankstown, Adelaide City, East Perth, Brisbane City, Southport and Darwin—participated in the study. A total of 1,614 detainees completed the core DUMA questionnaire in the first quarter 2009. Of these, 986 (61%) also completed the addendum. This group of 986 detainees comprised the study sample. All references to prescribed drug use in this report refer to non-medical use.



## Results

Of the 986 respondents who completed the addendum, almost one in five detainees (19%) reported non-medical prescription drug use in the previous 12 months. Proportionally, Footscray, Kings Cross, Adelaide City and Brisbane City sites had the highest prevalence of non-medical prescription drug use. Prevalence at the

East Perth, Southport and Bankstown sites was between 10 and 20 percent, while in Darwin the prevalence was less than 10 percent (see Table 1).

A breakdown of drug types by site shows that proportionally, Footscray had the highest prevalence of benzodiazepine use, markedly higher than the site with the next highest prevalence, Kings Cross which had

the highest prevalence of opioid use (see Figure 1). It should be noted however that sample sizes for these sites were relatively small.

Across all sites, of those detainees who reported prescription drug use, benzodiazepines (n=124; 65%) were the type most commonly used in the previous 12 months (see Table 2).

Of the benzodiazepines, diazepam was used by two-fifths and alprazolam by around one-quarter of pharmaceutical users. The next most commonly used type was opioids, used by over one-third (n=70; 37%) of prescribed drug users in the previous 12 months (more than 1 opioid could be nominated).

Other drug types such as antipsychotics and antidepressants were used by less than 10 percent of detainees who had reported pharmaceutical use in the previous 12 months.

	PDU <sup>a</sup> n(%)	No PDU n(%)	Total (n)
Footscray	18(35)	34(65)	52
Kings Cross	13(28)	34(72)	47
Adelaide	31(24)	101(77)	132
Brisbane	45(22)	161(78)	206
East Perth	40(19)	176(82)	216
Southport	23(18)	133(85)	156
Bankstown	14(16)	73(84)	87
Darwin	6(7)	84(93)	90
Total	190(19)	796(81)	986

a: Prescription drug use

Pharmaceutical	n <sup>a</sup>	% <sup>b</sup>
<b>Benzodiazepines</b>		
Diazepam (eg Valium, Ducene)	76	40.0
Alprazolam (eg Xanax, Kalma)	47	24.7
Oxazepam (eg Serepax, Murelax)	17	8.9
Temazepam (eg Normison, Temaze)	8	4.2
Other benzodiazepine	7	3.7
Nitrazepam (eg Mogadon, Alodorm)	5	2.6
Clonazepam (eg Klonopin)	5	2.6
Flunitrazepam (eg Rohypnol)	3	1.6
<b>Opioids</b>		
Morphine	35	18.4
Unspecified opioids	24	12.6
Buprenorphine (eg Subutex)	12	6.3
Methadone	10	5.3
Codeine	6	3.2
<b>Other pharmaceuticals</b>		
Miscellaneous	17	8.9
Antipsychotics	16	8.4
Dexamphetamine	14	7.4
Antidepressants	2	1.1
Hallucinogens	1	0.5

a: More than 1 substance could be nominated

b: Base is those who used prescription drugs in the previous 12 months less 1 missing case (n=189)

## Sample characteristics

Prescription drug users were more likely than non-users to be unemployed, derive their income from welfare or benefits, consider themselves drug dependent, be currently on a drug-related charge and have been arrested or imprisoned in the previous 12 months (see Table 3).

Of the 190 detainees who reported prescription drug use in the previous 12 months, 26 (14%) used daily, 53 (28%) used once a week or more, 28 (15%) used monthly, 28 (15%) used every few months and 54 (29%) used once or twice a year (1 missing case).

Females were significantly more likely than males to have used prescription drugs for non-medical purposes. Over one-quarter (27%) of females in the sample had taken pharmaceuticals for non-medical purposes in the previous 12 months compared to 18 percent of males ( $\chi^2=6.97$ , df 1,  $p=.008$ ).

## Reasons

Qualitative analysis of the reasons given for using pharmaceuticals identified five themes. The most common reason for use was for the relief of negative emotional states such as anxiety and for the relief of

**Table 3** Sample characteristics

	No PDU (n=796)	PDU (n=190)	Total sample (n=986)
Age, median years (range)	28(16–79)	27(16–55)*	28(16–79)
Currently in a relationship n(%)	241(30)	50(26)	291(30)
Completed year 10 or less n(%)	360(45)	99(52)	459(47)
Unemployed n(%)	431(54)	145(76)***	410(42)
Income from welfare/benefits n(%)	393(49)	137(73)***	530(54)
Drug dependent n(%)	249(36)	133(70)***	382(39) <sup>a</sup>
Currently on drugs-related charge n(%)	85(11)	34(18)**	119(12)
Times arrested in past year, median (range)	2(1–80)	4(1–100)***	3(1–100)
In prison in past year n(%)	132(17)	61(33)***	193(20)

a: n=880

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ **Table 4** Drug used in combination with pharmaceuticals

Drug combined with PD	n <sup>a</sup>	%
Alcohol	77	57.5
Cannabis	41	30.6
Heroin	38	28.4
Methamphetamine	15	11.2
Amphetamines	13	9.7
Methadone	7	5.2
Morphine	4	3.0
Cocaine	2	1.5
MDMA	0	0.0

a: More than one drug could be nominated

insomnia (41%). Over one-quarter of those who had taken pharmaceuticals in the previous 12 months did so for their positive effects such as getting 'high' (30%). Managing drug withdrawal symptoms or drug substitution was nominated by 16 percent, while eight percent cited curiosity or because the drugs were available. Pain relief was cited by five percent of respondents.

### Drugs used in combination with pharmaceuticals

Of the 190 detainees who had taken pharmaceuticals for non-medical purposes in the previous 12 months, 134 (71%) had used them in combination with other substances (see Table 4).

Alcohol was the most common substance combined with pharmaceuticals; combined use was nominated by over half of users. Cannabis was nominated by almost one-third and heroin by over one-quarter. Around one-fifth (21%) nominated

meth/amphetamine as having been used in combination with pharmaceuticals in the previous 12 months.

### Scripts obtained from doctors

Of the 189 pharmaceutical users who provided data, 39 (21%) had used a script in their own name written by a doctor to obtain prescription drugs. Of these 39 respondents, the majority (n=26; 67%) obtained the script from their usual doctor, eight (21%) went to a new doctor and five (13%) went to a different doctor each time. This latter group went to between three and six different doctors each time. One-third (n=13; 33%) had deliberately provided inaccurate information to obtain a script. Of these 39 respondents, 38 provided information on where they usually got their scripts filled. The majority (n=31; 82%) went to their usual pharmacy; the remaining seven (18%) respondents went to a different pharmacy to have their scripts filled.

Only five respondents provided information on the number of different pharmacies used. These respondents nominated between two and 10 pharmacies, while one respondent went to over 20 pharmacies to have their scripts filled.

### Other sources of scripts

Only two respondents had obtained a script that was not from a doctor; one had forged their own script, the other had taken it from a doctor's surgery. Of these, one respondent had the script filled at their usual pharmacy and the other had gone to a different pharmacy.

### Scripts written in someone else's name

Of those who had used prescription drugs in the previous 12 months, 20 (11%) had obtained them using a script written in someone else's name. Of these, 19 respondents had used a script written for a friend or family member. One respondent had borrowed a Medicare card, one had bought it from a pharmaceutical dealer and one had bought a Medicare card. No respondents had stolen a Medicare card.

Of the 20 respondents who had obtained prescription drugs using a script written in someone else's name, information on where the scripts were filled was provided by 19 respondents. Nine (47%) got someone else to go to a pharmacy to fill the script, seven (37%) went to their usual pharmacy and three (16%) went to a different pharmacy each time to fill the script.

### Other ways of obtaining pharmaceuticals

Of the 189 detainees who provided information on their prescription drug use, 45 (24%) had bought them from a dealer, 48 (25%) had bought them from a friend or family member, 82 (43%) had been given them by a friend or family member and 13 (7%) had swapped them for another drug. Five detainees indicated other ways of obtaining pharmaceuticals. Two obtained them from strangers, one from a laboratory at work, one from a chemist in Thailand and one obtained them in jail. No respondent had purchased them over the internet.

## Relationship between pharmaceutical use and offence categories

The 16 Australian Standard Offence Classification (ASOC) offence divisions were combined to construct four offence groupings (ABS 2008). ASOC Divisions 1, 2, 3, 5 and 6 were designated *offences against the person*. Divisions 7, 8, 9 and 12 were designated *property offences*. The single division number 10 (illicit drug offences) was designated *illicit drug offences* and the remaining divisions (4, 11, 13, 14, 15, and 16) were amalgamated into an *other* group. The four offence groupings were tested in a logistic regression model in which the effects of age and gender could be controlled. This analysis found that two offence groupings, property offences ( $p=.241$ ) and other offences ( $p=.223$ ) did not predict prescription drug use in the previous 12 months. The model showed that after controlling for age and gender, the odds of being charged with an offence against the person were significantly lower for pharmaceutical users by comparison with non-pharmaceutical users ( $p=.027$ ).

The odds of being charged with an illicit drug offence were 80 percent greater for prescribed drug users by comparison with non-users. Being female was a significant predictor of prescribed drug use, as was age. The odds of reporting prescription drug use were over 70 percent greater in detainees under 30 years of age by comparison with those over 30 years ( $p=.001$ ).

## Relationship between benzodiazepine use and illicit drug use

Benzodiazepines were the most common pharmaceutical used by the detainees surveyed. To provide more objective evidence of potential illicit drug combinations with benzodiazepines, a subgroup comprising detainees who completed the addendum and additionally provided a urine sample, was extracted from the larger sample. A total of 767 individual cases were available for analysis. Results showed that there was no relationship between having a positive MDMA urine test and benzodiazepine

use in the previous 12 months; however, significantly more of those detainees who tested positive for amphetamines reported benzodiazepine use in the previous 12 months (20% *cf* 11%). Overall, heroin use had the strongest association with benzodiazepine use. Almost one-third (32%) of detainees with a positive urine test for heroin also reported benzodiazepine use compared with 10 percent of those with a negative urine test for heroin. These results support the view that benzodiazepines are commonly used to counter the unwanted effects of amphetamines as well as managing withdrawal symptoms. Benzodiazepines are also used to manage the symptoms of heroin withdrawal and to mimic the sedative effects of heroin.

## Discussion

The prevalence of non-medical prescription drug use in the previous 12 months (19%) was markedly higher among police detainees in comparison to the general community (4%; AIHW 2008). Across DUMA sites, the prevalence of prescription drug use was highest in the large metropolitan areas and lowest in Darwin. Consistent with other studies (Dobbin 1998), benzodiazepines followed by opioids were the most commonly used pharmaceuticals for non-medical purposes. Heroin users (confirmed by urinalysis) had the highest prevalence of benzodiazepine use among the sample.

Diazepam, followed by alprazolam, were the benzodiazepines used most frequently by prescription drug users. This pattern may reflect their availability at low cost on the pharmaceutical benefits scheme. In 2007, diazepam and alprazolam were respectively the most frequently dispensed benzodiazepines through the pharmaceutical benefits scheme (DUSCS 2009). The relatively low use of flunitrazepam in this sample may reflect the difficulty of accessing this benzodiazepine since its rescheduling to an S8 drug in 1998. Of the opioids, morphine was most commonly used by prescription drug users in this sample. This again is consistent with other studies of Australian users (Dobbin 1998). The low prevalence of other

prescription drug use, including that of antipsychotics and antidepressants, probably reflects the lack of reinforcing properties of these drugs as they do not produce marked stimulating or sedative effects.

Prescription drug use was higher in women, younger people, the unemployed and detainees who considered themselves drug dependent. Use was also associated with indicators of social disadvantage and offending behaviour. Specifically, more users had a current drugs-related charge, had been arrested in the previous 12 months and had been in prison in the previous 12 months. Prescription drug use appeared to have a specific purpose or function for most of the detainees using them. While a minority took pharmaceuticals for reasons of curiosity or availability, most took them to relieve negative emotional states, insomnia, pain or symptoms associated with drug dependence. Additionally, over one-quarter had taken prescription drugs for their reinforcing or hedonic properties.

In summary, non-medical prescription drug use was found to be substantially higher in the detainee population by comparison with the general community. Among the detainees surveyed, more prescription drug users were unemployed, derived their income from welfare or benefits, considered themselves drug dependent, were currently on a drug-related charge and had been arrested or imprisoned in the previous 12 months by comparison with non-users. Most pharmaceuticals were sourced from family and friends or from the person's usual doctor and pharmacy. There was little support for the view that pharmaceuticals are commonly obtained through script forgery or over the internet. Benzodiazepines, followed by opioids, were the most commonly used pharmaceuticals for non-medical purposes in this sample of police detainees. Further research to investigate the methods of obtaining illicit pharmaceuticals from within the general community is needed.

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ISSN 0817-8542 (Print)  
1836-2206 (Online)

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