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Findings from the DUMA program: Impact of reduced methamphetamine supply on consumption of illicit drugs and alcohol

Sarah Coghlan & Susan Goldsmid

Changes in illicit drug availability have been shown to impact users' alcohol and other drug consumption. In late 2000 and early 2001, Australia experienced a sudden and dramatic reduction in the supply of heroin which has continued to the present date. This shortage has been attributed to, at least in part, supply-side reduction strategies undertaken by law enforcement (Weatherburn et al. 2003). However, the benefits associated with this shortage were to some degree offset by the unintended consequence of displacement in illicit drug use, reflected in an increase in the use of other drugs, such as cocaine (Weatherburn et al. 2003). Research into the impact of the heroin shortage on illicit drug users has resulted in an awareness of the need to understand potential unintended outcomes of supply-side drug law enforcement strategies.

Recent media articles and government inquiries have highlighted methamphetamine as a drug of particular concern in Australia, with both the purity and availability of methamphetamine currently being very high (ACC 2014; LRDCPC 2014; Scott et al. 2014). It is not clear whether law enforcement efforts could produce a substantial methamphetamine shortage, such as that seen for heroin, as the methamphetamine supply is supported by both domestic production and importation (ACC 2014; LRDCPC 2014). However, as seizure rates continue to climb, there is some evidence that government policy and policing efforts are having an impact on supply. In 2012–13, the number and weight of border detections of amphetamine type stimulants (ATS) increased and were reported by the Australian Crime Commission to be the highest on record, with the 21,056 reported seizures accounting for 24.2 percent of national illicit drug seizures, second only to cannabis (ACC 2014). Further, the number of clandestine laboratories detected in Australia was the second highest on record, having more than doubled over the last 10 years, with the majority of clandestine laboratories detected domestically producing ATS (ACC 2014).

Few studies have examined the likely impact of such seizures on methamphetamine users' drug usage habits. However, a recent examination of the impact of supply-side reduction strategies on drug use and harm in New South Wales conducted by Wan et al. (2014) reported that seizures and supplier arrests for ATS were either positively associated, or were not significantly associated, with drug use and harm measures. For example, an increase in the number of large-scale ATS seizures was positively associated with an increase in the number of arrests for use or possession of ATS (Wan et al. 2014). However, no significant associations were found between the number of ATS seizures or supplier arrests and emergency department admissions (Wan et al. 2014). Although subject to number of limitations including that the study measured the associations across a relatively short temporal period (ie drug use/possession arrests were examined monthly for 4 months after seizures occurred) and that some of the drug use and harm measures may not have been sensitive enough to detect changes in consumption, the findings suggested that increases in seizures and supplier arrests for ATS may be indicative of an increased supply in the short term (Wan et al. 2014).

A study by Chalmers, Bradford and Jones (2010) examined responses to hypothetical changes in the price of methamphetamine among a sample of New South Wales residents between 18 and 58 years of age (n=101) who reported using methamphetamine in the past month. As the price of methamphetamine was manipulated, users reported that they would purchase less methamphetamine at higher price levels. It was estimated that a price increase of 10 percent would result in an 18 to 19 percent decrease in the quantity of methamphetamine purchased (Chalmers, Bradford & Jones 2010). However, a number of respondents anticipated switching to using pharmaceutical opioids, cocaine and to a lesser extent, heroin, if the price of methamphetamine were to rise (Chalmers, Bradford & Jones 2010). Despite this evidence of anticipated displacement, the authors concluded that there would be an overall reduction in drug consumption, as the level of substitution for other drugs was more than offset by the decrease in the quantity of methamphetamine purchased (Chalmers, Bradford & Jones 2010).

However, this study suffered from a number of limitations. First, the findings represent methamphetamine users' intentions as reported to researchers, which may or may not correspond to actual behaviour during periods of reduced methamphetamine supply. It is important to examine the actual behaviour users demonstrate in response to changes in drug markets, rather than how they believe they would behave in a hypothetical situation. Second, the assumption that supply reduction through law enforcement leads to an increase in the price of an illicit drug may not be valid or may only occur when an extreme shortage is experienced. A study conducted in the United States reported that if a drug market is well-established, the expansion of drug law enforcement may yield little return in the way of increased prices (Caulkins & Reuter 2010). Consistent with this, a 2014 review of empirical studies into the impact of increased law enforcement efforts on drug prices concluded that there was insufficient evidence to link the escalation of law enforcement activity with the raising of drug prices (Pollack & Reuter 2014).

Since 1999, the Australian Institute of Criminology has monitored drug use and crime trends across Australia through the Drug Use Monitoring in Australia (DUMA) program. Each quarter, detainees held in watchhouses at various sites across Australia are asked to complete an interviewer-assisted self-report questionnaire. Twice a year, detainees are also asked to provide a voluntary urine sample, which is analysed for the presence of illicit drugs. These data allow monitoring of the availability of illicit substances, including methamphetamine, and examinations of crime and drug usage behaviours.

Using DUMA data, an analysis is presented of retrospective self-reports from methamphetamine users (police detainees) on the impact that periods of reduced methamphetamine supply had on reported consumption of methamphetamine, alcohol and other illicit drugs. In order to collect more detailed data, in quarter three of 2013, detainees who had indicated methamphetamine use in the previous 12 months were presented with additional questions to assess whether they had previously experienced a period when methamphetamine was hard to get and if they had, how this had affected the quantity of methamphetamine, alcohol and other illicit drugs used at that time.

The findings should be considered in the context of Australian drug markets where methamphetamine is currently readily available, with some localised differences in availability (LRDCPC 2014).

Methamphetamine consumption during periods of reduced methamphetamine supply

Of the 550 adult detainees interviewed in quarter three of the 2013 DUMA data collection (conducted at East Perth, Brisbane, Adelaide and Kings Cross watchhouses), 47 percent reported using methamphetamine in the previous 12 months. The majority of detainees were male (81%); the overrepresentation of males in the sample is consistent with the male to female ratio in the detainee population. Detainees were, on average, 32 years of age.

Of the 375 detainees who voluntarily supplied a urine sample in the quarter, 33 percent (124 of 375) tested positive for methamphetamine. This rate is 10 percentage points higher

than the test positive rate for quarter four of 2012 (23%) and 21 percentage points higher than the test positive rate for quarter one of 2009 (12%), which was the lowest test positive rate since quarter four of the first year of data collection in 1999 (11%). However, it was found that cannabis is still the illicit substance most commonly used by Australian detainees, with 51 percent (190 of 375) of detainees testing positive for cannabis. Test positive rates for heroin were lower than those for cannabis, at six percent (23 of 375). There was a high rate of poly-drug use among detainees, with 38 percent (142 of 375) of urine samples testing positive to two or more drugs.

Detainee reports on the current state of the methamphetamine market indicated that across Australia, there had been little movement in methamphetamine availability in the three months prior to interview. Of those detainees who reported market changes, a greater number reported an increase than those who reported a decrease in availability (see Table 1). Based on a scale of 1 (extremely hard to get) to 10 (readily available), detainees across Australia consistently reported ease in accessing methamphetamine. On average, Brisbane detainees reported ease of access to methamphetamine at 8.6; Kings Cross detainees, 7.9; East Perth detainees, 7.8; and Adelaide detainees, 7.1.

Table 1 Detainee reports of current methamphetamine^a availability compared with three months prior (number of detainees)

Location	Easier to get	Same	Harder to get	Don't know	Total
East Perth	12	38	9	2	61
Brisbane	12	56	10	4	82
Adelaide	6	12	7	5	30
Kings Cross	3	7	1	2	13
Total	33	113	27	13	186

a: Labelled in the questionnaire as methamphetamine/speed/ice

Note: Excludes missing data

Fluctuations in the price of methamphetamine can result from a number of different changes in market conditions, including a change in level of supply or a change in demand. When asked about recent changes in the price of methamphetamine, 33 percent of detainees who had used methamphetamine in the past 30 days (63 of 192) reported that the price of methamphetamine had become more expensive; 53 percent (102 of 192) reported that it had stayed the same; six percent (12 of 192) reported that it had become less expensive; two percent (3 of 192) reported that the price fluctuated; and six percent (12 of 192) reported that they didn't know whether the price had changed recently.

Detainees who had used methamphetamine in the past 30 days were also asked to consider the last time methamphetamine was hard to get and the impact that the reduction in supply had on their use of methamphetamine. Over half of detainees (56%; 109 of 194) reported that they had never experienced a shortage of methamphetamine. Of those detainees who had experienced a period of reduced methamphetamine availability, the majority reported that in times of reduced supply, they consumed less methamphetamine either by reducing the quantity they consumed (9%; 8 of 85) or by abstaining (68%; 58 of 85).

Alcohol and other illicit drug (non-methamphetamine) consumption during periods of reduced methamphetamine supply

The reported impact of a reduction in the supply of methamphetamine on detainees' use of alcohol and illicit drugs other than methamphetamine is presented in Table 2. Of those detainees who reported experiencing a period of reduced methamphetamine availability, only a minority reported an increase in their consumption of alcohol (18%; 15 of 83) and approximately one-quarter reported an increase in their consumption of other illicit drugs (25%; 21 of 83) during periods of reduced methamphetamine supply. As noted previously, a high proportion of detainees (38%) are poly-drug users. Therefore, the findings suggest that detainees continue to use alcohol and illicit drugs (other than methamphetamine) when experiencing a temporary reduction in availability of methamphetamine at usage rates similar to that observed during periods of methamphetamine availability.

Table 2 Self-reported increase in consumption of alcohol or illicit drugs (not methamphetamine^a) during periods of reduced methamphetamine supply (number of detainees)

Location	Use more alcohol		Use more drugs (not methamphetamine)	
	Yes	No	Yes	No
East Perth	2	30	4	28
Brisbane	3	16	4	15
Adelaide	9	13	6	16
Kings Cross	1	9	7	3
Total	15	68	21	62

a: Labeled in the questionnaire as methamphetamine/speed/ice

Note: Excludes missing data

Conclusion

Understanding illicit drug user behaviour during periods of reduced illicit drug supply provides insight into the effectiveness of supply-side strategies and an awareness of unintended harms that may occur. Methamphetamine is a drug of particular interest in Australia at the current time and the current study provides a rare insight into users' self-reported altering of alcohol and illicit drug use during periods of reduced methamphetamine supply. Consistent with reports of high availability of methamphetamine in Australian drug markets, more than half of methamphetamine-using detainees reported never having experienced a period of reduced availability. Of those methamphetamine-using detainees who did report experiencing a period of reduced availability, the majority reported that during that period they either reduced intake or abstained from using methamphetamine, without increasing their use of alcohol or other drugs. In this way, reducing methamphetamine supply appears to be effective in terms of harm minimisation.

Consistent with national data sources (ACC 2014), police detainees reported that methamphetamine is readily available. Detainees reported little recent fluctuation in the market. Highlighting issues related to use of price as an indicator of supply, over 30 percent of detainees reported an increase in the price of methamphetamine in the last three months, but only 14 percent reported that it had become harder to get. In periods of high availability, fluctuations in price are likely to reflect fluctuations in purity or quality; the impact of changes in the quality of methamphetamine on illicit drug user purchasing habits is unclear.

There are a number of limitations associated with this study that should be recognised. First, its reliance on retrospective self-reports of drug use. Although retrospective reports of behaviour are a valid assessment method, the impact of drug use on the cognitive function and memory of police detainees may result in decreased reliability of retrospective self-reports. Future studies could address this limitation by examining trends in alcohol and illicit substance use during periods when variations in methamphetamine supply are reported. In addition, the detainee population is likely to differ substantially from non-detainee methamphetamine-using populations in terms of socioeconomic status and exposure to the illicit drug market, so caution should be taken in generalising the findings of this study.

Second, respondents were not asked to specify the duration of the experienced period of reduced methamphetamine availability. This makes it difficult to know for how long those who abstained or reduced consumption of methamphetamine maintained their reduced usage and whether the period of reduced availability impacted upon use displacement. Without this knowledge, it is also difficult to assess whether harm reduction outcomes, such as abstinence from use, were sustained over long periods. Given that duration of reduced supply may impact upon the association between reduced supply and any realised health benefits this factor should be considered in future research.

In conclusion, the findings suggest that harm minimisation may be realised among the methamphetamine-using population through policy and law enforcement efforts aimed at reducing methamphetamine supply. However, a significant proportion of detainees reported

never experiencing a shortage of methamphetamine. This indicates that methamphetamine has remained readily available across Australia, despite an increased number of seizures by law enforcement.

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All URLs correct at February 2015

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