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NDLERF

The course and consequences of the
heroin shortage in South Australia

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Funded by the National Drug Law Enforcement Research Fund
An Initiative of the National Drug Strategy

The course and consequences of the heroin shortage in South Australia

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Drug & Alcohol Services Council
South Australia

**Funded by the National Drug Law Enforcement Research Fund,
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Abbreviations

ABCI	Australian Bureau of Criminal Intelligence
ABS	Australian Bureau of Statistics
ADIS	Alcohol and Drug Information Service
AIDR	Australian Illicit Drug Report
ACC	Australian Crime Commission
BBV	Blood Borne Viruses
CNP	South Australian Clean Needle Program
DASC	Drug and Alcohol Services Council
DDU	Drugs of Dependence Unit
HIV	Human Immunodeficiency Virus
ICD-9	International Classification of Diseases – 9 th revision
ICD-10	International Classification of Diseases – 10 th revision
IDRS	Illicit Drug Reporting System
IDU	Injecting Drug User
KI	Key Informant
MPCI	Maintenance Pharmacotherapy Client Interview
NDARC	National Drug and Alcohol Research Centre
NDLERF	National Drug Law Enforcement Research Fund
OMCG	Outlaw Motor Cycle Group
PIMS	Police Information Management System
RAH	The Royal Adelaide Hospital
SAPOL	South Australian Police

Executive Summary

The heroin shortage project was a tri-state initiative involving New South Wales, Victoria and South Australia. The project was co-ordinated by the National Drug and Alcohol Research Centre (NDARC) in New South Wales and was funded by the National Drug Law Enforcement Research Fund (NDLERF). The aims of the project were to assess the impacts of a marked reduction in the supply of heroin as reported by law enforcement and health agencies in early 2001. The impacts examined in South Australia included:

- Changes in the drug market;
- Changes in patterns of drug use;
- Health related impacts;
- Changes in treatment provision for drug based issues;
- Changes in criminal activity; and
- Impacts on health and law enforcement agencies.

Key findings

The key findings resulting from the investigation of the heroin shortage in South Australia are as follows:

- Reduction in the number of fatal and non-fatal heroin related overdoses;
- Not as much heroin is being used across South Australia, as evidenced by hospital, treatment and crime data, than prior to the shortage;
- Methamphetamine is being used much more frequently as evidenced by qualitative information and data relating to treatment, however, hospital and criminal offending does not reflect this increase;
- The use of intravenous benzodiazepines and other opioids was recorded and the intravenous use of drugs in non-injectable forms has led to increased vascular care issues;
- An increase in mental health difficulties, psychosis and violence was reported for heroin users by Key Informants (KIs) due to increased methamphetamine use. This was not reflected by hospital data concerning drug-induced psychoses;
- No significant increase was recorded for treatment seeking for opioids when the shortage began; and
- There has been a steady increase in the demand for methamphetamine related treatment services. This is an area requiring on-going capacity building in South Australia.

Documenting the shortage

From synthesising the range of sometimes conflicting data the likely situation is that the heroin shortage was a real phenomenon and that it impacted on South Australia at the very beginning of 2001. The heroin shortage began suddenly and without indicators to signal its approach. Within the first few months of the shortage the availability of heroin was severely restricted and what could be sourced was very low purity. After this time heroin became more readily available, though this availability fluctuated. At the present time heroin can be acquired on demand though not as easily or readily as prior to the shortage. The purity of at least the street level heroin has slowly increased though it is not at pre-shortage levels. Heroin users reported large increases in the amount of money they were spending each day if they sought to maintain their heroin use. As purity has increased, total expenditure on heroin appears to have stabilised though it is suggested that costs may be higher than pre-shortage.

Changes in patterns of drug use

The barriers between the traditionally distinct depressant and stimulant using groups were described as having broken down. KI and Intravenous Drug User (IDU) feedback suggests that experimentation with a range of drugs is now more common amongst heroin users.

Opioids: There has been a general decrease in the use of heroin in South Australia that has been maintained to the present time. A market for diverted opioid medications was established during the heroin shortage and subsequently maintained. Diverted medications are mainly injected. Some Indigenous drug users were reported to have left opioid based pharmacotherapy programs (methadone and buprenorphine) once the heroin shortage began to take up methamphetamine use.

Methamphetamine: Whether there has been a rise in methamphetamine use as a consequence of the shortage, as evidenced by hospital presentations and separations, is a more contentious issue. The presented hospital data, which suggests no increase in the use of methamphetamine, conflicts with both qualitative feedback and data obtained from Alcohol and Drug Information Service that would suggest it had.

Cocaine: Cocaine use is not widespread in South Australia. No substantial changes in this market as a response to the heroin shortage were observed.

Benzodiazepines: The use of benzodiazepines has, on balance, probably remained comparable to pre-shortage levels.

Poly drug use: Key Informant feedback suggests that there has been an increase in both the quantity and the range of drugs involved in poly-drug use.

Injecting drug use

The extent of injecting drug use in South Australia has remained stable during the heroin shortage with a potential increase in the extent of injecting drug use being identified in 2002/2003. While the extent of injecting drug use remained stable there has been a marked increase in the injection of drugs that are in a non-injectable form leading to increased vascular care difficulties for drug users. No changes in the prevalence of blood borne viruses could be attributed to the heroin shortage.

Changes in health effects of drug use

Due to the small number of cases within South Australia there were some difficulties in identifying changes in the health effects of drug use from a quantitative perspective. However, despite these difficulties a number of trends were identified. The number of fatal and non-fatal heroin overdoses has reduced since the heroin shortage began. A potential increase in overdose experiences associated with the use of other opioids was identified. Some evidence to suggest increased methamphetamine overdoses occurring post-shortage (unconfirmed by time series analysis to have occurred as a consequence of the shortage) was found. There was also a small rise in emergency department presentations for drug related psychosis. Key Informant data indicated a rise in drug related psychosis and attributed this to increased use of methamphetamine amongst drug users. In addition, the qualitative data revealed an increase in mental health issues, psychosocial functioning and violence and other health issues such as sleep deprivation, appetite suppression, nutritional problems and drug-related injuries.

Treatment

The number of people receiving opioid pharmacotherapy and opioid detoxification services did not substantially increase as a consequence of the heroin shortage. This lack of an increase conflicts with the qualitative data reporting a large demand during the early parts of the shortage. At the present time the number of opioid-related inpatient and outpatient contacts is lower than pre-shortage levels. Data concerning opioids other than heroin and diverted medications did not show any significant increase in the number of treatment related contacts. This is in contrast to qualitative feedback suggesting an increased use of these drugs amongst heroin users.

A marked and statistically significant increase was noted in methamphetamine related inpatient contacts as a consequence of the heroin shortage. The numbers of methamphetamine related outpatient contacts also increased. However, this increase is seen as a continuation of a trend established prior to the advent of the heroin shortage. The quantitative data supports the qualitative feedback concerning a marked increase in the use of methamphetamine.

The number of inpatient and outpatient contacts for benzodiazepines showed no significant impact from the heroin shortage.

Changes in crime

The available quantitative data did not demonstrate changes in the rates of incidents per month that were likely attributable to the heroin shortage. The only exception to this was the statistically significant spike in incidents of robbery without a weapon following the advent of the heroin shortage. While changes in crime rates that may be related to the heroin shortage were generally not found, several trends were evident.

To the degree that crime data reflect the extent of drug use:

- Heroin use is presently at much lower levels than pre-shortage;
- Other opioids are not commonly used in Adelaide; and
- The use of methamphetamine has not increased in response to the heroin shortage and the incident rates are presently much lower than pre-shortage levels.

There were a number of areas of conflict between the qualitative and quantitative feedback. These shall be discussed in turn:

- There is insufficient quantitative data to support KI reports of an overall increase in the rates of acquisitive crime associated with the heroin shortage;
- There is insufficient quantitative data to support KI reports that there has been a sustained increase in behavioural and violent crimes, associated with the heroin shortage and the uptake of methamphetamine;
- The quantitative data has not demonstrated an increase in the number of incidents of methamphetamine production offences despite KI suggestions that more 'cooks' have emerged as a result of the shortage;
- A suggested increase by KIs in the incidents of fraud, derived from heroin dealers engaging in these activities to replace lost income due to the shortage, was not reflected in the quantitative data. However, the number of fraud charges per month is reasonably high and any impact from heroin dealers may simply have been absorbed into the data set. Without detailed information as to the number of heroin dealers in South Australia at the time of the shortage this qualitative feedback can be neither supported or refuted;
- A rise in prostitution offences expected by KIs was not reflected in the quantitative data. However, there has been a marked decrease in the number of prostitution offences recorded since early 1999. Hence, the generally low numbers of offences interspersed with significant peaks may be more reflective of changing police practices as opposed to being indicative of actual rates of illegal activity; and
- A rise in driving offences expected by KIs due to the effects of methamphetamine was not reflected in the quantitative data.

Qualitative and quantitative data was in agreement on one point. The reports from KIs suggest that an increase in stress and panic by heroin users led to an increase in opportunistic crime. Evidence for this was found in the quantitative data. An increase in the number of incidents of robbery without a weapon was related to the heroin shortage. As this form of robbery did not involve the pre-meditation that can be implied by weapons offences this data is supportive of KI reports of a brief period of increased, highly opportunistic crime.

Impacts on health agencies

Despite a steady pre-shortage increase in problematic use of methamphetamine, the heroin shortage highlighted that Adelaide drug treatment services tended to be heroin focussed with a paucity of programs addressing other drug use. The need for capacity building at the time of the shortage around both methamphetamine based issues as well as other opioids and benzodiazepines was readily apparent. Methamphetamine dependence was also seen as a particularly difficult area to effectively treat.

Impacts on law enforcement agencies

The primary impact of the heroin shortage on law enforcement agencies in South Australia, as identified by Key Informants, has been a shift in the focus of Operation Mantle (a major South Australian Police (SAPOL) drug initiative) to methamphetamine, an increase in having to deal with 'clan labs' (amphetamine producing laboratories controlled by Outlaw Motor Cycle Groups (OMCG)) and the provision of more information to police on how to handle people acting under the influence of methamphetamine.

1 Introduction

The Drug & Alcohol Services Council (DASC) was contracted by NDARC to carry out the South Australian component of a National investigation into a reported heroin shortage. Details of the heroin shortage project itself are contained in the *Introduction section of the National Report* of this project.

This section contains a brief overview of the history of the South Australian heroin market followed by a discussion of the methodologies employed for this study and an overview of the report sections.

1.1 History of the South Australian heroin market

Data sources

The South Australian heroin market is smaller than that of New South Wales and Victoria and does not play a primary role in the importation and distribution of heroin (Australian Bureau of Criminal Intelligence, 1998-99, 1999-00, 2000-01). The history of the South Australian heroin market has been much less thoroughly researched and documented than other Australian States. No studies/reports that focus on the South Australian heroin market were identified in the literature. Statistical data in relation to heroin use is limited prior to the 1990s. There were no reliable surveys on rates of non-therapeutic opioid use in South Australia during the 1970s. Household surveys of drug use through the 1980s were hampered by low sample sizes and are consequently not reliable enough to infer any trends in heroin use. The first major report documenting the early history of heroin use in South Australia is the Sackville Royal Commission (Sackville, Hackett & Nies, 1979). Some feedback concerning drug trends in the late 1980s and early 1990s is available from early Australian Illicit Drug Reports.

Sackville Royal Commission

The Sackville Royal Commission provides a comprehensive review of opioid related issues throughout the 1970s. This report noted a reduction in the prescription of licit opioid products for problems unrelated to opioid dependence through the 1970s. During the same time period there was a dramatic increase in illicit opioid use and an increase in the prescribing of methadone in South Australia. It was reported that in 1974 the South Australian Department of Public Health became concerned about the rise in use of methadone. The Commission found that this was mainly attributable to unauthorised prescribing by some medical practitioners for interstate and local heroin addicts. This resulted in the establishment in 1974 of the first methadone program in South Australia, based at the Hillcrest Hospital. An issue at this time was that people from interstate claiming to be heroin dependent were able to source methadone from South Australian doctors without adequate monitoring and supervision. There were also conflicts among service providers at the time over the rationale and philosophy underlying methadone maintenance treatment. The Alcohol and Drug Addicts Treatment Board (forerunner of the Drug & Alcohol Services Council) opposed the use of methadone as a maintenance agent, arguing that methadone maintenance was incompatible with “drug-free” programs.

In relation to the number of problematic opioid users in South Australia the Commission reported that there were likely to be between 500 and 1500 regular users in 1978. The uncertainty as to the number of opioid users reflected the lack of accurate available indicator data. For example, throughout 1975 and 1976, 300 individuals had had contact with treatment facilities for issues of

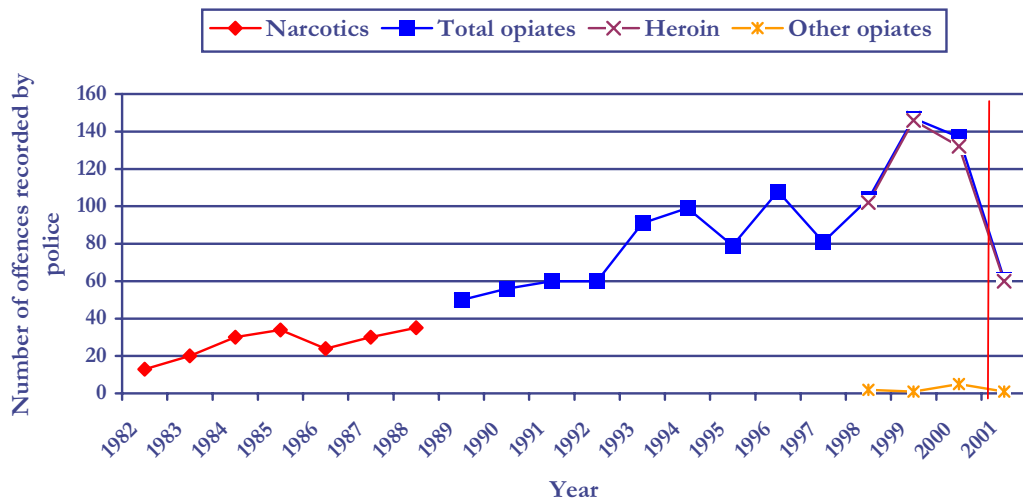
opioid dependence. During this same period only 80 people presented to the South Australian judicial system for opioid-related matters. In 1975 the Hillcrest Hospital methadone program was providing services to less than 20 individuals. By the end of 1978, this number had increased to approximately 180. This expansion is in large part due to the increased resources provided to the methadone program at the time as well as the closure of other treatment facilities. This increase could alternately reflect a gradual increase in the availability and use of heroin throughout the 1970s in South Australia and a corresponding increase in problems of drug dependence. As can be seen there is no definitive data concerning the number of problematic opioid users in South Australia.

The Royal Commission reports on other indicators that would suggest heroin became an issue of increasing concern throughout the 1970s. While the number of opioid overdose deaths remained too small to discuss any trends, the notifications for serum hepatitis associated with injecting drug use rose from six cases in 1974 to approximately 100 in both 1976 and 1977. Criminal justice data also suggests that the heroin market was either increasing in size or that heroin use was increasing. For the first half of 1974 only two people were charged with heroin offences in South Australia. However, this had increased to 30 individuals by the first half of 1977.

Crime data

The Office of Crime Statistics and Research (OCSAR) of the South Australian Attorney-General's Department have collated data on drug offences since the early 1980s. This provides a picture of the growth in the heroin market in South Australia. Due to changing recording practices it is only possible to separate heroin related offences from other opioid offences from 1998 onwards. Also, prior to 1999 opioids were not differentiated from other narcotic substances. Figure 1.1 shows the dramatic growth in opioid offences that occurred through the 1980s and 1990s in South Australia.

Figure 1.1: Number of offences relating to possess for sale or sell narcotics/opiates/heroin recorded by police in South Australia, 1982-2001



Source: Crime and Justice Reports, Office of Crime Statistics and Research

Other data sources

Anecdotal reports suggest that the use of “home-bake” derived from codeine-based drugs by opioid-dependent persons was widespread in the late 1980s as a way to meet the demand for suitable opioids when supplies of heroin were scarce. Indications are that home-bake became much less common in the 1990s, when supplies of heroin in South Australia became much more

consistently available at affordable prices.

Methadone maintenance services were reported as reaching a critical point in the early 1990s, with long waiting lists for entry into treatment. These problems were alleviated with a restructure of methadone treatment services, resulting in an increase in client numbers.

Information on particular markets for heroin within South Australia is limited. Heroin trafficking by Vietnamese dealers in the North-Western suburbs of Adelaide became a focus of attention for both law enforcement and drug treatment agencies in the mid-1990s. The influx of heroin through these dealers was also apparently associated with an increased availability of cheaper heroin of higher purity across Adelaide. A study of Vietnamese heroin users in Adelaide (Ali et al, 2000) showed that dependent users in this community were, for various reasons, not accessing suitable treatments for their dependence.

During the late 1990s, media attention was focused on the increasingly visible problem of illicit drug use and dealing in the community. A particular area of concern was the emergence of young Vietnamese heroin dealers operating in Rundle Mall, the major central shopping precinct in Adelaide. Around this time, South Australia Police established Operation Mantle to target low to middle level drug dealers. Additional staff resources were provided to Local Service Areas across Adelaide in relation to Operation Mantle. The appearance of young heroin dealers in Rundle Mall suggests the emergence of a more open and widespread heroin market in Adelaide, and probably the most visible street-level dealing that had yet been seen in South Australia. Other anecdotal reports from around this time (Illicit Drug Reporting System (IDRS) key informant reports, (youth treatment agency staff)) suggest that heroin use was becoming increasingly visible in certain parts of Adelaide, including the city centre, with relatively young users observed injecting by city workers during business hours. Since the impacts of the heroin shortage of 2000/2001, it seems that heroin use in Adelaide has again become less visible

1.2 Methodology

South Australia is the smallest of the three jurisdictions involved in the heroin shortage project. While there are some local differences in drug trends within South Australia these tend to be minor and Adelaide can appropriately be analysed as a single drug market. As a result there will be no break down of drug trends in specific regions of the State.

For a detailed discussion of the methodology and tools employed please refer to the *Methods section in the NSW report* and *Lessons and Limitations section of the National report* for this project. The specific aspects of the study which are particular to the South Australian component are detailed in this section. To summarise, three arms of data collection and analysis were employed for this study:

- Qualitative data was gained from semi-structured interviews with KIs from both the health and law enforcement fields. Key Informants were chosen on the basis of their knowledge and role in the drugs area. To ensure a range of perspectives this consultation involved professionals from multiple health based organisations/units and branches of policing activity who fulfil various roles in the drug based sector. In total, 41 KIs were interviewed between January and March 2003, with 11 law enforcement representatives and 30 health based agency representatives [See Appendix A].
- Qualitative data was gained from semi-structured interviews with 43 clients receiving maintenance pharmacotherapy treatment for heroin dependence, mainly methadone

(MPCI). Of these clients, 18 had been receiving some form of maintenance pharmacotherapy prior to the shortage and 25 began to receive treatment during the first few months of the shortage (February to April 2001).

- Quantitative indicator data was gathered from a range of sources. This process involved liaison and consultation with a number of agencies to access raw data that was consequently analysed by the research team. Each section of the report lists the specific agencies/units from which quantitative data relevant to that section was obtained. Where appropriate, statistical modelling employing a time series analysis was carried out by NDARC. All queries regarding the statistical techniques used to perform the time series for this report should be directed to NDARC.

1.3 Report structure

This report is divided into ten sections, including the introduction and conclusion. Eight of the sections involve an analysis of available data that address the relevant issue. The primary sections are as follows:

- Section 2: Documenting the Heroin Shortage
- Section 3: Changes in Patterns of Drug Use
- Section 4: Injecting Drug Use
- Section 5: Changes in the Number of Heroin Users
- Section 6: Changes in Health Effects of Drug Use
- Section 7: Treatment
- Section 8: Changes in Crime
- Section 9: Changes in Agency Operations as a Result of the Shortage
- Section 10: Findings and Implications

2 Documenting the Heroin Shortage

Summary

- A significant drop in heroin availability was noted in 2001 although there was some debate as to whether heroin was “impossible” to get or just more difficult. Availability of heroin was reported by some KIs and MPCIs to have fluctuated during the shortage.
- Search times required to source heroin were reported to have increased from approximately 20 minutes up to days at the height of the shortage.
- The price of heroin had increased up to threefold according to some KIs during the shortage. Price data from the IDRS did not support this conclusion.
- The substantial drop in heroin purity reported by KIs and MPCIs was not evident in 2001 data reports from the IDRS. A significant drop in purity was recorded in 2001/02 suggesting a possible time lag in the data on heroin purity.
- Only a small amount of heroin seizure information was available for analysis and trends could not be inferred.
- Both KIs and MPCIs agreed that the heroin shortage was a real phenomenon which began in January 2001 and has been sustained. Some increases in heroin availability and purity since the low of the shortage have been reported.

2.1 Introduction

This chapter describes the extent of the heroin shortage in South Australia. The data used in this section includes:

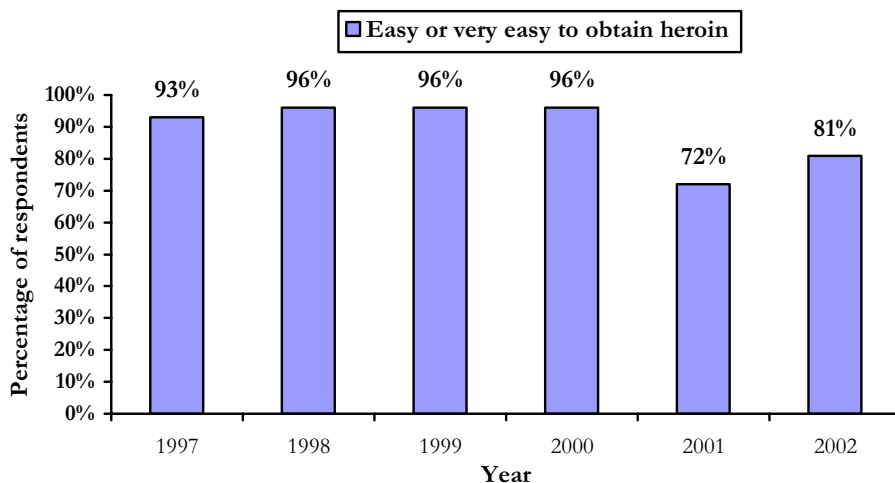
- The Illicit Drug Reporting System (IDRS), National Drug and Alcohol Research Centre (NDARC), University of New South Wales.
- Australian Illicit Drug Reports (AIDR), Australian Crime Commission (ACC)
- Reports from Key Informants (KI) and clients receiving maintenance pharmacotherapy treatment for heroin dependence, mainly methadone (MPCI) data.

2.2 Availability of heroin

2.2.1 IDRS data

The IDRS provides a coordinated and ongoing monitoring system focussing on drugs such as heroin, methamphetamine, cocaine and cannabis, and acts as a strategic early warning system for emerging illicit drug problems. Each year the survey is conducted in South Australia with a minimum of 100 injecting drug users. Questions asked of drug users by the IDRS include how difficult it is to source their drug of choice and recent changes in availability. Data concerning the availability of heroin is presented in Figure 2.1

Figure 2.1: Availability of heroin as reported by Injecting Drug Users for the Illicit Drug Reporting System



Source: South Australian Drug Trends, Findings from the Illicit Drug Reporting System (IDRS)

It is clear that from Figure 2.1 that respondents found heroin less easy to obtain in 2001 and 2002 than in the previous four years with a 24% decrease in responses indicating heroin was easy or very easy to obtain from 2000 to 2001. One factor to consider when interpreting this is that the study asks for a global impression of heroin availability and does not unpack potential changes in availability across the year. Of the KIs (N = 32) interviewed for the 2001 IDRS 75% felt that heroin was more difficult to obtain than in the previous year.

2.2.2 AIDR data

Information from South Australian Police mentioned in the 2001/02 AIDR report suggests that heroin remained significantly scarce throughout the second half of 2001. The South Australian heroin market was reported as remaining depressed yet undergoing periods of intermittent supply.

2.2.3 KI & MPCl data

Perceptions of the availability of heroin differed between KIs and MPCIs. Key Informants tended to emphasise that, at least at the beginning, the heroin shortage had been more total with access to heroin being severely curtailed if not impossible to obtain. The significance of the shortage was emphasised by one health KI who stated that there had not even been a short term interruption in the heroin supply in Adelaide in the previous five years. Key Informants reported some drug users travelling interstate to Sydney and Melbourne in attempts to source heroin. These attempts were described as having met with failure.

The described inability of drug users to source heroin at the beginning of the shortage was emphasised by health KIs to have occurred regardless of the drug user's networks or contacts. However, those health KIs consulted who had professional and cultural links with the Vietnamese community reported that the more entrenched heroin users within this community, with their larger circle of contacts, were still able to source heroin during the shortage. The more casual heroin users within this community were reported by KIs as facing difficulties in acquiring heroin. The ability for some members of this community to source heroin during the shortage was seen as relating to some members' roles in the local distribution of heroin.

MPCIs' responses differed from KIs in that MPCIs were more likely to report that heroin had been difficult to acquire during the shortage or that its availability fluctuated rather than heroin being impossible to acquire. However, some MPCIs did emphasise how severe they felt the heroin shortage to have been, "More than a shortage, more like a disappearance. There was none around". From the body of feedback provided by this group it would seem that some heroin users, employing the primary strategy of changing their drug dealer, were able to source at least some heroin throughout the heroin shortage.

Health and law enforcement KIs reported that there had been an increase in the availability of heroin since the acute shortage of early 2001. This increase was described as either a steady increase or as having initially fluctuated throughout 2001 followed by a more steady increase. It was agreed that, at the present time, heroin was still not as readily available in Adelaide as pre-shortage but that it could definitely be acquired.

2.2.4 Conclusion

A significant drop in heroin availability was apparent in 2001 according to the IDRS report. This drop was supported by KI and MPCl data. There was some conflict on whether the shortage was reflected in unavailability or increased difficulty in sourcing heroin.

2.3 Search time for heroin

2.3.1 IDRS data

In 2002 the IDRS surveys introduced questions discussing the search times involved for respondent's drug of choice. However, due to the lack of comparative data from previous years, this information has potentially limited impact. From consultation with the 48 IDUs who felt confident to comment on the heroin market the median length of time usually needed to acquire heroin was 20 minutes, with figures ranging from five minutes to three hours.

2.3.2 KI & MPCl data

Both MPCIs and KIs repeatedly mentioned that the time required to source heroin had increased in relation to pre-shortage times. Estimates of the increase in search time required ranged from minutes prior to the heroin shortage increasing to hours or, at the height of the shortage, even days. At the present time, heroin was reported as being much more readily available in Adelaide but respondents still reported that it took slightly longer and required more travel time to acquire heroin than pre-heroin shortage. This increase in search time was attributed by KIs and MPCIs to changes in the structure of the heroin market in Adelaide as discussed in *Section 8: Changes in crime*.

2.3.3 Conclusion

While no information on search times for heroin was available from the IDRS study at the time of the shortage, both KIs and MPCIs believed search times had increased. Some speculated that the reason for this was a change in the structure of the heroin market in South Australia.

2.4 Heroin price

Quantitative data on the price of heroin in South Australia is available from both IDRS and AIDR. Due to the number of omissions in AIDR data from around the time of the heroin shortage this data will not be reported.

2.4.1 IDRS data

The average reported price for a 'cap' (0.1 to 0.3grams) and a 'weight' (one gram) of heroin is shown in Table 2.1. Where the data is available the range of IDUs responses is provided.

Table 2.1: Purchase costs of heroin as reported by Intravenous Drug Users (IDRS)

Average cost	Year					
	1997	1998	1999	2000	2001	2002
'Cap'	\$50 (102)	\$50 (111)	\$50 (74)	\$50 (70)	\$50 (33)	\$50 (19)
'Weight'	\$400 (74)	\$400 (76)	\$400 (43)	\$310 (38)	\$350 (18)	\$450(11)
			(\$200-600)	(\$180-600)	(\$150-500)	(\$250-500)

Source: South Australian Drug Trends 2002, Findings from the Illicit Drug Reporting System (IDRS), Ns in parentheses

The price of a cap of heroin has remained remarkably stable in SA since 1997, with \$50 being the price reported by most of the heroin users who have participated in the IDRS surveys. The price of a gram of heroin has shown more variability. Despite the large range of responses the average cost provided for heroin in the year prior to the shortage actually dropped, from \$400 to \$310. However, during the time of shortage (2001), the price of a weight of heroin at around \$350 does not seem to have increased substantially. This was followed by a \$100 price rise in the following year to \$450. Why the price of heroin should have remained reasonably stable during the apparent height of the shortage only to increase markedly in the following year is unclear.

2.4.2 KI & MPCl data

Both KIs and MPCIs expressed two general views regarding the price of heroin:

- Price had increased, by up to three times as much.
- The amount heroin users were spending had increased.

KIs and MPCIs suggested that prices remained stable but due to the lower purity of heroin, individuals needed to purchase greater amounts to achieve the desired effects.

Some feedback from law enforcement KIs reported that the prices for street level amounts of heroin had not varied during the shortage but that prices did increase for larger amounts; ounces and 350g blocks. While the data may seem to conflict it was generally agreed upon that, for whatever reason, heroin users had to spend greater amounts of money during the shortage if they attempted to maintain their use of this drug.

2.4.3 Conclusion

The annual data on the purchase price of heroin does not show an immediate or large jump in price at the time of the shortage. The lack of resolution (monthly data unavailable) may account for the contradiction with KI and MPCl reports of up to a threefold increase in price. MPCIs were also reporting having to increase spending as lower purity of the available heroin meant significantly more heroin had to be purchased to achieve the desired effect.

2.5 Heroin purity

2.5.1 AIDR data

Heroin purity data compiled from AIDR reports is presented in Table 2.2. This data is based on the laboratory tested purity levels of heroin obtained from seizures in South Australia and controlled purchases by local law enforcement representatives. The data is divided into the purity of seizures of two grams or less, more reflective of street level heroin, and amounts greater than two grams to reflect the higher levels of the heroin market.

For the periods 1996/97 up until 1998/99 the purity levels reported are the average of the samples tested. From 1999/00 onwards these figures indicate the median heroin purity levels. There has been a general decline in the purity of the available heroin seized in South Australia across both categories of drug quantities. This decline in purity levels has been most noticeable in the 2001/02 period. When comparing the median purity of heroin (from 1999/00 onwards) across the two quantities the figures are similar until 2001/02. At this point the larger seizures actually have lower median purity levels than the street level heroin.

Table 2.2: Purity levels of heroin in South Australia as reported by the Australian Illicit Drug Reports

Quantity	Year					
	Average purity			Median purity		
	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02
<2 grams	32%	56%	61%	48%	43%	23%
>2 grams	49%	60%	58%	48%	40%	13.7%

Source: Australian Illicit Drug Reports 1996-02

Regardless of this somewhat surprising result there was a drop of 20% in the recorded purity of street level heroin in 2001/02. While there was no significant decrease in purity levels for the 2000/01 period, during which time the heroin shortage started, this lack of effect may be due to the majority of heroin seizures that were subsequently tested having occurred in 2000 prior to the shortage.

2.5.2 KI & MPCl data

The majority of both health and law enforcement KIs described the purity of heroin as having decreased as a consequence of the shortage, sometimes dramatically. The heroin available to users during the time of shortage was reported to be of low purity. One law enforcement KI reported that this decrease in purity was particular to street level heroin. This KI stated that the purity of heroin at the higher levels of the market had not been significantly reduced. Unfortunately, this respondent did not elaborate on whether there were similar quantities of heroin, as pre-shortage, available at the “higher end” of the market in Adelaide. This additional data could have indicated whether the available heroin was either being ‘cut’ to this degree to further increase dealers’ profit margins or that smaller amounts of high quality heroin were now being made to stretch further. Several KIs mentioned that heroin purity had been steadily increasing since the time of shortage but at the time of interview was still not at pre-shortage levels. KI data was confirmed by MPCIs who continually mentioned the very poor quality heroin that was available towards the beginning of the shortage, having to use up to three times the amount they previously had to achieve the same effect.

2.5.3 Conclusion

An analysis of the quantitative data on the purity of heroin in the 2000/01 financial year revealed a small decrease of 5% on previous years. KIs and MPCIs reported a much larger decrease in heroin purity since the heroin shortage began in January 2001. A dramatic decrease in heroin purity of the magnitude referred to by KIs and MPCIs actually occurred in the 2001/02 financial year. Why the more substantial drop in heroin purity was recorded in the 2001/02 financial year as compared to the 2000/01 financial year is unknown though it may be that the data for 2000/01 is more reflective of 2000 purity levels.

2.6 Heroin seizures

2.6.1 AIDR data

Data concerning heroin seizures for South Australia does contain some gaps, generally regarding the weight of the heroin that had been seized. The available data concerning heroin seizures is presented in Table 2.3. As can be seen and discussed within the AIDR reports, South Australia does not appear to have a significant role in the international importation of heroin. The absence of data for the period 1999/00 and the grouping of data into financial year periods, limits the ability to comment on the impact of the heroin shortage on heroin seizures within South Australia. As can be seen from the figures of 2001/02 there has been a sharp decline in the number of seizures from the year prior and the amount of heroin seized has also decreased. The available data concerning heroin seizures shows very severe fluctuations from year to year and is seemingly too varied and vulnerable to differences in recording practices and policing initiatives to be considered a reliable indicator of the amounts of heroin being imported into South Australia.

Table 2.3: South Australian heroin seizures as reported by the Australian Illicit Drug Reports

Year	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02
Customs seizures:						
Number	3	1	1	1	2	1
Weight (grams)	190	13,560	50	N.A.	N.A.	N.A.
Other seizures:						
Number	0	4	199	N.A.	177	9
Weight (grams)	0	16,668	1,547	N.A.	4,459	1,004
Total^A:						
Number	3	5	200	1	179	10
Weight (grams)	190	30,228	1,597	N.A.	4,459	1,004

N.A.: This data is not available.

A: For some years these figures will be an underestimation due to data availability issues.

Source: Australian Illicit Drug Reports 1996-02.

2.6.2 KI & MPCl data

Law enforcement KIs reported that prior to the shortage there were a number of large heroin seizures at both national and international levels. At a State level, during the shortage a large decrease was noted by law enforcement KIs in both the number of heroin seizures and the amount of heroin that was found. Unfortunately, these changes were not quantified by respondents. At the present time some seizures of heroin were reported as occurring in Adelaide but these are not as common as pre-shortage levels and are of a smaller size, with no major seizures being reported by respondents.

2.6.3 Conclusion

The available quantitative data on heroin seizures is not extensive enough to infer any trends in South Australia. The KI data describes a recent decline in the number and quantity of heroin seizures that aligns with feedback concerning the decrease in available heroin. The impact of seizures on the amount of heroin available at a jurisdictional level was contested between health and law enforcement KIs.

2.7 Chronology of the shortage

2.7.1 AIDR data

From the 2000/01 AIDR report, heroin was described as being readily available during the second half of 2000. A significant shortage was reported for the first quarter of 2001. South Australian police reported that the availability of heroin reached the levels of shortage reported in the Eastern States by mid-January 2001. The AIDR report states that heroin began to become more available during May and June of 2001. It is unclear if this feedback related to all jurisdictions. As previously mentioned, qualitative feedback from South Australian Police mentioned in the 2001/02 AIDR report discussed heroin remaining significantly scarce throughout the second half of 2001.

2.7.2 IDRS data

The 2001 IDRS survey included a component designed to investigate the heroin shortage. Of the 100 users interviewed, 57 reported that heroin had been harder to obtain leading up to the time of interview. Comments relative to the chronology of the shortage made by these users are as follows:

- 35% believed that the shortage began in January 2001;
- 35% noted a decrease in heroin availability between September and December 2000;
- 23% noted a decrease between February and May 2001; and
- 74% believed that the shortage had not ended as at mid-2001.

2.7.3 KI & MPCl data

It was generally agreed upon by KIs and MPCl that the heroin shortage occurred at the very beginning of 2001 with some feedback suggesting it may have started towards the very end of 2000. What disagreement existed amongst respondents in relation to the issues can readily be attributed to recall issues, considering the time frame between the shortage and the data collection period. Whether there was a peak period of shortage tended to be more of a contested issue between respondents. From KI data, some stated that there was no peak shortage but instead that the supply of heroin fluctuated across the entirety of 2001. For those who felt that there had been a peak period this was generally around January/February 2001 with others saying that this extended to around mid 2001. This issue is further complicated through differing respondents' understanding of the term "shortage", with some individuals operationalising this as total or near total unavailability and others as it simply being harder to source heroin than in previous years.

Regarding the question of whether the shortage had actually ended, feedback was mixed. Responses from the bio-medical based health agency representatives, such as doctors at emergency departments, tended to view the shortage as being on-going. However, this opinion is based upon data from hospital presentations and separations and is consequently more indicative of the consequences of heroin use as opposed to direct knowledge of the actual heroin market. This data is vulnerable to changes in community drug using practices and the validity of this feedback is questionable. The remaining health agency representatives were divided as to when the shortage had ended, generally stating either mid 2001 or mid 2002. It is unclear why there should be a gap of one year between responses. Law enforcement representatives were similarly divided as to whether the shortage had actually ended due to the ongoing decreased availability of heroin when compared with pre-shortage levels.

The suddenness of the onset of the shortage was frequently reported, with both the drug users and the workers associated with the field being caught unawares. There were no discernible warning signs for the shortage even with the benefit of hindsight. Even those drug users with extensive contacts within the drug using community, and seen as being "in the know", were reported by health KIs as being surprised by the shortage.

2.7.4 Conclusion

KIs and MPCls generally agreed that the heroin shortage occurred at the very beginning of 2001. Some respondents to the 2001 IDRS reported that a decrease in heroin availability was already being felt in September and December of 2000. Many KI and MPCl reported that heroin availability had not returned to pre-shortage levels.

2.8 Summary

The quantitative data that is available identified a number of trends:

- Heroin became more difficult to acquire in 2001 and 2002 than in previous years;
- The price for a 'cap' of heroin has remained stable at \$50 for several years prior and during the shortage;
- The price for a 'weight' of heroin dropped from \$400 to \$310 in 2000, and did not attain this price again until 2002, where the average price was \$450; and
- Heroin purity was found to have decreased somewhat in 2000/01 but more significantly so in the 2001/02 period.

The qualitative data identified a number of key points:

- Heroin became much more difficult to acquire from the beginning of 2001 and is still less easily acquired at the present time than pre-shortage;
- During the shortage and, to a potentially lesser extent, at the present time the time required to source heroin increased;
- Heroin users had to spend increased amounts of money if they sought to maintain their use of heroin during this period. The underlying reasons for this increased expenditure was contested between respondents; and
- The purity of what heroin could be purchased during the shortage was reported as being very low and that current purity, while improved, was still not equivalent to pre-shortage levels.

From synthesising the range of sometimes conflicting data the likely situation is that the heroin shortage was a real phenomenon which commenced in South Australia at the very beginning of 2001. The shortage began suddenly and without indicators to signal its approach. Within the first few months of the shortage the availability of heroin was severely restricted and what could be sourced was very low purity. After this time heroin became more readily available, though this availability fluctuated. At the present time heroin can be acquired on demand though not as easily or readily as prior to the shortage. The purity of at least the street level heroin has slowly increased though it is not at pre-shortage purity levels. Heroin users had often large increases in the amount of money they were spending daily if they sought to maintain their heroin use. As purity has increased, total expenditure on heroin has seemingly stabilised though it is suggested that costs may be higher than pre-shortage.

3 Changes in Patterns of Drug Use

Summary

- A decrease in heroin use was evident in heroin-related presentations and separations to South Australian hospitals; however, a time series analysis did not indicate that the heroin shortage was contributing to the decline.
- An analysis of IDRS data IDUs and KI/MPCI was undertaken. In contrast to this data showing an increase in methamphetamine use related to the heroin shortage, hospital presentations and separations revealed a steady decrease in methamphetamine-related cases.
- Cocaine use had not been prevalent in the South Australian illicit drug scene prior to the shortage and no change was evident.
- No clear increase in benzodiazepine use was apparent in the quantitative data and a number of KIs commented they were not aware of a significant uptake in the community as a result of the heroin shortage.
- A market for diverted opioids in South Australia has been established and maintained. This is mainly focussed around intravenous use and the use of opioids other than methadone.
- Poly-drug use continued but with a more chaotic approach as heroin users attempted to create drug cocktails to replace the effects obtained by heroin.

3.1 Introduction

It is plausible that some heroin users used drugs other than heroin to cope with the effects of the heroin shortage. It is difficult to gain a thorough understanding of exactly what changes to particular drug markets occurred as many heroin users engage in some level of poly-drug use. Despite this concern, the following data was accessed in an attempt to assess how patterns of drug use may have changed as a consequence of the heroin shortage:

- South Australian hospital admissions and separation data¹ from the Knowledge Management Section, Information Management Services, South Australian Department of Human Services;
- Data from the Alcohol and Drug Information Service (DASC);
- Interviews with KI and MPCJ; and
- Data on self reported drug use by IDU collected as part of the IDRS²
 - Main drug of choice;
 - Drug last injected; and
 - Drug most frequently injected in the month prior to interview for the IDRS.

3.2 Heroin use

3.2.1 Hospital data³

Some evidence for a change in patterns of drug use may be gained from examining hospital data relating to the number of heroin related admissions and separations. As can be seen in Figure 3.1, heroin related presentations to the Royal Adelaide Hospital (RAH) emergency department, one of the key hospitals in Adelaide and the only public hospital situated in the CBD, have been quite variable and subject to fluctuations. However, a marked decrease since the shortage is apparent and the low levels have been maintained since. The data in Figure 3.1 may imply that at the present time, with the low numbers of presentations per month, heroin may not be being used to the same extent across Adelaide as prior to the shortage.

Figure 3.2 presents the number of separations occurring in response to heroin dependence or misuse. The sharp decline from July 1999 is thought to be reflective of data coding issues as during this time the coding of diagnoses switched from ICD-9 to ICD-10⁴. A general decline in separations appears to have begun in April 2000.

¹ The difference between these two data types is that separations data covers the final diagnosis provided to a patient and, hence, can cover issues not initially suspected by staff upon that patient's presentation to hospital.

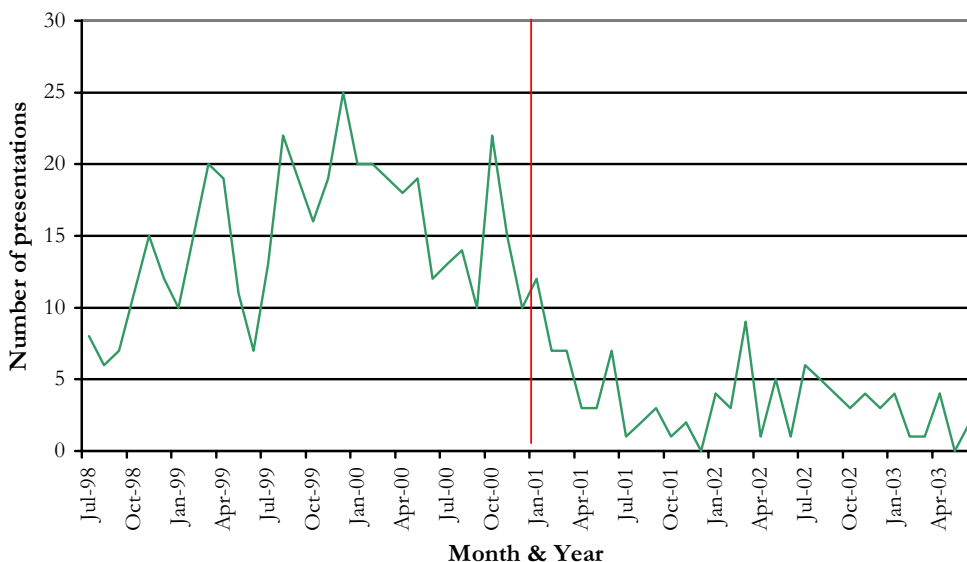
² A minimum of 100 IDUs were interviewed for each year of the IDRS.

³ While hospital data is useful it has several limitations. Primarily, changes in hospital data may reflect changes unrelated to drug markets such as availability or accessibility of treatment. This data is also more reflective of the consequences of drug use rather than necessarily being indicative of market changes. Some caution must be taken when inferring drug market trends from hospital data.

⁴ Prior to data being extracted for this study from hospitals, mapping of old ICD-9 code from pre-July 1999 to ICD-10 codes was undertaken by experts from the Medical Information Unit of SA Department of Human Services. However, even with accurate and complete mapping, the two coding systems have fundamental incompatibilities that make some comparisons difficult.

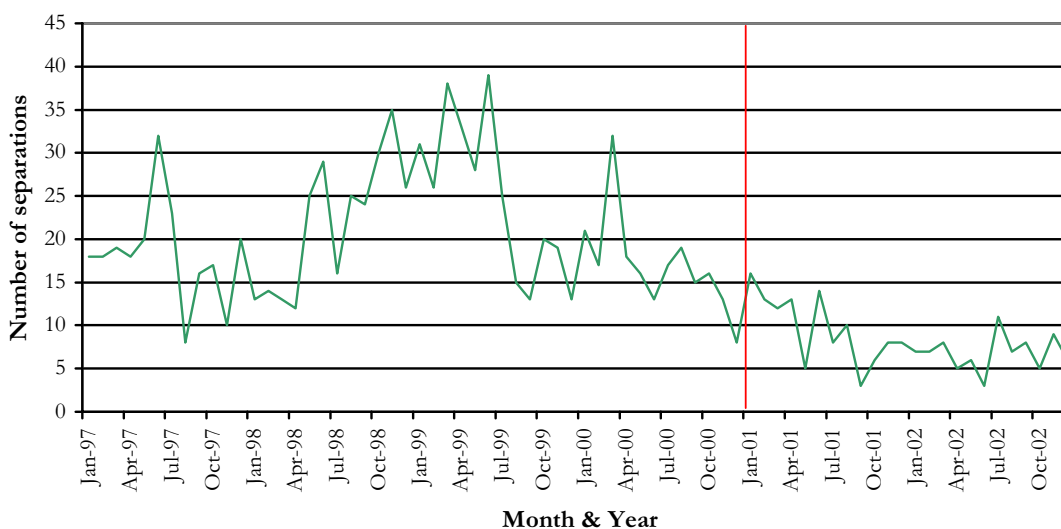
Although both presentations and separations from South Australian hospitals show a decrease in numbers from around the time of the heroin shortage, the decline appears to have started much earlier.

Figure 3.1: Number of heroin-related presentations to the Royal Adelaide Hospital emergency department, 1998-2003



Source: Knowledge Management Section, Information Management Services, South Australian Department of Human Services

Figure 3.2: Number of heroin dependence/misuse separations from all South Australian hospitals: 1997-2002

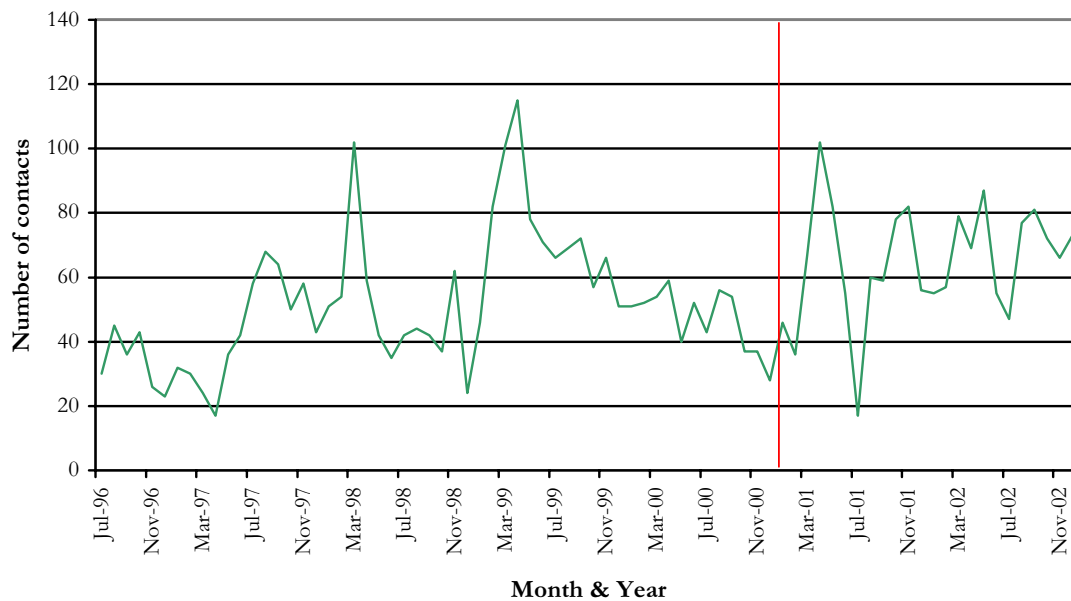


Source: Knowledge Management Section, Information Management Services, South Australian Department of Human Services

3.2.2 ADIS data

ADIS provides an information service as well as some counselling and referral to treatment. Information about the main drug of interest for each contact is collected and provides an estimate of drug users help-seeking behaviour as well as the help-seeking behaviour of friends and family members. Figure 3.3 shows that after the shortage began there was a sharp increase in the number of calls made to this service regarding opioids. Due to the highly variable nature of the data it was not subject to a time series analysis so no firm conclusions can be drawn as to whether the increase occurred as a consequence of the heroin shortage.

Figure 3.3: Number of South Australian ADIS contacts for all opioids, July 1996 – December 2002



Source: Knowledge Management Section, Information Management Services, South Australian Department of Human Services

3.2.3 IDRS data

Table 3.1 shows the proportion of IDUs interviewed for the IDRS that reported heroin as the drug they prefer/use.

Table 3.1: IDRS data concerning heroin use amongst IDUs

	Year			
	1999 (N = 100)	2000 (N = 107)	2001 (N = 100)	2002 (N = 100)
Drug of choice	66%	56%	43%	30%
Last injected drug	60%	56%	32%	25%
Most commonly injected drug	61%	59%	38%	22%

Source: South Australian Drug Trends (1999-2002), Illicit Drug Reporting System.

There is a clear decline from 1999 to 2002 in both the prevalence of heroin use and whether heroin was the respondent's drug of choice. An eight percent difference in the proportion of respondents reporting heroin as their drug of choice was seen compared to the most commonly injected drug in 2002 in the month leading up to the interview. This would suggest that difficulties may still exist in accessing heroin or that poly-drug use had increased. At a minimum, this data shows a decline in the use of heroin from pre-shortage to 2002.

3.2.4 KI & MPCl data

Both health and law enforcement KIs and MPCIs discussed the use of heroin as having decreased in response to the shortage, with limited availability, low purity and price concerns driving many users out of the market either to other drugs or some form of treatment.

Data from health KIs and MPCIs also discussed the impact on the use of heroin once this drug began to become more readily available. The KIs and MPCIs stated that the expected influx back into the heroin market did not occur. While some drug users were reported as withdrawing from treatment or stopping the use of other drugs to recommence their use of heroin, others were reported as continuing with using other drugs or began to use these other drugs in combination with heroin. Perceptions of the proportions of drug users who engaged in each of the three responses were not provided.

Several KIs discussed the heroin shortage as having fundamentally changed both the South Australian heroin and wider drug markets. The depressant and stimulant based drug using groups were described as, historically, being quite distinct. With the advent of the heroin shortage, however, these traditional boundaries were described as becoming blurred, with long term heroin users now also engaged in methamphetamine use and experimenting with other types of drugs.

3.2.5 Conclusion

The majority of qualitative feedback received from health and law enforcement KIs as well as MPCIs supports an interpretation of the quantitative data as evidence of decreased heroin use in South Australia. The decrease in heroin use appears to have been sustained up until the present time. Qualitative data reported that there was greater contact between the stimulant and depressant drug using groups as a consequence of the heroin shortage. While heroin users were discussed as now engaging in the use of stimulants it is not clear whether those who had typically just used stimulants are now beginning to experiment with heroin and other depressants post-shortage.

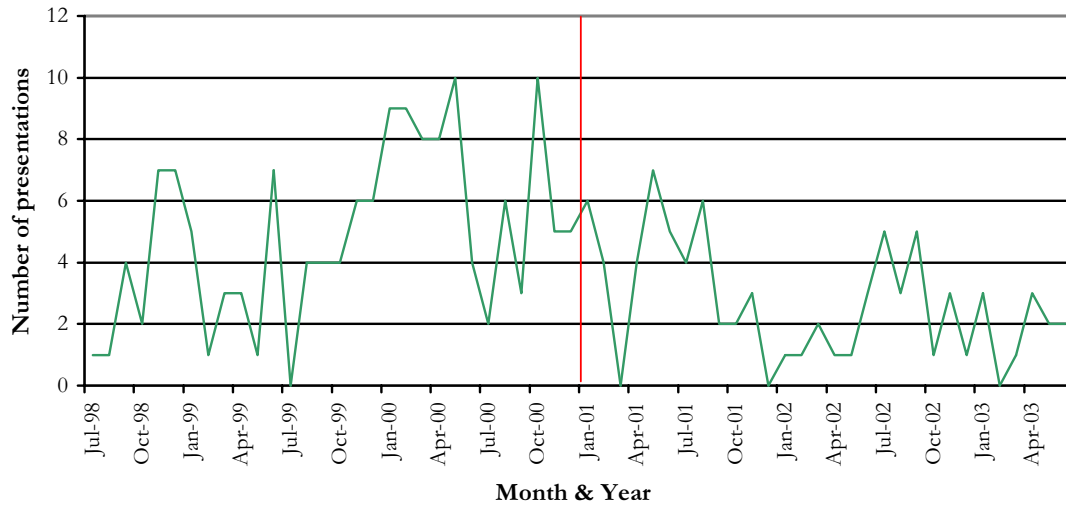
3.3 Methamphetamine use

3.3.1 Hospital data⁵

The number of methamphetamine-related RAH emergency department presentations are shown in Figure 3.4. The small number of cases and high variability precludes any attempts at analysis. The data for methamphetamine-related dependent/misuse separations from all South Australian hospitals presented in Figure 3.5 is less variable and the case numbers slightly higher. As can be seen a slow decline in separations has been evident since October 1999. There does not appear to be any change in separations at or around the time of the heroin shortage.

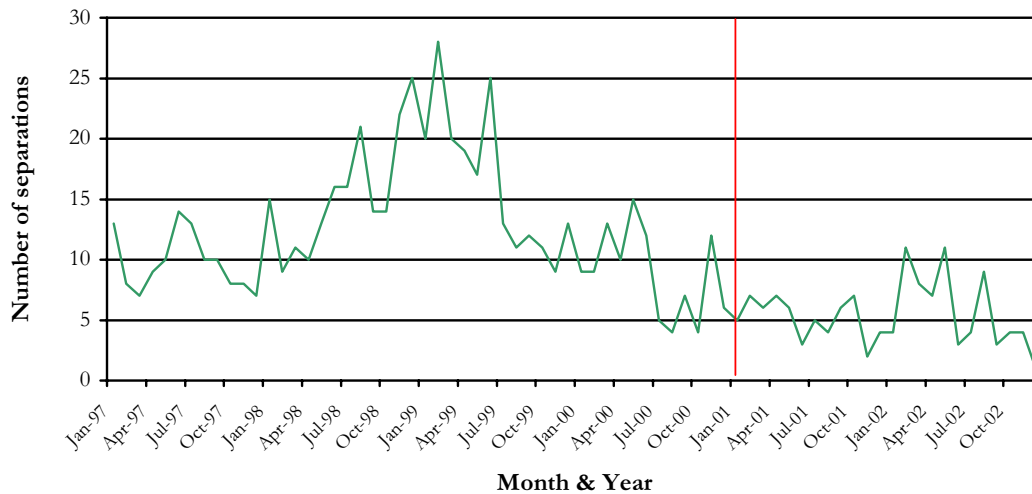
⁵Due to the particulars of ICD-10 coding it is not possible to separate data concerning methamphetamine abuse from caffeine related problems. The impact of high-caffeine designer soft drinks on the figures concerning methamphetamine use is unclear at this time. However, personal communication with NDARC researchers suggests that the impact is minimal and the majority of these presentations are related to methamphetamine use.

Figure 3.4: Number of methamphetamine-related presentations to Royal Adelaide Hospital emergency department, 1998-2003



Source: Knowledge Management Section, Information Management Services, South Australian Department of Human Services

Figure 3.5: Number of methamphetamine dependence/misuse separations from all South Australian hospitals, 1997-2002

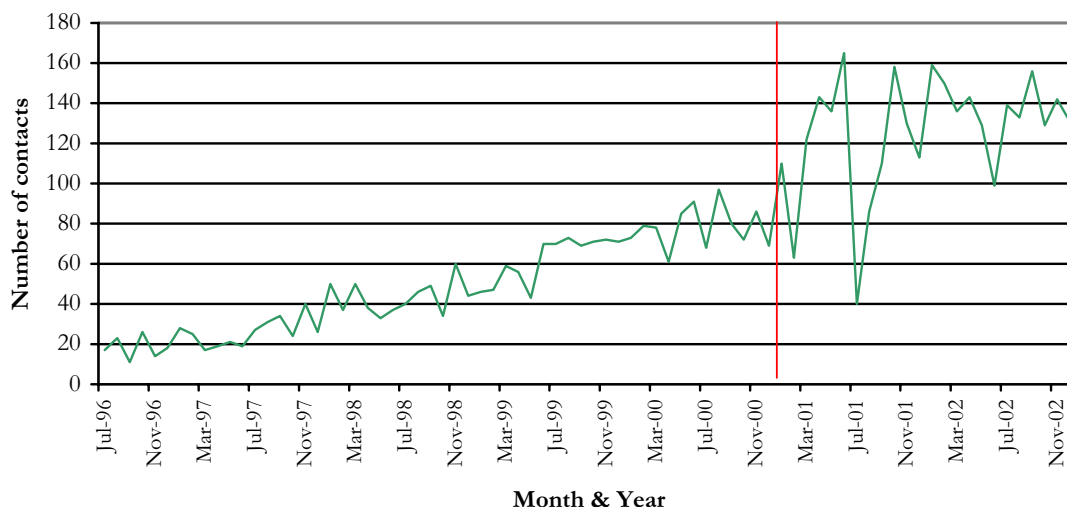


Source: Knowledge Management Section, Information Management Services, South Australian Department of Human Services

3.3.2 ADIS data

The ADIS data relating to methamphetamine shows a different pattern of behaviour. As can be seen from Figure 3.6 there has been a steady increase in contacts for methamphetamine in South Australia even before the shortage. A time series analysis revealed some evidence of a response to the heroin shortage, however the data proved to be too variable to be appropriately modelled and no conclusions could be drawn. The steep drop in ADIS contacts in July 2001 remains unexplained.

Figure 3.6: Number of ADIS contacts for methamphetamine, July 1996 - Dec 2002



Source: Knowledge Management Section, Information Management Services, South Australian Department of Human Services

3.3.3 IDRS data

Table 3.2 shows the proportion of IDUs interviewed for the IDRS that reported methamphetamine as the drug they prefer/use.

Table 3.2: IDRS data concerning methamphetamine use amongst IDUs

	Year			
	1999 (N = 100)	2000 (N = 107)	2001 (N = 100)	2002 (N = 100)
Drug of choice	22%	30%	37%	52%
Last injected drug	30%	34%	50%	60%
Most commonly injected drug	30%	34%	43%	57%

Source: South Australian Drug Trends (1999-2002), Illicit Drug Reporting System.

While the proportion of IDUs reporting methamphetamine as their drug of choice has been steadily increasing from 1999 onwards there is a sharp rise of 15 percent from 2001 to 2002. Methamphetamine has also consistently been the most commonly used drug and last drug injected for IDUs at proportions greater than those who claimed methamphetamine was their drug of choice. This could potentially indicate that methamphetamine may be more easily accessed or cheaper than other drugs and/or that it is commonly used as part of poly-drug using behaviour. Regardless of this speculation it is clear that during 2002 methamphetamine has become more prominent in the South Australian injecting drug use area. However, it cannot be determined from these statistics whether the increase in methamphetamine use was part of an ongoing trend or was as a consequence of the heroin shortage.

3.3.4 KI & MPCl data

Health and law enforcement KIs and MPCl consistently reported the uptake of methamphetamine as a common response of heroin users to the shortage. A law enforcement KI emphasised this transition to stimulant use by stating that prior to the heroin shortage a high crime suburb had been a heroin-based drug market but that it was now purely methamphetamine based. Another KI involved in law enforcement mentioned an increase in the number and sizes of methamphetamine based seizures. An overall shift in primary drug of choice to stimulants was repeatedly mentioned by both KIs and MPCls. This change in drug type, along with the attendant health issues of methamphetamine use, was discussed as being the most significant impacts of the shortage.

Qualitative feedback suggested that the reported rise in the use of methamphetamine was occurring prior to the heroin shortage. The heroin shortage was described more as contributing to this increase in methamphetamine use rather than being a primary cause. The ready availability of these drugs in South Australia was noted. The use of crystal methamphetamine was noted as being much more common than simple methamphetamine, however, respondents would often use the terms amphetamines and methamphetamine interchangeably so it was not generally possible to tease apart differences in the feedback regarding these drugs. A shift in the route of administration was noted, changing from oral to intravenous methamphetamine. This change in route of administration was described as relating to heroin users wanting to both attain maximum effect from the drug as well as relating to possible needle fixations.

Although only mentioned by one health KI, the heroin shortage may have had a slightly different effect within the Indigenous heroin-using population. A switch from heroin to methamphetamine and various “pills” was reported. However, the shortage was also seen to trigger a number of indigenous clients “dropping off” methadone maintenance to take up methamphetamine. This was a phenomenon that had not been reported for other heroin users who were enrolled in opioid maintenance programs prior to the shortage. The whole drug-using culture within the Indigenous community was noted as having changed as a consequence. While only one KI mentioned this response to the shortage this respondent was a specialist Indigenous worker with extensive contacts in that community.

3.3.5 Conclusion

Data obtained from hospital presentation and separations have shown a steady decrease in methamphetamine-related cases beginning pre-shortage. If the use of methamphetamine had increased during the shortage, as reported by both health and law enforcement KIs and MPCls, then one would expect increased numbers of presentations to hospitals. Why there should be a difference between the hospital and the qualitative data is unexplained at this time.

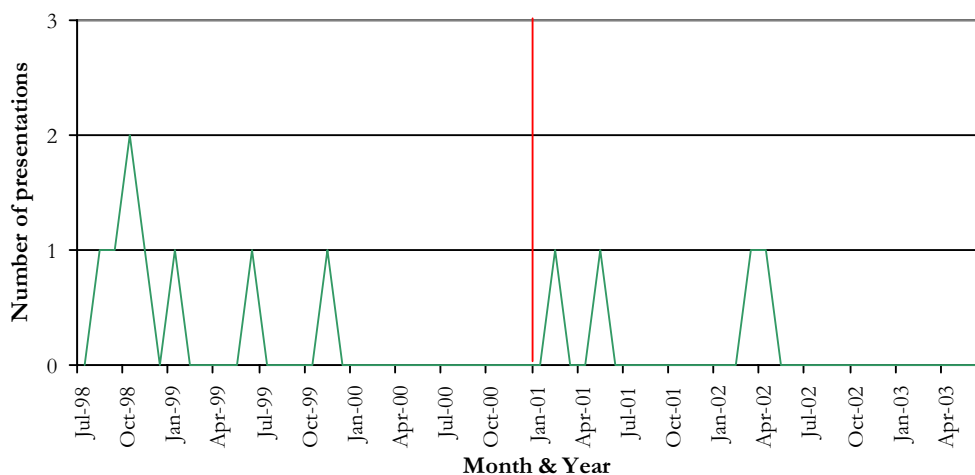
While the hospital based data showed no apparent increase in methamphetamine use, ADIS data did show an increase in the number of calls concerning methamphetamine use. Whilst this increase was not stable enough to warrant being viewed as a consequence of the heroin shortage it does highlight the increasing level of concern within South Australia concerning methamphetamine. Similarly, IDRS data shows a clear increase in the use of methamphetamine in recent years yet whether this increase was related to the heroin shortage is uncertain.

3.4 Cocaine use

3.4.1 Hospital data

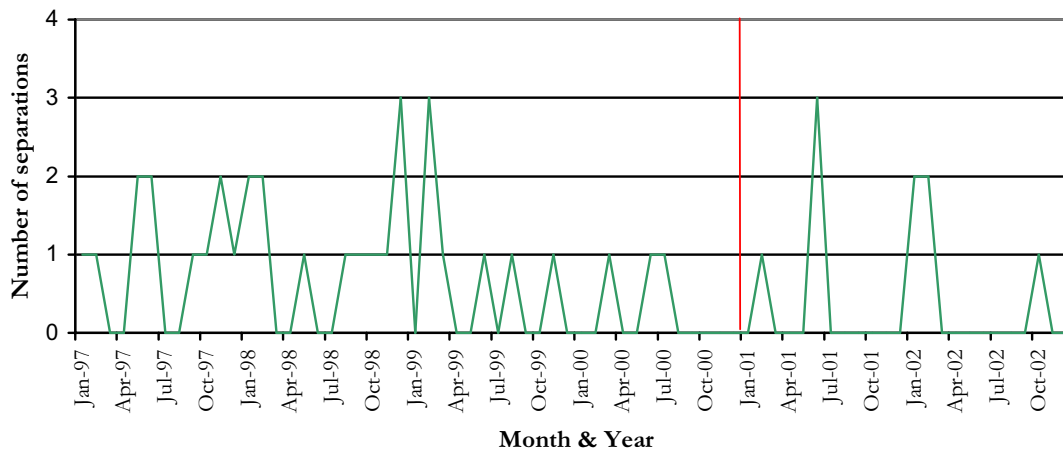
Hospital data regarding cocaine-related presentations is presented in Figures 3.7 and 3.8 for presentations and separations respectively. As can be seen the case numbers are too low to provide commentary on possible effects attributable to the heroin shortage.

Figure 3.7: Number of cocaine-related presentations to the Royal Adelaide Hospital emergency department, 1998-2003



Source: Knowledge Management Section, Information Management Services, South Australian Department of Human Services

Figure 3.8: Number of cocaine-related separations from all South Australian hospitals, 1997-2002



Source: Knowledge Management Section, Information Management Services, South Australian Department of Human Services

3.4.2 IDRS data

Table 3.3 shows the proportion of IDUs interviewed for the IDRS that reported cocaine as the drug they prefer/use.

Table 3.3: IDRS data concerning cocaine use amongst IDUs

	Year			
	1999 (N = 100)	2000 (N = 107)	2001 (N = 100)	2002 (N = 100)
Drug of choice	1%	4%	6%	4%
Last injected drug	0%	0%	0%	0%
Most commonly injected drug	0%	0%	2%	0%

Source: South Australian Drug Trends (1999-2002), Illicit Drug Reporting System.

As can be seen, the numbers are too low to interpret or suggest trends occurring due to the heroin shortage.

3.4.3 KI & MPCl data

Within a South Australian context, cocaine was described by law enforcement KIs as tending to be a very insular market, only accessed by white collar drug users who can pay the high prices for a drug with limited availability. Cocaine did not feature prominently in KI or MPCl responses regarding the impact of the heroin shortage. Only a few respondents noted any sort of increase in the use of cocaine in Adelaide and these emphasised that due both to its erratic availability and high price cocaine was not often used.

3.4.4 Conclusion

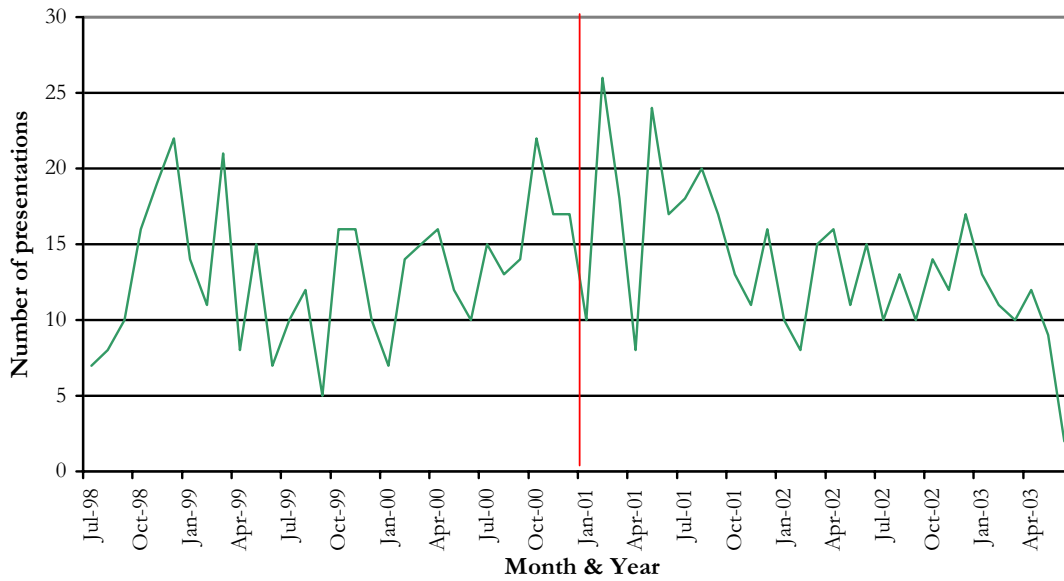
No statistically supportable change was apparent in the frequency of cocaine use as a consequence of the shortage.

3.5 Benzodiazepine use

3.5.1 Hospital data

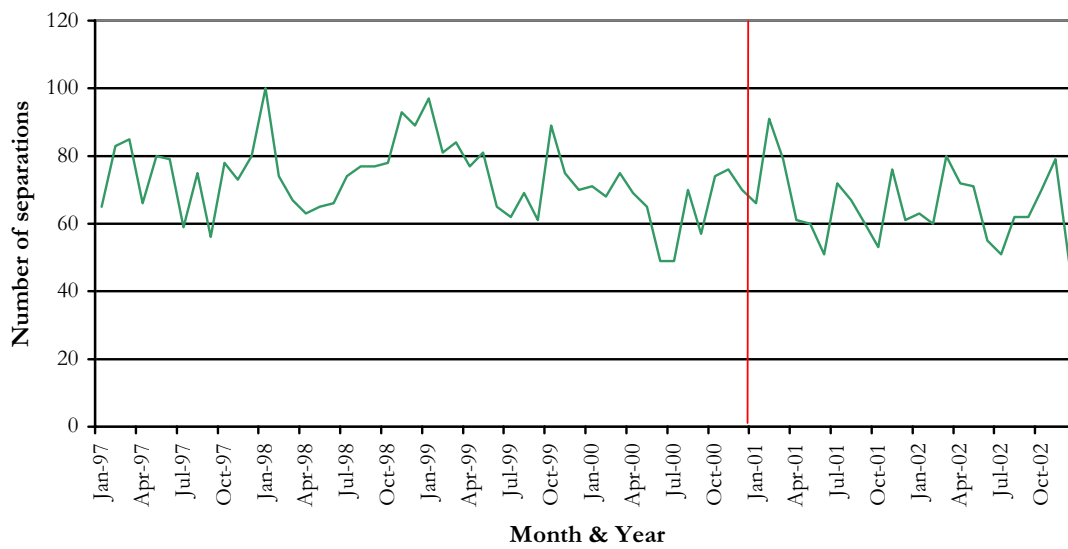
The number of presentations and separations for benzodiazepine-related cases are presented in Figures 3.9 and 3.10 respectively. Overall, the number of benzodiazepine-related separations has remained relatively stable. While there were some peak periods of increased activity shortly after the heroin shortage evident in both figures, the data is quite variable making it difficult to draw any conclusions as to cause.

Figure 3.9: Number of benzodiazepine-related presentations to the Royal Adelaide Hospital Emergency Department, 1998-2003



Source: Knowledge Management Section, Information Management Services, South Australian Department of Human Services

Figure 3.10: Number of benzodiazepine-related separations from all South Australian hospitals, 1997-2002



Source: Knowledge Management Section, Information Management Services, South Australian Department of Human Services

3.5.2 IDRS data

No IDUs reported benzodiazepines as their drug of choice in the IDRS survey in the years 1999 to 2002. In 1999, one respondent reported benzodiazepines as being their most frequently injected or last injected drug. Obviously, due to the lack of data no interpretation or trend analysis can be performed.

3.5.3 KI & MPCl data

Responses from KIs and MPCIs concerning benzodiazepine use were quite mixed, with some commenting that they were not aware of any increase in the use of benzodiazepines and others stating that there had been. It was noted by health KIs that benzodiazepine use was common amongst heroin users before the onset of the shortage.

A change in the form of administration of benzodiazepines was noted by respondents. While people did continue to use benzodiazepines orally, increased intravenous use was noted, with the injection of Temazepam or Unisom being repeatedly mentioned. One law enforcement KI mentioned an increase in the number of seizures for loose prescription pills, especially Temazepam.

The use of benzodiazepines seemed to serve a slightly different function than that of other drugs which heroin users were reported to have been using as a consequence of the heroin shortage. While still being used for the effects of the drugs themselves there was a fair degree of feedback from KIs and some MPCIs around using benzodiazepines in attempts to increase the effect of what heroin was available, with individuals taking these drugs before and together with heroin. The intravenous use of such drugs as anti-histamines and anti-epileptic drugs was also mentioned as having this goal. The use of Xanax, an anti-anxiety medication, and various anti-depressants were mentioned by some respondents, with a market developing for illicit quantities of these drugs. The use of these drugs was described as both to help manage heroin withdrawal symptoms as well as for their individual effects.

3.5.4 Conclusion

The impact of the heroin shortage in terms of an increase or decrease in the use of benzodiazepines remains unclear. However, the data does support the conclusion that these drugs are still being consistently used amongst heroin users but are associated more often with poly drug use and are not the primary drug of choice.

3.6 Cannabis

Quantitative data on hospital separations and presentations was unavailable, however, quantitative data on the provision of treatment for people presenting with problematic cannabis use can be found in *Section 7: Treatment*.

3.6.1 IDRS data

Within the IDRS a small number of IDUs reported cannabis as being their drug of choice, in 1999 (5%), 2000 (3%), 2001 (3%) and 2002 (3%). Despite the small numbers the heroin shortage does not seem to have impacted on the proportion of IDUs reporting cannabis as their drug of choice in the IDRS.

3.6.2 KI & MPCl data

The use of cannabis within the heroin using population was consistently discussed as being extremely high prior to the heroin drought. A few health KIs and MPCIs discussed an increase in the use of cannabis to help manage withdrawal symptoms or to compensate for the lack of heroin. Most felt that very high levels of cannabis use are very common amongst heroin users and reported no substantial change.

3.7 Changes in patterns of other drugs

3.7.1 Other opioids (eg methadone, morphine)

Quantitative data on hospital separations and presentations was unavailable, however, quantitative data on the provision of treatment for people presenting with opioid abuse use can be found in *Section 7. Treatment*.

IDRS data

Tables 3.4 and 3.5 show the proportion of IDUs interviewed for the IDRS that reported morphine and other opioids and methadone respectively as the drug they prefer/use.

Table 3.4: IDRS data concerning morphine and other opioid use amongst IDUs

	Year			
	1999 (N = 100)	2000 (N = 107)	2001 (N = 100)	2002 (N = 100)
Drug of choice	1%	3%	5%	7%
Last injected drug	1%	3%	11%	15%
Most commonly injected drug	1%	3%	11%	17%

Source: South Australian Drug Trends (1999-2002), Illicit Drug Reporting System.

The proportion of IDUs with morphine or other opioids as their drug of choice has been steadily increasing by two percent a year since 1999. There is no evidence to suggest that this pattern was associated with the heroin shortage. A clear difference can be seen, however, in relation to the data concerning the last drug injected and the most commonly injected drug. In 2001 the proportion of IDUs reporting the ongoing use of these drugs was more than twice the proportion of IDUs reporting it to be their preferred substance. It is possible that IDUs were using morphine and other opioids as substitutes for their preferred drug of choice. This trend has been maintained during 2002.

Table 3.5: IDRS data concerning methadone use amongst IDUs

	Year			
	1999 (N = 100)	2000 (N = 107)	2001 (N = 100)	2002 (N = 100)
Drug of choice	1%	1%	0%	0%
Last injected drug	8%	8%	4%	0%
Most commonly injected drug	7%	5%	2%	1%

Source: South Australian Drug Trends (1999-2002), Illicit Drug Reporting System.

In contrast to the trends observed in Table 3.4 the proportion of IDUs reporting that methadone had been the most commonly injected drug or that this was the last drug injected has fallen since 2000. However, the numbers involved are quite low so it is difficult to state that this decline was related to the heroin shortage. It is reasonable to state that the illicit, intravenous use of methadone is presently quite low across Adelaide.

KI & MPCl data

Most respondents discussed a rise in the market for diverted methadone, morphine and physseptone to help address heroin cravings. Hospital data is not available on the number of presentations or separations involving diagnoses of the use/abuse of other opioid so one cannot statistically confirm or refute this reported rise. However, data concerning overdose experiences related to other opioids is available and discussed in more detail in *Section 7: Treatment*. This data suggests that, at least at the beginning of the shortage, there was a small increase in the use of other opioids.

Respondents consistently mentioned that the use of diverted opioid based medications was intravenous. Heroin users were injecting liquid methadone and crushing morphine tablets or capsules (Kapanol and MS Contin) and mixing them with water so they could be injected. During this time methadone maintenance clients were reporting being pressured by drug using associates to sell their doses and to get their dosage increased so that there was more available to sell. This was noted as being highly tempting due to the potentially large financial gains available.

As heroin became more readily available in Adelaide the demand for these drugs was described as decreasing, however, the market for diverted opioid medications was seen as having been maintained through to the time of interview. The intravenous use of morphine, methadone and physseptone was still being experimented with, often in combination with heroin.

3.7.2 Alcohol

Quantitative data on alcohol-related hospital separations and presentations was not sought as there are too many confounding factors that would influence this data.

KI & MPCl data

As for the findings for cannabis, high levels of alcohol use were seen as endemic. A few respondents noted an increase in alcohol use to help manage withdrawal symptoms from heroin but most felt that levels of alcohol use had simply remained consistently high.

3.7.3 Ecstasy, hallucinogens, GHB, ketamine, 'party drugs'

Due to anticipated low numbers quantitative data on hospital separations and presentations was not sought.

IDRS data

The IDRS provided some information on party drug use. The numbers were too low to infer any trends and will not be reported here.

KI & MPCl data

Some health and law enforcement KIs noted somewhat of an increase in the use of the varied party drugs, however, this was not seen as being related to heroin users starting to utilise these drugs. All of the respondents who noted an increase in the use of these drugs provided the caveat that this increase was probably not due to the heroin shortage as heroin using groups and the 'party' scene were quite distinct.

3.7.4 Poly-drug use

KI & MPCl data

Poly-drug use amongst heroin users was noted as always having been quite high; however, some health KIs felt that the heroin shortage had increased such activity. This experimentation with differing types of drug combinations was described as attempts to attain similar physiological effects as that induced by heroin. The drug combinations were often described as consisting of quite bizarre or extreme cocktails of drugs. In addition to attempts to induce effects similar to heroin this increased 'chaotic' drug taking was seen as reflective of the heroin shortage having figuratively 'opened the door' to experimentation with a wider range of substances for people who had previously primarily used heroin. An impression gained from the KIs was that this increased poly-drug use had been maintained although at a lower prevalence rate as heroin became more readily accessible.

3.8 Summary

The qualitative and quantitative data highlights a number of trends relating to the impacts of the heroin shortage on the use of various drugs:

- While not being able to statistically demonstrate an effect of the heroin shortage there appears to have been a general decrease in the use of heroin in South Australia which has been maintained through to the current time;
- Some Indigenous drug users were reported as having left opioid based pharmacotherapy programs once the heroin shortage began and took up methamphetamine use;
- Cocaine use is infrequent in South Australia and no changes in this market as a response to the heroin shortage were observed;
- The use of benzodiazepines appears to have remained comparable to pre-shortage levels;
- A market for diverted opioid medications has been established and subsequently maintained. This is mainly focussed around intravenous use and the use of opioids other than methadone;

- The barriers between the traditionally distinct depressant and stimulant using groups were described as having been broken down and an impression gained from both KI and IDU feedback is that experimentation with a range of drugs is now more common amongst heroin users; and
- KI feedback suggests that there has been an increase in both the quantity and the range of drugs involved in poly-drug use.

Whether there has been a rise in methamphetamine use as a consequence of the shortage, as evidenced by hospital presentations and separations, is a more contentious issue. The presented hospital data, which suggests no increase in the use of methamphetamine, conflicts with both qualitative feedback and data obtained from ADIS that would suggest it had.

4 Injecting Drug Use

Summary

- Intravenous drug use has remained the preferred route of drug administration for the heroin users regardless of the drug used.
- The heroin shortage did not decrease the extent of injecting drug use in South Australia as evidenced by both qualitative and quantitative data sources.
- A possible increase in injecting drug use in 2002/2003 over previous years was identified. The quantitative data available to this study is insufficient to state that this occurred as a consequence of the heroin shortage.
- No increase in the rates of needle sharing amongst drug users was evident in the qualitative data.
- An increase in the injection of essentially non-injectable drugs was consistently reported in the qualitative data available to this study.
- An increase in vascular care problems such as infections and abscesses was noted by qualitative feedback. This was reported by KI to be attendant on the rise of intravenous use of drugs in a non-injectable form.
- An increase in incident cases of HIV was noted at the time of the shortage. Quantitative data suggests that this was not related to the heroin shortage.
- A drop observed in hepatitis C infections in 2002 remains unexplained. However, from the available quantitative data it seems likely that this decrease was distinct from the heroin shortage.

4.1 Introduction

The same drug can have various routes of administration and a drug's effect and, to some degree, health impacts may vary depending how it is used. This section examines potential changes in the intravenous use of drugs to explore how the heroin shortage may have impacted on individual drug users. The area of intravenous drug use is of particular concern due to the increased impact drugs used in this manner have on the body as well as its role in the transmission of blood borne viruses (BBV)(MacDonald *et al.*, 1996; Levine *et al.*, 1994).

To this end, an investigation was made of the extent to which it was possible to detect any changes (or otherwise) in:

- the extent of injecting drug use;
- injecting practices and risk behaviour;
- injection related problems; and
- blood borne virus transmission including hepatitis C and HIV.

The data used in this section includes:

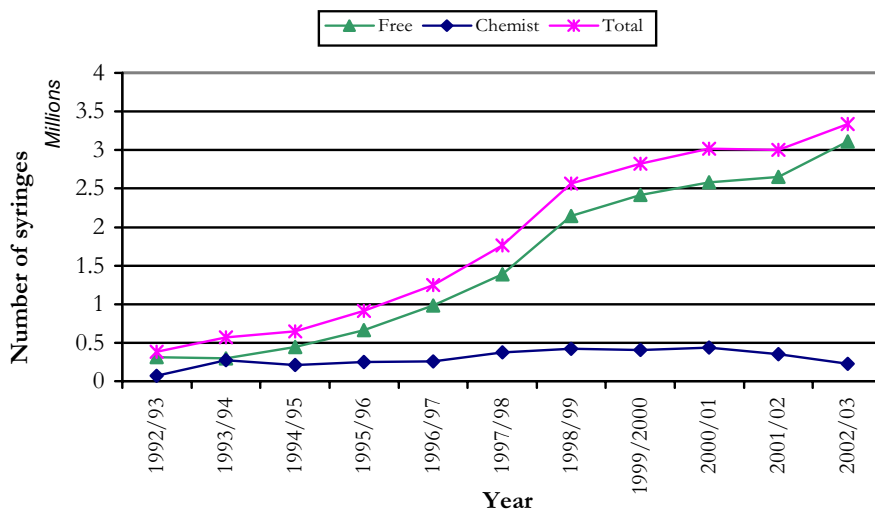
- Data from the South Australian Clean Needle Program (CNP), Drug & Alcohol Services Council;
- Data from STD Services (Clinic 275), South Australian Department of Human Services; and
- Qualitative KI and MPCl data.

4.2 Extent of injecting drug use

4.2.1 CNP data

Data on the number of syringes that the CNP have distributed has been extracted on both an annual and monthly basis. Figure 4.1 shows the number of syringes distributed by the CNP annually from the 1992/93 financial year to 2002/03. Such data must be interpreted with caution: for example, a reduction in the number of needles distributed by an NSP may reflect the fact that it was closed for some period of time; that operating practices may have changed (e.g. bulk distribution was ceased). Conversely, a *lack* of a change may reflect, for example, more frequent use of needles by a smaller group of people who inject other drugs such as cocaine or methamphetamine. Nevertheless, it is possible to triangulate these data against KI reports to assess the validity of the trends observed.

Figure 4.1: Number of syringes distributed by the South Australian Clean Needle Program, 1992/93 – 2002/03

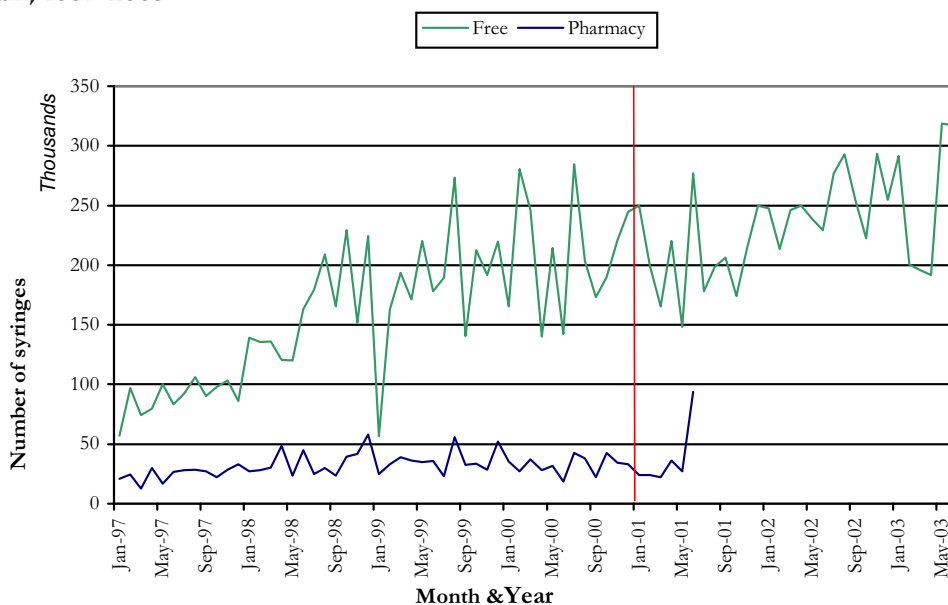


Source: Clean Needle Program, Drug & Alcohol Services Council Inc.

There has been a steady upward trend in the number of syringes distributed by the CNP in SA since the early 1990s. The total number of syringes distributed annually appears to plateau between the financial years 2000/01 and 2001/2. In 2002/03 the number of syringes distributed has risen again. It can be seen from Figure 4.1 that the free needle distribution service in South Australia has consistently accounted for the majority of the syringes distributed.

Data showing the number of needle/syringes distributed on a monthly basis, from 1997 to 2003, is represented in Figure 4.2. A monthly break down of the number of syringes distributed by the pharmacy scheme is not available after June 2001. While there has generally been an increase in the numbers of syringes distributed each month this has been a steady and highly variable increase. The data within Figure 4.2 does not indicate an impact on needle/syringe distribution attributable to the heroin shortage.

Figure 4.2: Number of syringes distributed each month by the South Australian Clean Needle Program, 1997-2003



Source: Clean Needle Program, Drug & Alcohol Services Council Inc

4.2.2 KI & MPCl data

Both health and law enforcement KIs as well as MPCIs reported that injecting drug use was the preferred route of administration for heroin users. Injecting drug use was reported by KIs as being favoured by this population irrespective of the drug being used. These respondents indicated that the extent of injecting drug use had not decreased during the heroin shortage.

Feedback received from KIs and MPCIs also discussed the possible impact of the use of differing drugs during the heroin shortage on the extent of injecting drug use. Health KIs reported that the effect of methamphetamine is longer lasting than heroin and some stated that the increase in the use of methamphetamine, while being intravenous, would generally result in decreased frequency of injection. Other respondents refuted this statement suggesting that while methamphetamine may have a longer lasting effect than heroin people using methamphetamine may frequently inject more of this drug as the initial effects begin to recede. This was referred to as 'topping up'. Health KIs reported that this behaviour was not seen with the use of heroin. KIs who discussed 'topping up' felt that the overall extent of injecting drug use had increased during the shortage as a consequence of the uptake of methamphetamine by many heroin users.

Morphine was also noted by some health KIs as having a longer lasting effect than heroin. This was seen as potentially decreasing the frequency of injections for those individuals who had replaced or subsidised their use of heroin with morphine.

In addition to information regarding the extent of injecting drug use, health KIs also discussed the CNP. Due to the history of the program in South Australia, KIs noted that most drug dependent people made extensive use of this service and, as such, at the present time this data was a reliable indicator of the extent of injecting drug use in South Australia.

4.2.3 Conclusion

The quantitative data shows a general increase in the number of syringes being distributed. When this data is analysed on a monthly basis this increase is reflective of a pre-existing upward, though variable trend and cannot be directly attributed to the impact of the heroin shortage. The qualitative data touches on the issue of how the types of drugs substituted for heroin are being used and indicates that it could be a factor that will impact on the extent of injecting drug use in South Australia. However, the impact of this data is limited by an inability to accurately track in a quantitative manner both the size of the drug using community and the proportions of the community that use particular types of drugs.

The generally increasing number of syringes being distributed by the CNP when combined with KI feedback concerning the reliability of this data indicates that injecting drug use has increased to some degree. However, there is insufficient evidence to definitively state that this increase occurred as a consequence of the heroin shortage. It can be stated, however, that the heroin shortage did not decrease the extent of injecting drug use in South Australia.

4.3 Injecting practices and injecting risk behaviour

4.3.1 KI & MPCl data

Quantitative data on this issue is not available and only KI and MPCl data is included in the following discussion. In relation to the practice of needle sharing, health KIs reported that due to the accessibility of the CNP, deliberate sharing of needles was an uncommon practice in South Australia prior to the heroin shortage. Feedback from both health KIs and MPCIs stated that there had been no discernible change in the amount of needle sharing behaviour during and after the heroin shortage.

Some health KIs reported that drug users at the beginning of the shortage were more likely to re-use their own syringes. KIs attributed this change in behaviour directly to the shortage of heroin. If an individual had been able to find some heroin but did not have a clean syringe rather than risk missing out KIs reported that people would re-use their old syringes. This change in behaviour was discussed by KIs as potentially resulting in an increase in infections and 'dirty hits'. This behaviour was only mentioned in relation to the use of heroin and only for the earlier stages of the shortage. What is unclear from the feedback is the prevalence rate of this behaviour amongst the heroin using community at the time. Additionally, it is uncertain for how long the increased rate of re-use of injection equipment was maintained.

A change in injection practices frequently mentioned by both KIs and MPCIs was the increase in the injection of drugs that were in non-injectable forms, such as morphine tablets, liquid methadone and benzodiazepines. As discussed in *Section 3: Changes in patterns of drug use* it was reported that heroin users began to use a range of drugs other than heroin during the heroin shortage. Regardless of the forms of these drugs, the qualitative data states that this drug use was intravenous. Drugs that come in tablet form were reported to have been crushed and mixed with liquid prior to injection. As these drugs were not designed for injection KIs stated that this practice can be damaging to veins. The vascular care issues associated with the increase of injection of non-injectable drugs are detailed in *Section 6: Changes in the health effects of drug use*.

To assist in the injection of non-injectable drugs health KIs reported an increase in the use of wing infusions. Wing infusions are large bore syringes with two struts to help guide its insertion into a vein. As these syringes are large bore they allow for the injection of quite viscous substances as well as crushed tablets that can otherwise potentially clog normal syringes. Potential impacts of the use of wing infusions reported by health KIs included increased damage to veins and potential increased risk of infection. It was reported by one KI that wing infusions were more likely to be re-used as they had to be purchased. This was seen as potentially leading to increased risk of BBV infections

Other risk behaviour amongst the injecting drug users noted by health KIs was the sharing of mixing equipment such as spoons, not realising that this can be an infection risk. This risk behaviour was not reported to have been limited, or particular, to the heroin shortage.

4.3.2 Conclusion

An increase in un-safe injecting practices and injecting risk behaviour was apparent at the time of the shortage. This included the injection of non-injectable drugs and may have included the re-use of injecting equipment. No increase in needle sharing was reported.

4.4 Injection related problems

4.4.1 KI & MPCl data

Quantitative data on this issue is not available and only KI and MPCl data is included in the following discussion. The most significant and consistently reported injection related problem was an increase in vein damage and other vascular problems such as infections at the site of injection. Respondents directly attributed this increase to the rise in the injection of drugs not designed for this manner of use. The most commonly mentioned drugs that were being misused in this manner were: Temazepam, Kapanol, Normison, Unisom, Morphine and Methadone.

The primary consequence of the injection of these drugs according to health KIs has been an increased number of abscesses and infections as well as collapsing veins. Some health KIs also

mentioned a concern with the injection of actual Unisom caps. This was associated by KIs with a risk of gangrene as they could subsequently block the flow of blood within the vein. It is not entirely clear from the feedback whether the contents or the entirety of the Unisom cap would be injected but from other discussions it seems likely that people would first melt the capsule and then inject it.

As discussed above, KIs mentioned an increase in the use of wing infusions to assist with the injection of essentially non-injectable drugs. Some health KIs reported that the use of these large bore needles would tend to inflict more damage as drug users try to find a vein.

Another injection related problem associated with the heroin shortage mentioned by KIs was the impurities present in the drugs being used. What heroin was available was reported by KIs and MPCIs as having been 'cut' with a wide range of potentially caustic substances. Key Informants reported that acid is used during the later stages of methamphetamine production. With the increased demand for this drug it was reported that this acid was not always being properly washed out. Consequently, some drug users may have injected trace elements of acid, possibly leading to infection as well as collapsed veins.

4.4.2 Conclusion

With the increasing practice of injecting non-injectable drugs, a rise in infection related problems was reported by KIs. The primary consequences of poor injecting practices were increased numbers of abscesses, infections and collapsed veins.

4.5 Blood borne virus transmission

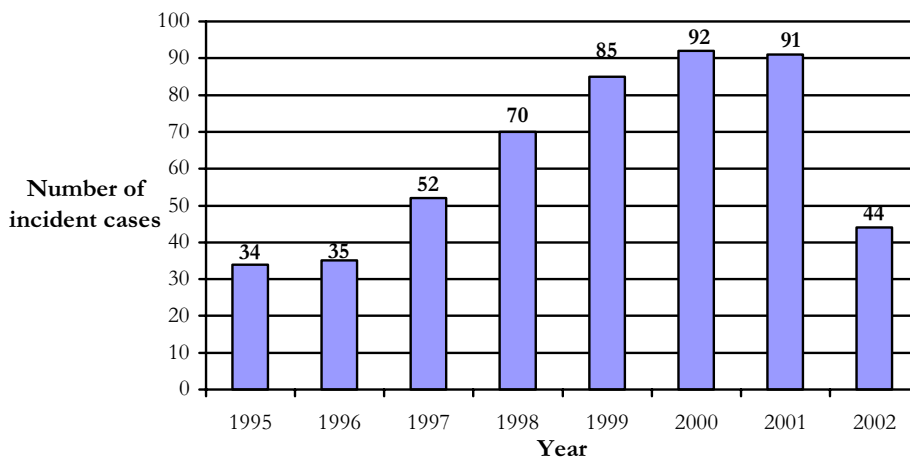
Changes in seroconversion rates for blood borne viruses associated with injecting drug using groups, specifically HIV and Hepatitis C, could be reflective of potential changes in drug injecting practices brought about as a consequence of the heroin shortage (Data to explore this issue has been gathered from the Epidemiologic Reports of Clinic 275 in Adelaide. Clinic 275 is part of the Royal Adelaide Hospital and is a free sexual health clinic (part of STD services, DHS) that also engages in a State-wide monitoring role regarding sexually transmitted diseases).

4.5.1 Hepatitis C

STD services data

Hepatitis C, due to its blood-to-blood transmission and highly infectious nature, can be associated with intravenous drug use. The number of new diagnoses for hepatitis C in each year, from 1995-2002, is shown in Figure 4.3.

Figure 4.3: Number of incident cases for Hepatitis C in South Australia, 1995-2002



Source: STD Services, South Australian Department of Human Services

As can be seen, there has been a steady increase in Hepatitis C incident cases up until 2001 followed by a marked decrease of over 50% in 2002; from 91 cases down to 44. Of the 2002 incident cases the vast majority 86.4% were attributed to injecting drug use (Sexually Transmitted Diseases in South Australia, Epidemiological Report No. 16: 2002). For 2001, of the 88 incident cases where data was available 92% (Sexually Transmitted Diseases in South Australia, Epidemiological Report No. 15: 2001) were attributed to injecting drug use. Consequently, it is apparent that injecting drug use is the key factor in the transmission of Hepatitis C in South Australia.

The heroin shortage does not seem to have impacted on the number of incident cases in 2001 though why there should be such a marked decrease in the total number of incident cases in 2002 is unclear. As discussed above the overall frequency of injecting has not changed substantially so this factor should not have impacted on rates of hepatitis C incident cases. The available data (KI only) regarding the total number of IDU in South Australia did not suggest any significant decrease in these numbers.

There has been no substantial reduction in the number of hep C tests carried out in SA (Sexually Transmitted Diseases in South Australia, Epidemiological Report No 16: 2002). As such it is reasonable to assume an actual change in the incidence of hepatitis C has occurred.

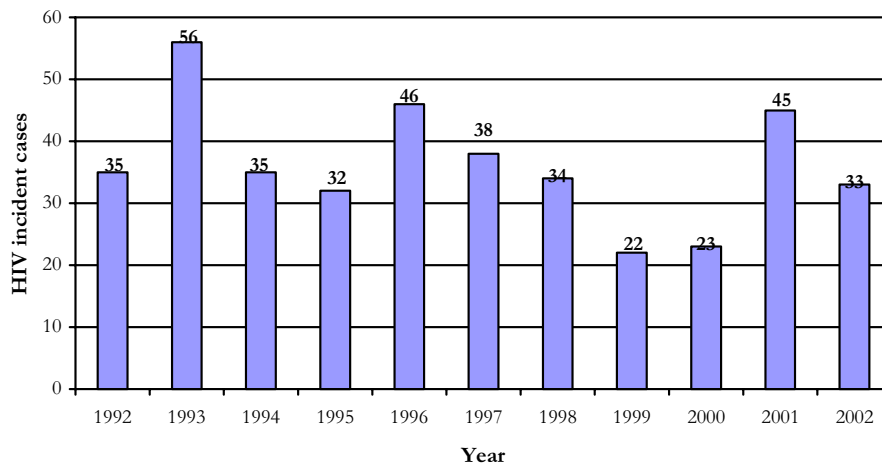
Conclusion

The heroin shortage did not impact on the number of hepatitis C cases. If the reports from KIs and MPCIs on unsafe injecting practices, consisting primarily of needle re-use as opposed to sharing, are correct then this result would be expected.

4.5.2 HIV

STD services data

The number of incident cases for HIV infection in South Australia is presented in Figure 4.4. The numbers of HIV incident cases have been steadily decreasing in South Australia since 1996 before experiencing a sharp rise in 2001, the year of the heroin shortage. Examination of the recorded risk factors associated with HIV transmission indicates it is unlikely that the heroin shortage impacted on the rates of HIV incident cases.

Figure 4.4: Incident cases of HIV in South Australia, 1992-2002

Source: Sexually Transmitted Diseases in South Australia. Epidemiological Report No. 16: 2002

HIV incident cases in South Australia are more strongly related to male homosexual contact than injecting drug use (Sexually Transmitted Diseases in South Australia. Epidemiological Report No. 15: 2001). There is also a recognised national and international trend in Western societies concerning a recent rise in HIV infections amongst homosexual men (Smith and Van de Ven 2001).

4.5.3 Conclusion

There has been a decrease in the incident cases of hepatitis C in 2002. However, the factors underlying this decrease remain unexplained. It seems unlikely that this decrease could be directly attributable to the heroin shortage. There was a rise in HIV incident cases in 2001 after a four year downward trend. However, upon examination of the risk factors associated with this transmission the increase in HIV incidents around the time of the shortage is unlikely to have been a consequence of the heroin shortage.

4.6 Summary

The preceding analysis utilised both quantitative and qualitative data in an attempt to identify changes in injection practices and injection related harms as a consequence of the heroin shortage. Some key findings from the quantitative data were identified:

- The extent of injecting drug use in South Australia has remained stable during the heroin shortage;
- A potential increase in the extent of injecting drug use in 2002/2003 was identified;
- A drop in Hepatitis C incident cases in 2002 remains unexplained and it is unclear if, or how, the heroin shortage may have impacted on this; and
- There was an increase in HIV incident cases around the time of the shortage, however, on balance this increase is not related to the heroin shortage.

The qualitative data suggested:

- A marked increase in the injection of drugs which are in a non-injectable form; and
- Increased vascular care difficulties associated with the inappropriate injection of drugs.

5 Changes in the Number of Heroin Users

It is not possible at this time to state with any certainty the numbers of current heroin users in South Australia. Some feedback gained from MPCIs suggests an increase in the number of heroin users with a recent influx of younger dealers helping to spread the use of heroin. MPCIs who commented on this issue stated that previously, the heroin using community had had reasonably close links and that if one was involved in the scene for any length of time they would tend to know the other heroin users in Adelaide. At the present time this was reported as no longer being the case. However, such feedback is of course highly vulnerable to the individuals networking skills and attitudes. Consequently, with the data presently available it is not possible to make any accurate statements as to the numbers of heroin users in South Australia. However, please refer to the *Changes Accompanying the Reduction in the Availability of Heroin* section in the *National report* of this project.

6 Changes in Health Effects of Drug Use

Summary

- The number of heroin overdoses and opioid related deaths has decreased as evidenced by quantitative and qualitative data sources.
- Immediately following the onset of the shortage an increase in the number of overdoses for opioids other than heroin, including methadone and morphine, was noted but this has not been sustained.
- Quantitative data on methamphetamine overdose is quite variable and, despite some small peak periods of increased numbers of overdoses after the heroin shortage began, there is insufficient evidence to say that the heroin shortage affected the number of methamphetamine overdoses.
- In contrast, KIs reported an increase in the number of heroin users using methamphetamine and expected a rise in overdose cases.
- Mental health difficulties were discussed by KIs as having increased markedly, along with an attendant increase in violent behaviour, attributed to increased methamphetamine use. These difficulties included psychosis, irrational behaviour and paranoia as well as increased depression and anxiety.
- The only available quantitative data to examine the rise in mental health issues is the number of admissions and separations due to drug-related psychosis from hospitals. The quantitative data did not show any sustained increase in the numbers of people with drug-related psychosis.
- KI reports of a large increase in uptake of methamphetamine was not reflected in an increase in the number of methamphetamine overdoses.

6.1 Introduction

The use of illicit drugs and misuse of licit drugs can have adverse impacts on the user's physical and mental health. The nature and extent of problems associated with such use will be dependent upon the substances used, frequency and magnitude of use and the circumstances of such use. As changes to drug use patterns may result in varied outcomes a number of data sources have been accessed to examine changes in the health impacts of drug use due to the heroin shortage.

The data used in this section includes:

- Data from the Knowledge Management Section, Information Management Services, South Australian Department of Human Services:
 - drug overdose separations from all South Australian hospitals;
 - emergency department admission at the Royal Adelaide Hospital; and
 - drug-related psychosis presentations and separations across South Australian hospitals.
- Data from the Australian Bureau of Statistics (ABS), concerning opioid related deaths; and
- Qualitative Key Informant data.

6.2 Drug Overdose

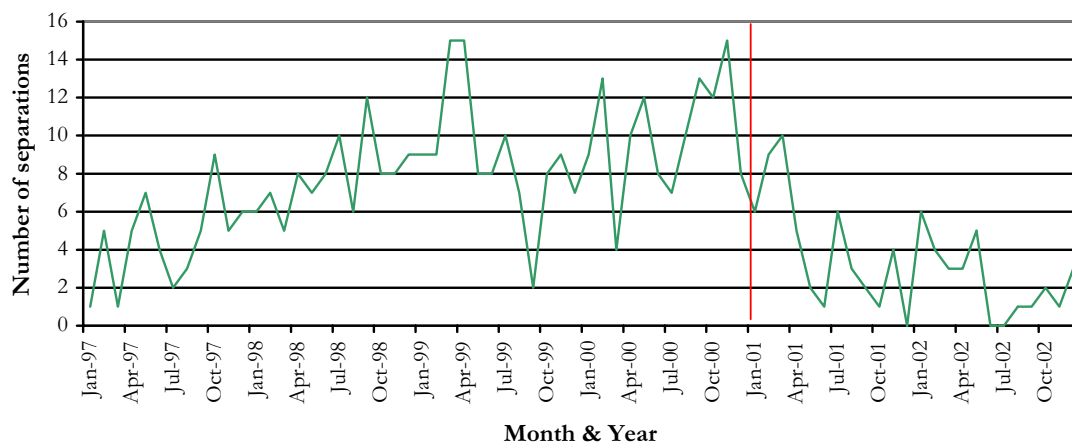
Statistical data relating to recorded overdose experiences for heroin/other opioids and methamphetamine is presented below. Information on opioid-related deaths is also provided.

6.2.1 Heroin and other opioids

Hospital data

Figure 6.1 presents heroin overdose separations⁶ from all South Australian hospitals from 1997 to 2002. There is a readily apparent downward trend in the number of heroin overdose hospital separations in South Australia since the time of the shortage. While case numbers are low the downward trend appears to have been stable since January 2001.

Figure 6.1: Number of heroin overdose separations from all South Australia hospitals, 1997-2002

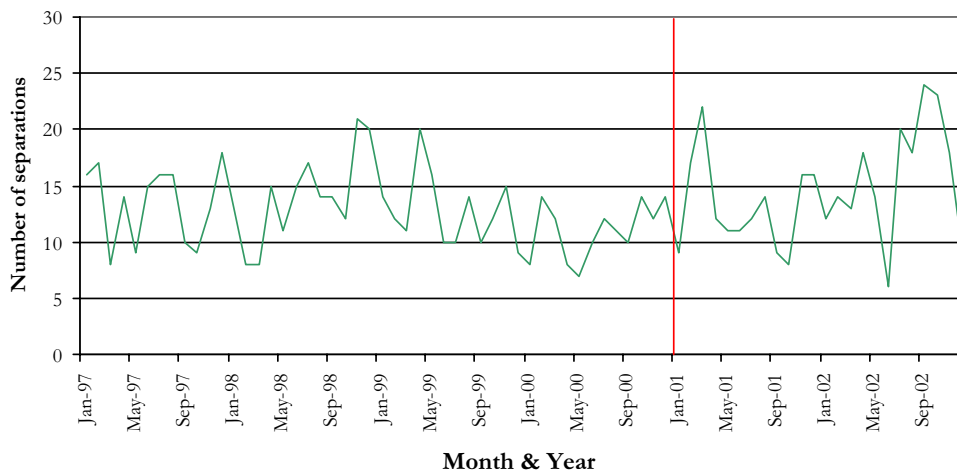


Source: Knowledge Management Section, Information Management Services, South Australian Department of Human Services

⁶ Separation data is the final diagnosis given by a hospital as to a patient's presenting issue. As such, this data more accurately reflects the actual health issues of a client than presentation data.

An examination of overdose hospital separations for other opioids, such as methadone, morphine, codeine and pethidine reveals a slightly different pattern. As can be seen in Figure 6.2 towards the end of 2002, a slight increase in the number of other opioid overdose hospital separations can be observed. The spike in February and March 2001 could be explained by heroin users transferring their use from heroin to other opioids (substituting other opioids for heroin).

Figure 6.2: Number of other opioid overdose separations from all South Australian hospitals: 1997-2002 (methadone, morphine, codeine, pethidine, etc.)

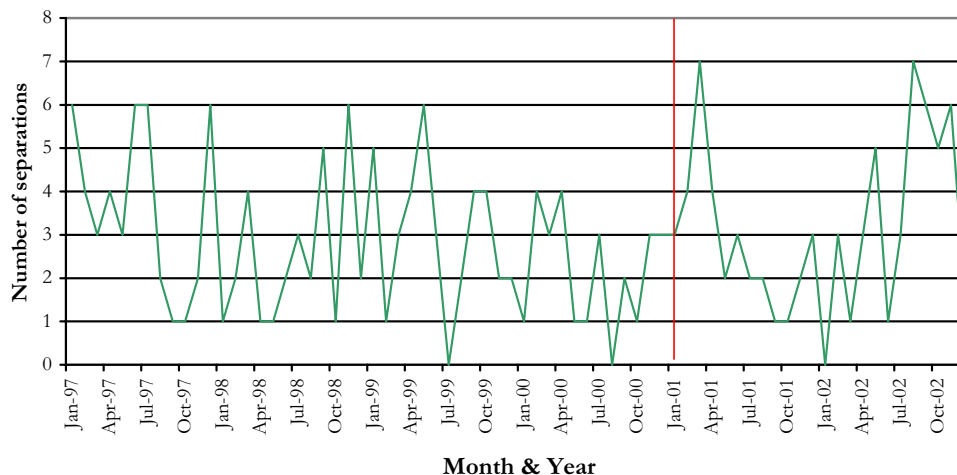


Source: Knowledge Management Section, Information Management Services, South Australian Department of Human Services

The South Australian hospital separation data for diverted methadone and other opioid overdoses is presented in Figures 6.3 and 6.4, respectively. The number of methadone overdoses seems to have increased somewhat at the beginning of the heroin shortage and then stabilised to pre-shortage levels before increasing again towards the end of 2002. However, given the small number of cases occurring within the South Australian sample considerable caution needs to be exercised in assessing the validity of this result.

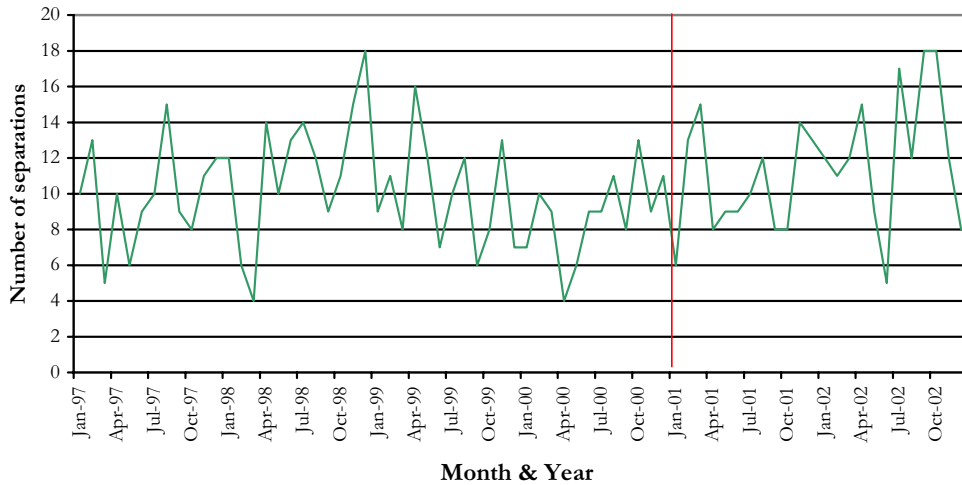
For overdoses associated with opioids, other than heroin and methadone, there seems to have been a slight increase from the time of the heroin shortage through to late 2002. Once again the low numbers involved and the variability from month to month means that no firm conclusions can be drawn regarding the impact of the heroin shortage on overdoses from other opioids.

Figure 6.3: Number of methadone overdose separations from all South Australian hospitals, 1997-2002



Source: Knowledge Management Section, Information Management Services, South Australian Department of Human Services

Figure 6.4: Number of other opioid overdose separations from all South Australian hospitals, 1997-2002

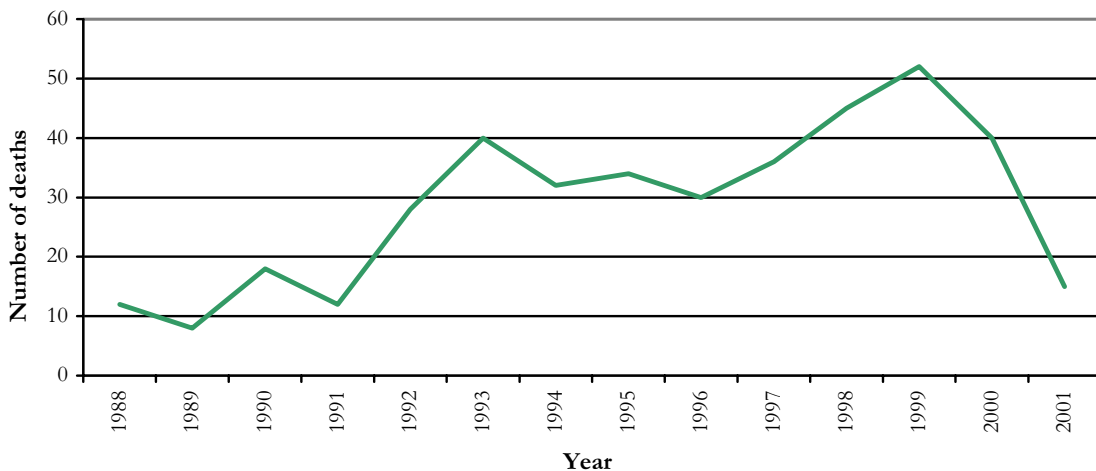


Source: Knowledge Management Section, Information Management Services, South Australian Department of Human Services

ABS data

Opioid-related deaths for South Australia are presented in Figure 6.5. A direct comparison with the other data in this section is somewhat problematic as opioid-related death data was only available on a year-to-year basis. The resultant loss in resolution precludes closer analysis of any impact in the time period surrounding the heroin shortage. The annual trend in opioid-related deaths as indicated by Figure 6.5 reveals a marked decrease in mortality from 2000 to 2001, commencing in mid 1999.

Figure 6.5: Opioid-related (heroin, opium, codeine, methadone and morphine) deaths in South Australia by year, 1988-2001



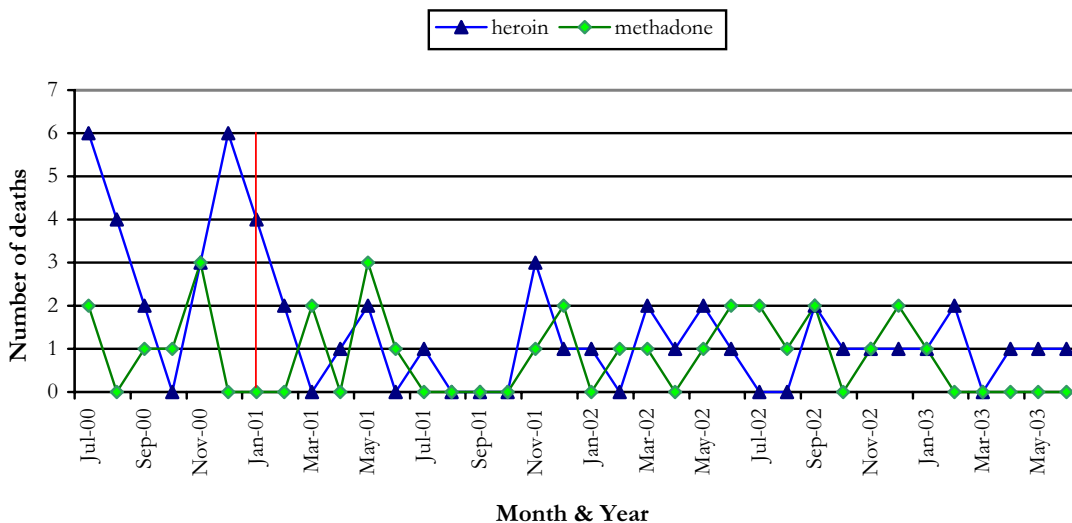
Source: Australian Bureau of Statistics mortality unit record data collection, 1988-01.

At the time of project completion data was not available from the ABS for 2002. As a result the longer term impacts of the heroin shortage on opioid-related deaths cannot be commented upon.

The number of deaths specifically attributed to heroin and methadone is provided in Figure 6.6. Very few cases of heroin or methadone overdose deaths are recorded in South Australia in an average month. The limited number of cases coupled with the restricted pre-shortage sampling

timeframe (6 months) precludes any comment although the number of heroin deaths in July to January 2000 appears much greater than in July to January 2001.

Figure 6.6: Heroin and methadone related deaths in South Australia, July 2000 - June 2003



Source: Australian Bureau of Statistics mortality unit record data collection, 1988-01.

KI & MPCl data

Many KIs, both health and law enforcement, reported a decrease in the number of heroin overdoses both fatal and non fatal as a consequence of the shortage. The decrease was thought to have been sustained for a period of time after the shortage. A number of health KIs reported an increase in non-fatal heroin overdoses in early 2003. The KIs suggested that the increase was associated with a rise in the purity of heroin.

Additionally, one medical practitioner working in an emergency department noted that the rise in heroin overdoses was accompanied by an increase in patient seizures. This was described as a new phenomenon and was suggested to be most likely linked to poly drug use. Quantitative evidence for the association between heroin overdose and increased patient seizures is unavailable at this time.

Conclusion

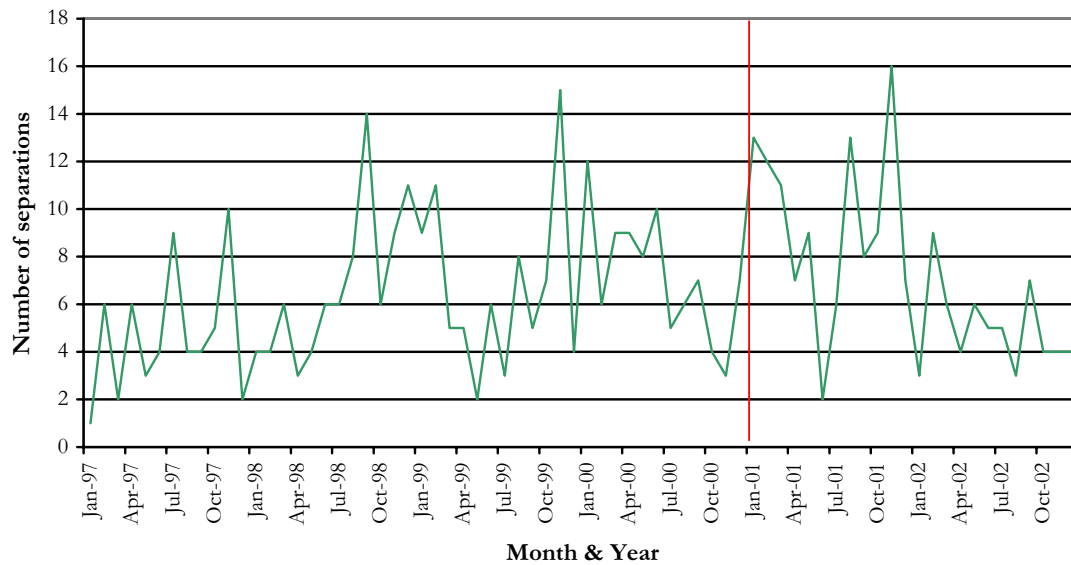
In summary, the number of fatal and non-fatal heroin overdoses can safely be said to have reduced since the heroin shortage. There may have been some increase in overdoses associated with the use of other opioids. This conclusion is evidenced by both quantitative and qualitative data sources.

6.2.2 Methamphetamine

Hospital data

Data regarding methamphetamine overdose hospital separations in South Australia is presented in Figure 6.7. Very few methamphetamine overdose separations are recorded each year and as a result caution needs to be exercised in attempting to infer trends based on the data presented in Figure 6.7. With this caveat in mind, the figure appears to indicate two peaks in methamphetamine overdoses since the time of the shortage, the first occurring in January 2001 and the second in November 2001. A time series analysis failed to confirm that any changes in the data were attributable to the impact of the heroin shortage.

Figure 6.7: Number of methamphetamine overdose separations from all South Australian hospitals, 1997-2002



Source: Knowledge Management Section, Information Management Services, South Australian Department of Human Services

KI & MPCII data

Interviews with KIs revealed the existence of a separation of the stimulant and depressant drug using markets prior to the shortage. The separation has been suggested by health KIs to have impacted on the health of heroin users who, on the whole, would have been relatively unfamiliar with the strength and use of methamphetamine. As a consequence, some health KIs believed that there was a greater risk of overdose during the initial period of experimenting with methamphetamine as a result of the shortage of heroin. This experimentation and unfamiliarity with methamphetamine use could have led to an increase in overdoses.

Conclusion

The available quantitative and qualitative data relating to methamphetamine overdose is inconclusive. The quantitative data available suggested some spiking occurring post-shortage, however, a time series analysis was unable to provide evidence for a direct link between the heroin shortage and an increase in methamphetamine overdose. Small case numbers in South Australia make trend analyses such as these difficult. The KI informants were expecting an increase in methamphetamine overdose as a result of drug users inexperience with this substance.

6.3 Heroin withdrawal

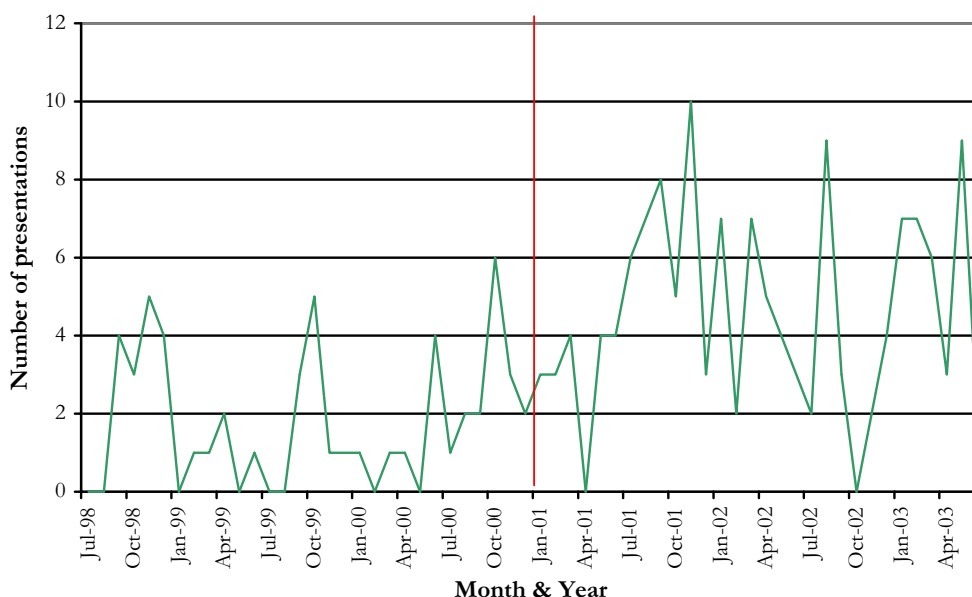
This issue is discussed in more detail in *Section 7: Treatment*. As mentioned previously, KIs, predominantly health based, did report an increase by heroin users in the use of various non-opioid drugs, mostly various forms of benzodiazepines, to help manage their withdrawal symptoms.

6.4 Drug induced psychosis

6.4.1 Hospital data

The number of drug-related psychosis presentations to the Emergency Department of the Royal Adelaide Hospital is presented in Figure 6.8. The number of cases presenting on a monthly basis is extremely low making interpretation of any trend difficult. However, there does appear to be a small increase in the number of drug-related psychosis presentations across the later half of 2001 and into the present time.

Figure 6.8: Number of drug-related psychosis presentations to the Royal Adelaide Hospital emergency department, 1998-2003

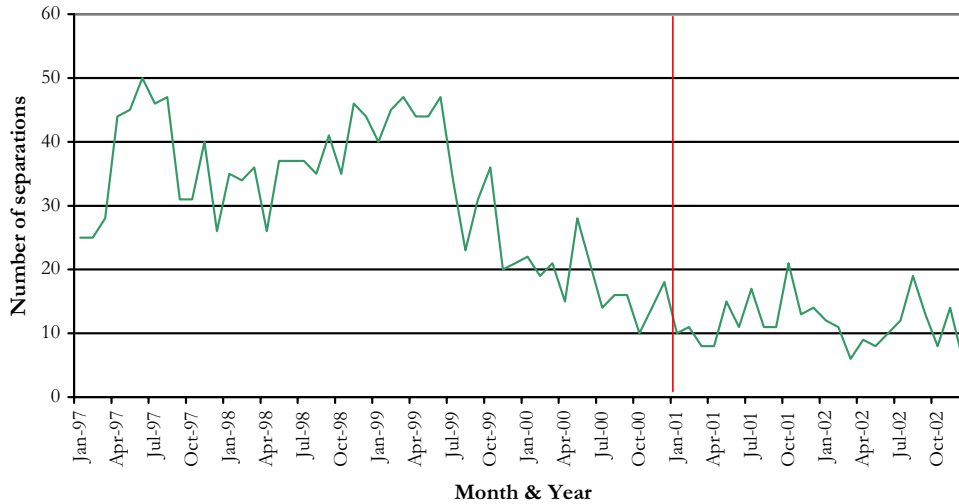


Source: Knowledge Management Section, Information Management Services, South Australian Department of Human Services

An examination of drug-related psychosis separations from all South Australian hospitals reveals a slightly different pattern. Figure 6.9 shows only cases where the drug-related psychosis was the patient’s primary diagnosis. As can be seen the number of cases seems to have been gradually declining throughout 2000 and there was no discernible change as a consequence of the heroin shortage.

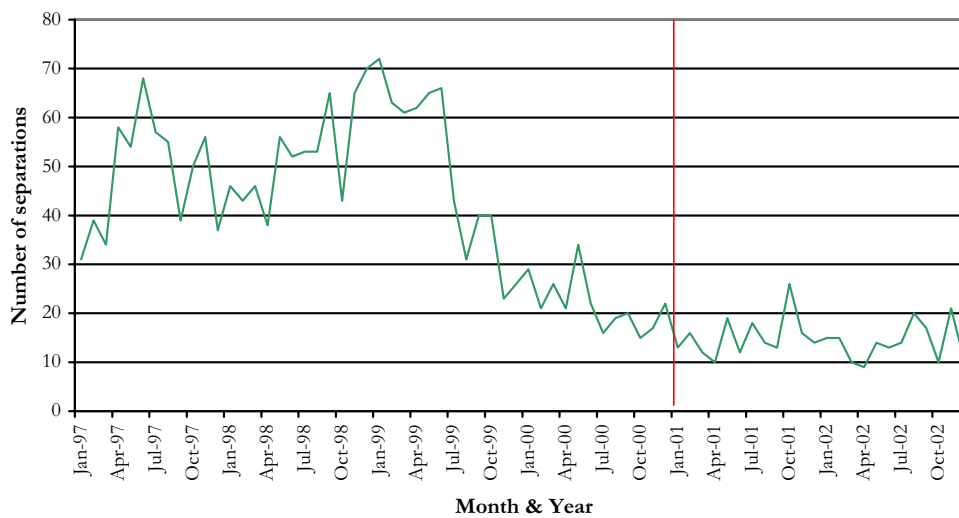
Figure 6.10 presents the number of drug-related psychosis separations from all South Australian hospitals where drug-related psychosis was identified even if this was not the primary diagnosis. The data follows a similar pattern as that in Figure 6.9, with the heroin shortage having no discernible impact on the number of separations for drug-related psychosis and a general decline in cases since around 2000.

Figure 6.9: Number of drug-related psychosis (primary diagnosis only) separations from all SA hospitals, 1997-2002



Source: Knowledge Management Section, Information Management Services, South Australian Department of Human Services

Figure 6.10: Number of all drug-related psychosis separations from all SA hospitals, 1997-2002



Source: Knowledge Management Section, Information Management Services, South Australian Department of Human Services

6.4.2 KI & MPCII data

Health and law enforcement KIs frequently reported a rise in mental health problems amongst the previously heroin using population. For example, one medical practitioner KI reported prescribing more medications for the treatment of drug-related psychosis in 2002 than ever before. The KIs suggested a direct link between a rise in these issues and the increased use of methamphetamine.

6.4.3 Conclusion

The small rise in emergency department presentations for drug related psychosis was not reflected in the overall hospital separations data. The differences between these two quantitative data sources may be a result of the RAH's standing as the principal facility for drug related health

issues in South Australia. The KI data suggested a rise in psychotic episodes as a result of increased use of methamphetamine. Despite this, the quantitative data does not support the occurrence of a sustained increase in drug related psychosis across Adelaide.

6.5 Mental health and psychosocial functioning

Quantitative data on this issue is not available and only KI and MPCl data is included in the following discussion.

6.5.1 KI & MPCl data

By far the most commonly cited non-physical health problem for IDUs mentioned by KIs and MPCls was the mental health difficulties associated with stimulant use. There were numerous responses discussing increased psychosis, violence, irrational behaviour and paranoia amongst drug users in general and specifically those who were previously involved in the heroin market. This rise in mental health difficulties amongst this population was directly attributed to the increased use of methamphetamine.

Other mental health issues associated with the heroin shortage noted by KIs and MPCls included increased depression and anxiety. This was partly attributed to the negative effects of methamphetamine use on mental health but the initial panic and stress experienced by heroin users at the beginning of the shortage was noted as contributing to these feelings. The increased stress associated with the shortage and the efforts taken by drug users to acquire heroin were seen as having negatively impacted on both the individual and their families. However, formal and informal diagnoses of depression and anxiety were noted as being endemic to this population and that these issues were a defining feature of the heroin using community. There was also a concern among some health KIs that heroin users will exaggerate their mental health issues to health agencies to gain access to drugs such as Xanax. However, heroin users who had been stable on methadone maintenance for some time also mentioned an increase in stress and anxiety amongst people they knew who were still using heroin at the time of the shortage.

6.5.2 Conclusion

A rise in mental health issues in the community was noted by the majority of KIs. In particular KIs and MPCls reported mental health difficulties associated with stimulant use such as increased psychosis, violence, irrational behaviour and paranoia.

6.6 Violence

Quantitative data describing violent offences are presented in *Section 8: Changes in Crime*.

6.1.1 KI & MPCl data

The majority of KIs, both health and law enforcement, reported that violent and erratic behaviour amongst drug users had increased. This was generally attributed to the increased use of methamphetamine. The excitatory and disinhibiting effects of methamphetamine as well as the paranoia, mania and potential psychosis associated with this drug were seen as increasing the levels of violent behaviour in this community.

Incidents of domestic violence were seen as having increased by a number of both health agency and law enforcement KIs. This suggested increase in domestic violence was partly attributed to increased methamphetamine use but was more commonly mentioned in relation to the increased

stress and pressure heroin users felt under when the heroin shortage started. Some mention was also made of increased home invasions, with drug users in search of people's 'stash' of heroin or their cannabis crops as well as increased competition and violence between dealers.

In addition to violence in the community, representatives from health agencies and hospital emergency departments reported an increase in violent behaviour both within hospitals and around various support agencies. The respondents felt that any increases in violence amongst the drug using community had been sustained since the time of the shortage, with this generally being attributed to sustained abuse of methamphetamine. It was noted by KIs that even those drug users who had subsequently returned to heroin use were now also using stimulants, generally crystal methamphetamine, which had been instrumental in sustaining the levels of observed violence.

6.6.2 Conclusion

Health and law enforcement KIs reported an increase in incidents of domestic violence around the time of the heroin shortage. In addition, an increase in violent behaviour within hospitals and support agencies was commented on by a number of KIs from health agencies and hospital emergency department. The KIs attributed this perceived rise in violent behaviour to sustained abuse of methamphetamine.

6.7 Other health issues

6.7.1 KI & MPC data

Some additional health issues, around the consequences of methamphetamine abuse, were noted by KIs. Key Informants suggested that within the previously heroin using population there was a rise in sleep deprivation, appetite suppression and nutrition problems. The causes were suggested to be related to drug users' naivety regarding the health effects of methamphetamine use. Medical staff also noted increased presentations at hospitals for drug-related physical injuries. These presentations were for the behavioural consequences of methamphetamine use. For example, a patient having taken a lot of methamphetamine and then becoming involved in a confrontation or having fallen over.

The injection of non-injectable drugs was reported by health KIs as being a high risk activity even distinct from vascular care issues. Initially, drug users were seen as being at higher risk of potential overdose due to not being certain of the drug's impact on their system. To find the appropriate dose of drugs was seen as being a hazardous trial and error exercise.

One health KI also mentioned that there had been a decrease in the amount of 'test-dosing'⁷, with drug users being more prepared to do this prior to the shortage. Potential reasons for this were not expanded upon and it was not discussed whether this decline in practice had been ongoing or to what degree it affected the drug using community.

6.7.2 Conclusion

Other health issues reported by KIs centred around a rise in sleep deprivation, appetite suppression and nutrition problems. Again these issues were attributed to increased and sustained abuse of methamphetamine.

⁷Test dosing is where an individual uses a smaller than usual amount of a newly acquired batch of drugs. This allows the drug user to gain some perception of the relative strength and purity of this drug and tailor their use of this batch accordingly. This minimises the risk of overdose.

6.8 Summary

The preceding analysis utilised both quantitative and qualitative data in an attempt to identify changes in health effects of drug use occurring as a result of the heroin shortage. Limitations in the quantitative data, mostly occurring as a result of the small numbers of cases within the South Australian population, were acknowledged but a number of trends were identified:

- The number of fatal and non-fatal heroin overdoses appeared to have reduced/decreased since the heroin shortage began;
- A potential increase in overdose experiences from the use of other opioids was identified;
- Some evidence to suggest increased methamphetamine overdoses occurring post-shortage (unconfirmed by time series analysis to have occurred as a consequence of the shortage) was found; and
- A small rise in emergency department presentations for drug related psychosis was noted.

The qualitative data produced support for the results stemming from the quantitative analysis. The following information was provided by the KIs and MPCIs:

- The number of heroin overdoses, fatal and non-fatal, were said to have decreased since the heroin shortage began;
- KIs reported an increased use in methamphetamine and methamphetamine although didn't comment directly on an increase in overdoses as a result; and
- KIs suggested that a rise in psychotic episodes had occurred as a result of increased use of methamphetamine.

In addition, the qualitative data revealed an increase in mental health and psychosocial problems, violence and other health issues such as sleep deprivation, appetite suppression, nutritional problems and drug-related injuries amongst drug users.

Key Informants strongly stated that an increase in methamphetamine use had occurred amongst heroin users. Contrary to their expectations, this reported increase was not reflected in increased hospital separations for methamphetamine overdoses. Due to the differing pharmacological effects of depressants and stimulants, overdose from methamphetamine resulting in hospital presentation is less likely to occur when compared with overdose from heroin. Methamphetamine overdose leads to more behavioural consequences that may not lead to hospital admission instead of the acute physiological effects of opioid overdose (Brust, 1993). Despite this, and even allowing for the small number of potential methamphetamine overdose cases, if the overall use of methamphetamine had increased it would be expected that this would be reflected, at least to some degree, by methamphetamine overdose hospital separation and emergency room presentation data.

There are two possible explanations for the difference between the qualitative and quantitative results. First, in keeping with the data reported in *Section 3: Change in patterns of drug use*, the uptake of methamphetamine amongst heroin users may not have been as extensive as consistently reported in the qualitative data. Second, as mentioned previously, the chances of overdosing from methamphetamine are much lower than heroin overdose and it may actually take a much larger uptake of methamphetamine use in the South Australian population before a rise in overdose cases is seen in hospital data.

Finally, the increase in fatal and non-fatal overdose associated with the use of opioids other than heroin is insufficient to support the sustained increase in abuse of diverted methadone reported by KIs in *Section 3: Changes in patterns of drug use*.

7 Treatment

Summary

- No evidence of an increase in admissions in pharmacotherapy programs was evident in the quantitative data. This may reflect a lack of vacancies in these programs.
- The quantitative data does not support the increase in heroin users seeking pharmacotherapy and detoxification services described in the qualitative data other than in country areas.
- There has been a clear and sustained increase in treatment and other support seeking related to methamphetamine use. The data supports qualitative feedback regarding an increase in methamphetamine use.
- Treatment data on cocaine use is too low to provide any meaningful insight into changes that may have occurred with the use of this drug in relation to the heroin shortage.
- The quantitative data suggests that the rate of benzodiazepine abuse amongst drug users was quite high. These tended to be used in combination with other drugs rather than as the primary drug of dependence.
- The quantitative data failed to reveal a rise in treatment related contacts for methadone and buprenorphine related issues.
- An increase in DASC outpatient contacts for morphine, codeine and pethidine was observed in the middle of 2001.

7.1 Introduction

It is probable that changes in patterns of drug use across South Australia would be reflected in changes in the types of treatment being sought and in the overall levels of treatment seeking behaviour. The shortage of heroin could also have encouraged drug using individuals to enrol in some form of treatment in an attempt to address their addiction/dependency issues. To examine any changes in the provision of drug treatment in South Australia as a consequence of the heroin shortage the following data has been accessed:

- Data has been extracted from Drug & Alcohol Services Council databases relating to:
 - In-patient contacts; and
 - Out-patient contacts
- Data concerning the number of clients receiving pharmacotherapy maintenance, from the Drugs of Dependence Unit (DDU), South Australian Department of Human Services; and
- Qualitative KI and MPCl data

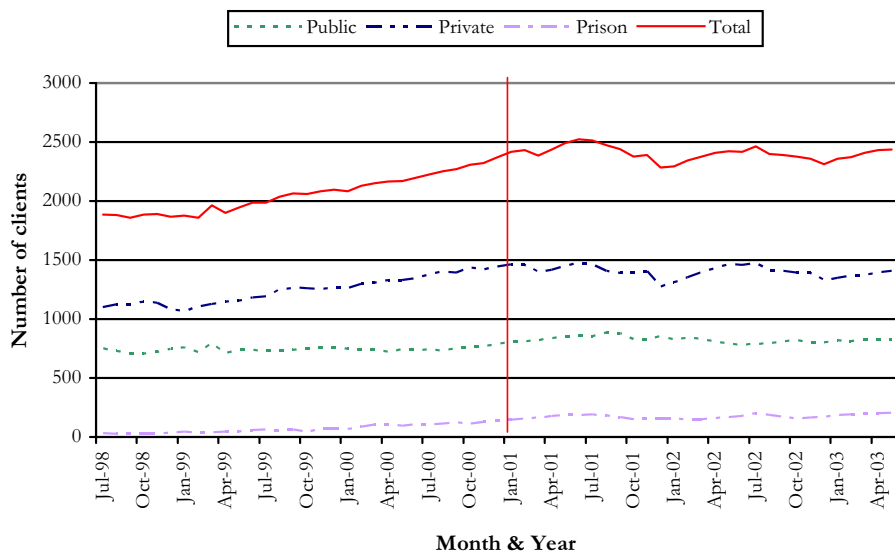
7.2 Treatment for problematic heroin use

7.2.1 Pharmacotherapy maintenance treatment

DDU data

The pharmacotherapy data provided by the DDU incorporates the number of individuals across South Australia receiving the following forms of drug maintenance treatment: Methadone, Buprenorphine, Levo-Alpha Acetyl Methadol (LAAM) and Naltrexone. Data for the number of South Australian pharmacotherapy clients is presented in Figure 7.1

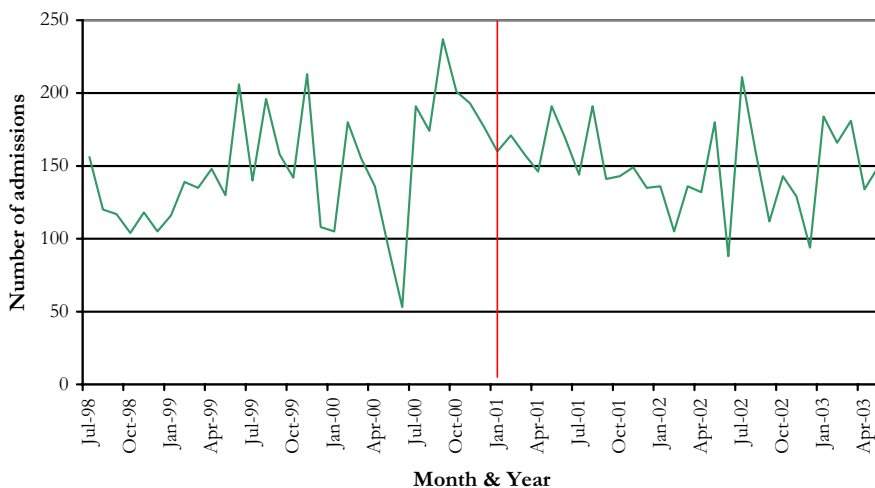
Figure 7.1: Total number of pharmacotherapy clients for South Australia, 1998-2002



Source: Drugs of Dependence Unit, South Australian Department of Human Services

The total number of pharmacotherapy clients has been steadily increasing since 1999. There does not seem to be any evidence of the heroin shortage resulting in changes to the number of pharmacotherapy clients, though there is a small decline in numbers for the latter half of 2001. To further unpack what impact, if any, the heroin shortage may have had on individuals seeking this form of treatment the number of monthly admissions and new admissions were also extracted. Figure 7.2 shows the total number of admissions to the South Australian pharmacotherapy programs.

Figure 7.2: Total monthly admissions to pharmacotherapy programs, 1998-2003

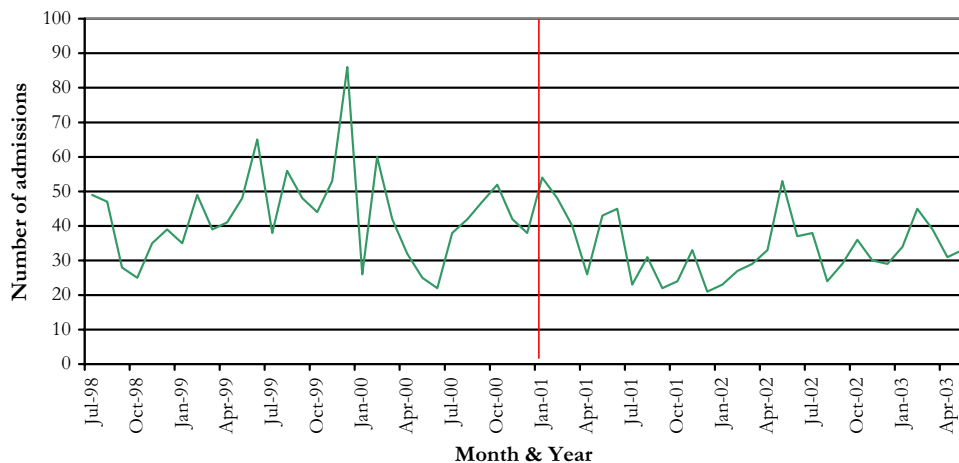


Source: Drugs of Dependence Unit, South Australian Department of Human Services

The data in Figure 7.2 does not evidence a rise in admissions to treatment agencies. The data addresses the number of actual admissions to treatment programs and the lack of change may be reflective of programs operating at capacity. Without data as to the capacity of the individual programs and the numbers of prospective clients who were refused admission to pharmacotherapy the exact situation at the time of the heroin shortage remains unclear.

To determine if the shortage may have encouraged heroin users to engage in pharmacotherapy programs for the first time, the number of new admissions, as opposed to re-admissions, to treatment programs is presented in Figure 7.3. The number of heroin users seeking admission to these programs for the first time does not seem to have increased in response to the shortage. Again, this may simply be a result of the treatment program operating at capacity.

Figure 7.3: Total monthly new admissions to pharmacotherapy programs, 1998-2003



Source: Drugs of Dependence Unit, South Australian Department of Human Services

KI & MPCl data

A number of health KIs and MPCIs discussed drug users enrolling in various treatment options as a response to the heroin shortage. Increased demand for methadone and buprenorphine was noted by health KIs and opioid substitution services reported being initially unable to meet the increased demand. Increased help-seeking behaviour was noted across the heroin using community by some health representatives. MPCl feedback was more likely to attribute treatment seeking behaviour to frustration with the state of the heroin market or the poor quality of the available heroin rather than a desire to directly address their drug dependency. Some MPCIs discussed that those seeking substitution treatment tended to be older heroin users who would rather go on methadone/buprenorphine than start taking methamphetamine.

Conclusion

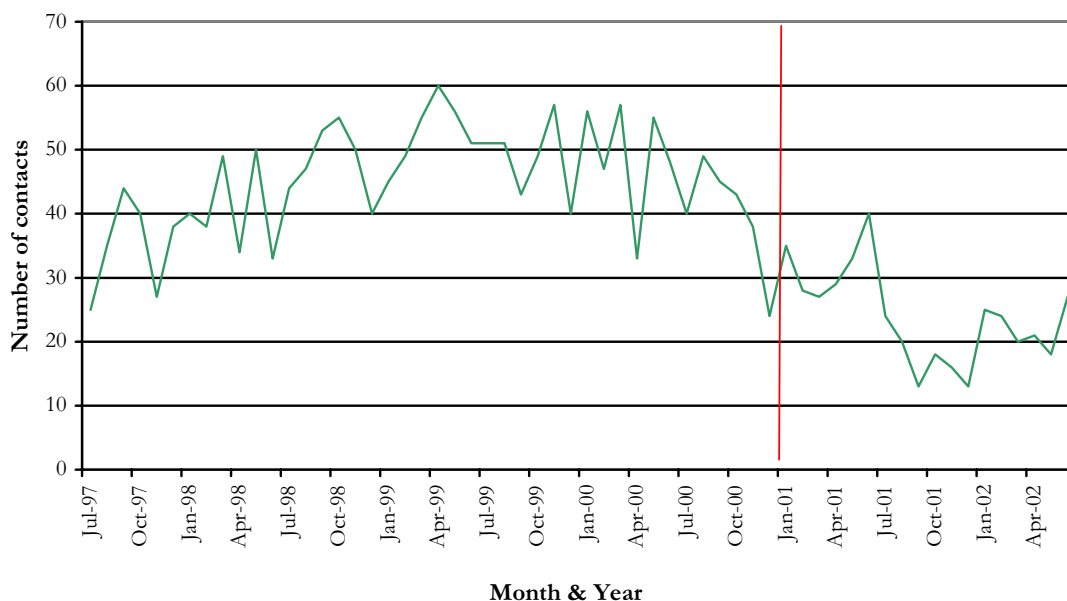
No evidence of an increase in admissions in pharmacotherapy programs was evident in the quantitative data. This may have been influenced by a lack of vacancies at the time of the shortage.

7.2.2 Other forms of treatment

DASC data

The number of DASC opioid-related in-patient contacts was extracted and are presented in Figure 7.4. While being conscious of potential program capacity issues as per above, this figure would not seem to support increased demand for detoxification at the start of the heroin shortage. However, despite the overall decrease in contacts for this service since 1999/2000 there is a slight peak around mid 2001. Similar small scale increases can be seen for the same time period in Figure 7.1 and Figure 7.2. While not a large increase it may be that any increased demand for opioid related treatment came several months after the shortage had started. However, this slight trend would still not be analogous to the increased demand suggested to have occurred by health KIs.

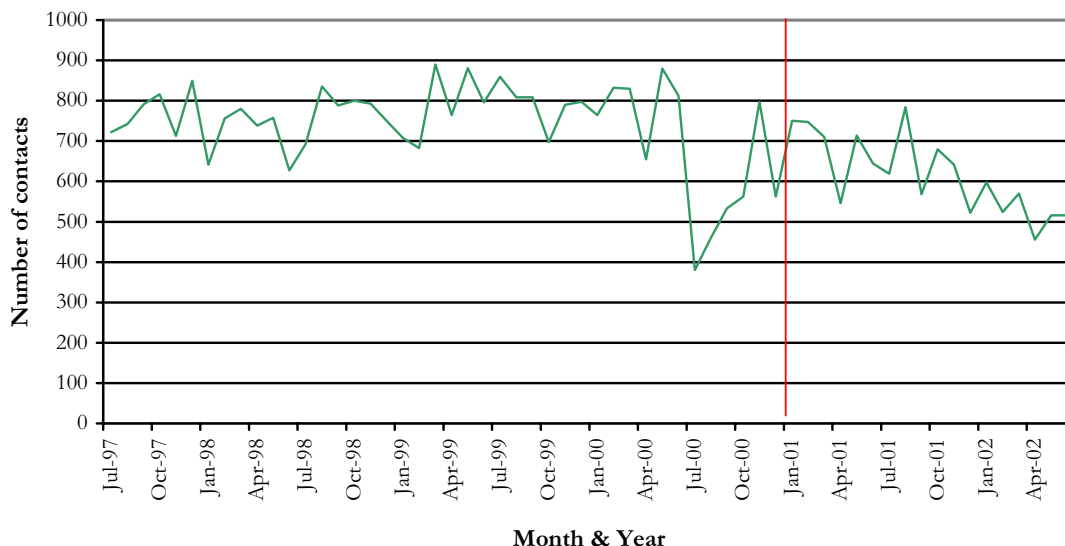
Figure 7.4: Number of opioid-related inpatient contacts through DASC, 1997-2002



Source: Drug & Alcohol Services Council Inc

Figure 7.5 presents data on the number of opioid-related outpatient contacts. Similar to the other services just described the data does not show any increased demand for opioid related services as a consequence of the heroin shortage. However, the slowly declining number of contacts would support the feedback that heroin has become less of an issue for South Australia with the uptake of a range of various drugs by the heroin using population.

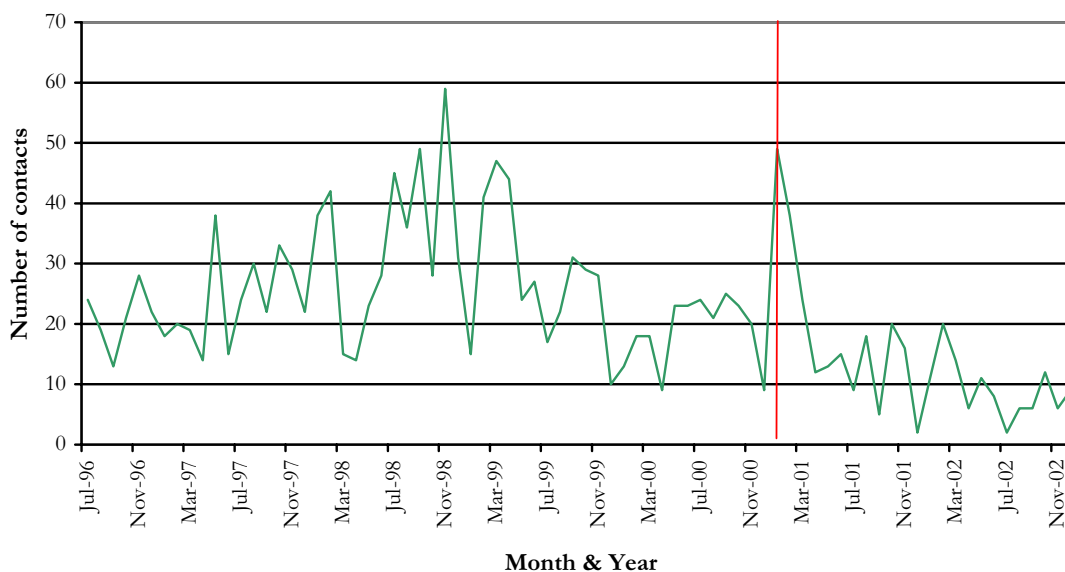
Figure 7.5: Number of opioid-related outpatient contacts through DASC, 1997-2002



Source: Drug & Alcohol Services Council Inc

A DASC service that did show a marked increase at the time of the heroin shortage was the number of DASC contacts relating to opioids from the country outreach program (Figure 7.6). The number of country contacts sharply increased at the beginning of the shortage in January 2001 before decreasing steadily over the course of several months and then reaching quite low levels.

Figure 7.6: Number of DASC informal contacts for opioids – country outreach



Source: Drug & Alcohol Services Council Inc

KI & MPCl data

In addition to increased demands for pharmacotherapy maintenance, health KIs reported an increased demand for opioid detoxification services at the beginning of the shortage.

Conclusion

While being conscious of the potential impact program capacity may have had on data concerning admission to pharmacotherapy and detoxification services the quantitative data does not seem to support the surge in heroin users seeking these forms of support described in the qualitative data other than in country areas.

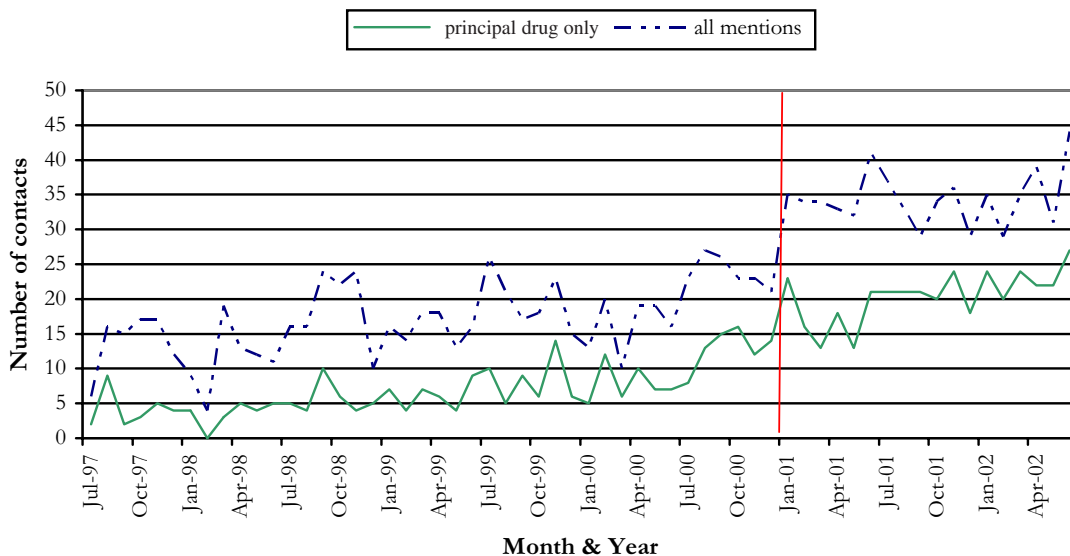
7.3 Treatment for problematic psychostimulant use

7.3.1 Methamphetamine

DASC data

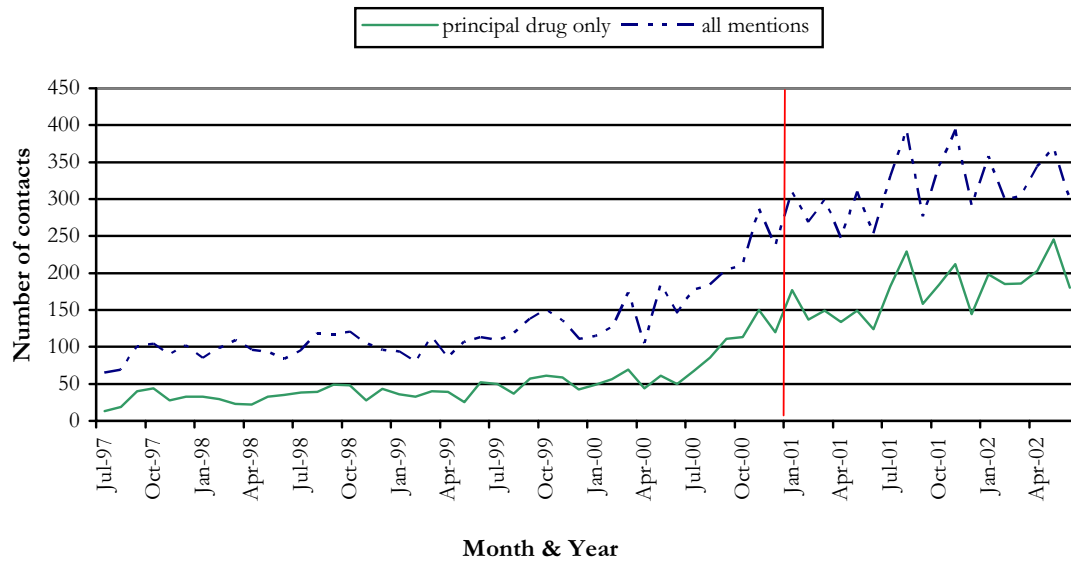
Figures 7.7 and 7.8, present data for the number of methamphetamine-related contacts for inpatients and outpatients respectively. As can be seen in Figure 7.7 there was a sharp increase in the demand for methamphetamine-related inpatient services at the time of the heroin shortage and this increase has subsequently been maintained. A time series analysis reveals an approximate 60% increase in the number of methamphetamine-related contacts to DASC. The mean level change was found to be permanent and statistically significant. Similar patterns can be seen in Figure 7.8. Contrary to the hospital presentation and separation presented in *Section 3: Changes in patterns of drug use*, this figure shows a clear increase in the impact of methamphetamine use in Adelaide.

Figure 7.7: Number of methamphetamine-related inpatient contacts through DASC, 1997-2002



Source: Drug & Alcohol Services Council Inc

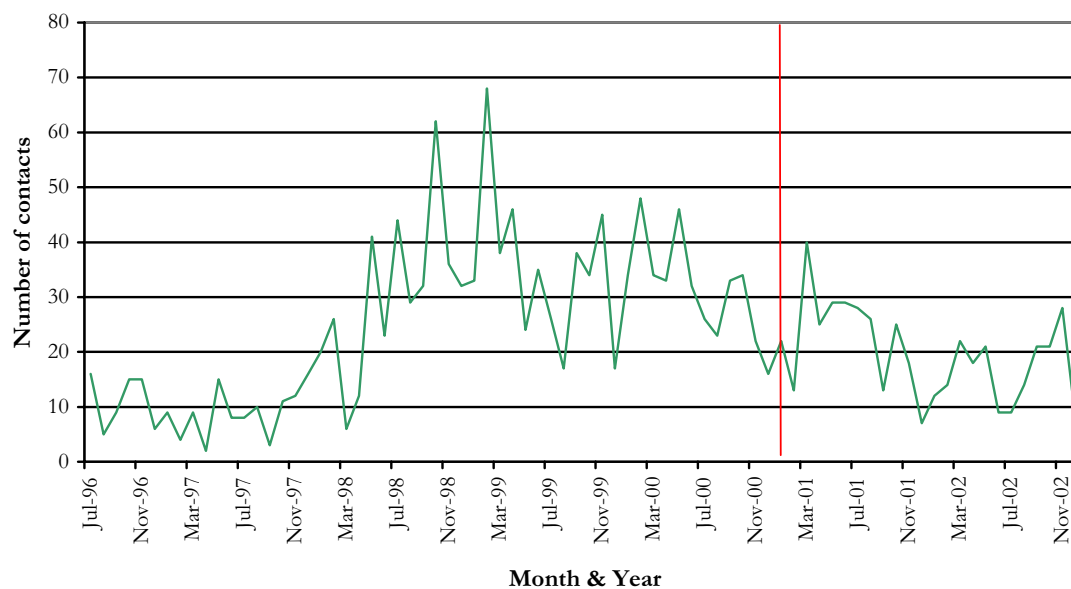
Figure 7.8: Number of methamphetamine-related outpatient contacts through DASC, 1997-2002



Source: Drug & Alcohol Services Council Inc

Despite country outreach programs receiving an increase in informal contacts⁸ for opioids a similar rise was not seen for methamphetamine (Figure 7.9). While there was a small spike evident in March 2001 the natural variance associated with the number of contacts makes it difficult to support a claim that the heroin shortage impacted in any definable way. It may be reasonable to assume that increased problematic methamphetamine use was not as large in country areas and is more of an urban issue.

Figure 7.9: Number of DASC informal contacts for methamphetamine, country outreach, July 1996 – Dec 2002



Source: Drug & Alcohol Services Council Inc

⁸An informal contact is defined as either contact lasting less than 15 minutes with an existing DASC client where no record or case notes are required or brief contact with a non-DASC client where it is not expected that ongoing therapy/treatment will be provided or only information or general assistance is required.

KI & MPCl data

An increased demand for detoxification and treatment services for methamphetamine use was noted by health KIs. This demand was described as ongoing throughout the time of the heroin shortage.

Conclusion

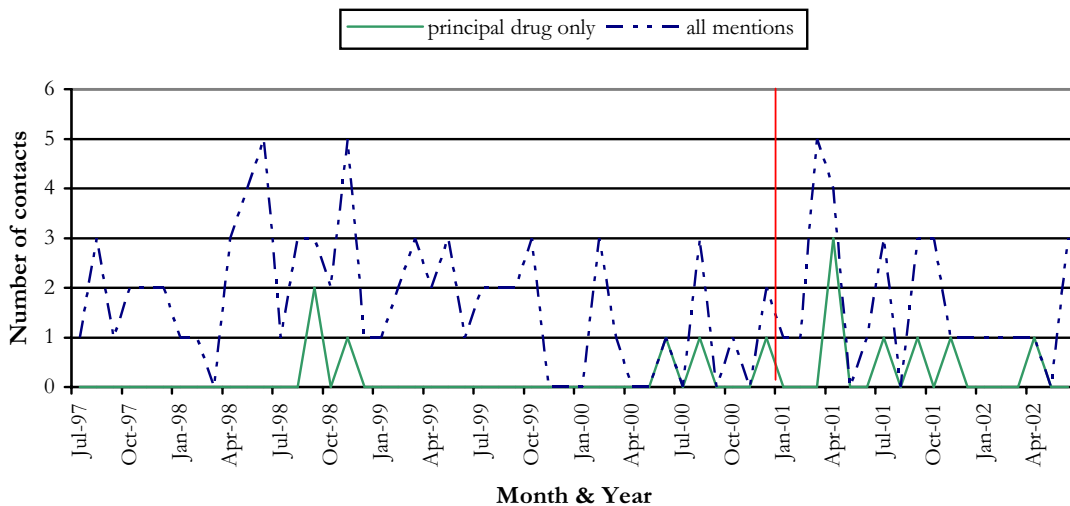
There has been a clear and sustained increase in treatment seeking behaviour and enrolment in methamphetamine related supports in Adelaide. The data supports qualitative feedback as to the surge in popularity enjoyed by methamphetamine.

7.3.2 Cocaine

DASC data

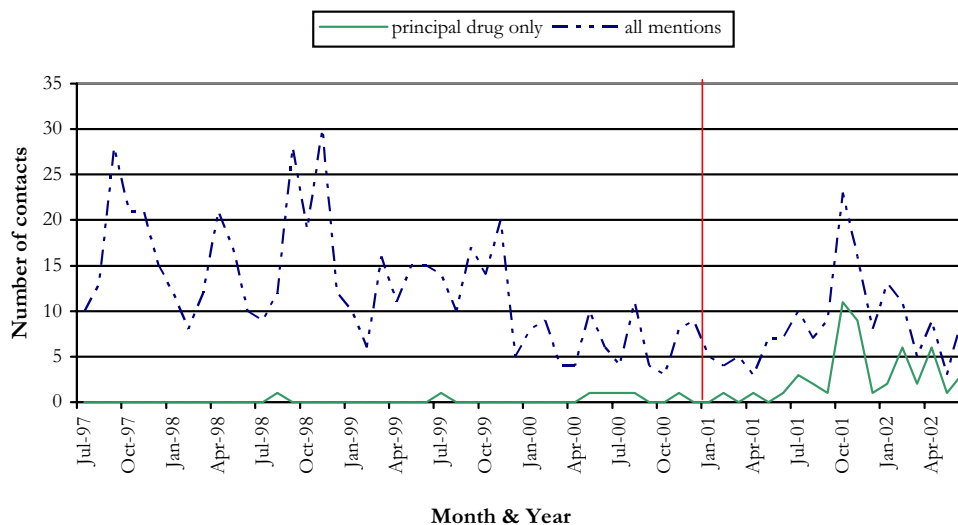
Despite the limited presence of cocaine in the Adelaide drug market, for the sake of completeness data relating to DASC contacts has been extracted. As seen in Figure 7.10 the total number of cocaine-related inpatient contacts is quite limited and despite a spike around early 2001, the numbers involved are simply too low to draw any conclusions. Figure 7.10 contains a higher number of cases and while there is no discernible effect of the heroin shortage on this data there is a spike in the number of outpatient contacts during October 2001 which is less likely to be an artefact. Why this peak has occurred is unclear at the present time, however, given its isolated nature and a lack of qualitative feedback that may provide a potential explanation it is reasonable to state that this effect is distinct from the shortage.

Figure 7.10: Number of cocaine-related inpatient contacts through DASC, 1997-2002



Source: Drug & Alcohol Services Council Inc

Figure 7.11: Number of cocaine-related outpatient contacts through DASC, 1997-2002



Source: Drug & Alcohol Services Council Inc

Conclusion

The number of DASC contacts in relation to cocaine is too low to provide any meaningful insight into changes that may have occurred in relation to the heroin shortage. A peak in contacts was observed in October 2001 but further investigation is required to establish whether this was related to the heroin shortage.

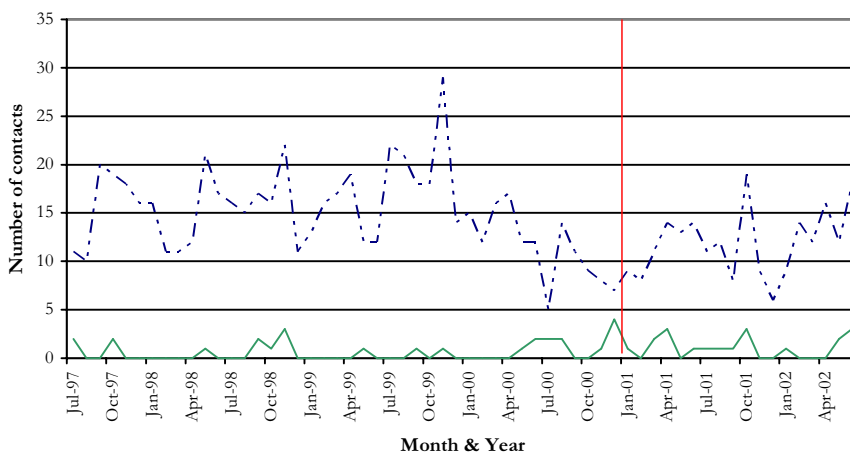
7.4 Treatment for problematic use of other drugs

7.4.1 Benzodiazepines

DASC data

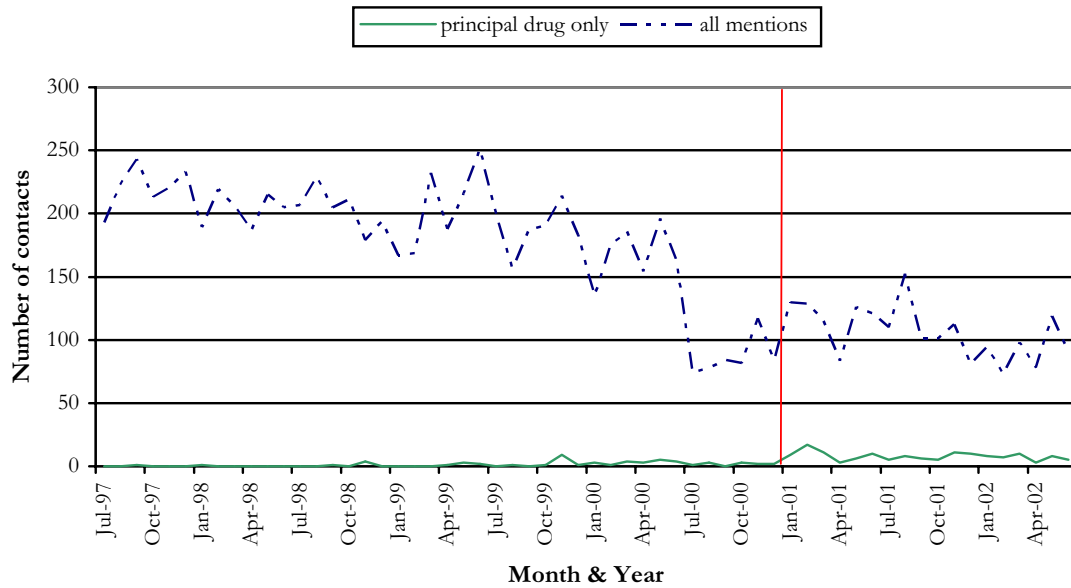
Figures 7.12 and 7.13, present data for the number of benzodiazepine-related contacts for inpatients and outpatients respectively. The data in Figure 7.12 is quite variable and as such there are no discernable effects of the heroin shortage. Despite an increase in case numbers and less variability, Figure 7.13 also displays a similar lack of impact from the heroin shortage.

Figure 7.12: Number of benzodiazepine-related inpatient contacts through DASC, 1997-2002



Source: Drug & Alcohol Services Council Inc.

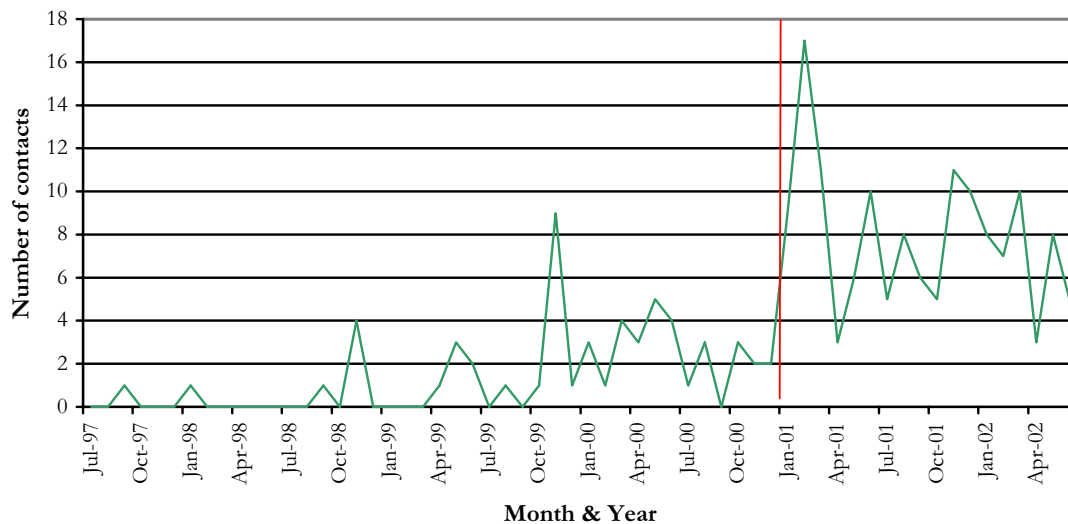
Figure 7.13: Number of benzodiazepine-related outpatient contacts through DASC, 1997-2002



Source: Drug & Alcohol Services Council Inc

The number of benzodiazepine-related outpatient contacts where benzodiazepines were identified as the principal drug of concern for the client was examined and the results presented in Figure 7.14. The data shows a slightly different pattern than that of all benzodiazepine related outpatient contacts. A sharp spike in the number of contacts at the beginning of the heroin shortage is evident. While the number of outpatient contacts subsequently declines, overall they have remained consistently higher than pre-shortage figures.

Figure 7.14: Number of benzodiazepine-related outpatient contacts (principal drug only) through DASC, 1997-2002



Source: Drug & Alcohol Services Council Inc

KI & MPCl data

While potential increases in the use of benzodiazepines was mentioned by KIs and MPCIs, as discussed in *Section 3: Changes in patterns of drug use*, actual treatment seeking for problematic benzodiazepine use was not directly commented upon.

Conclusion

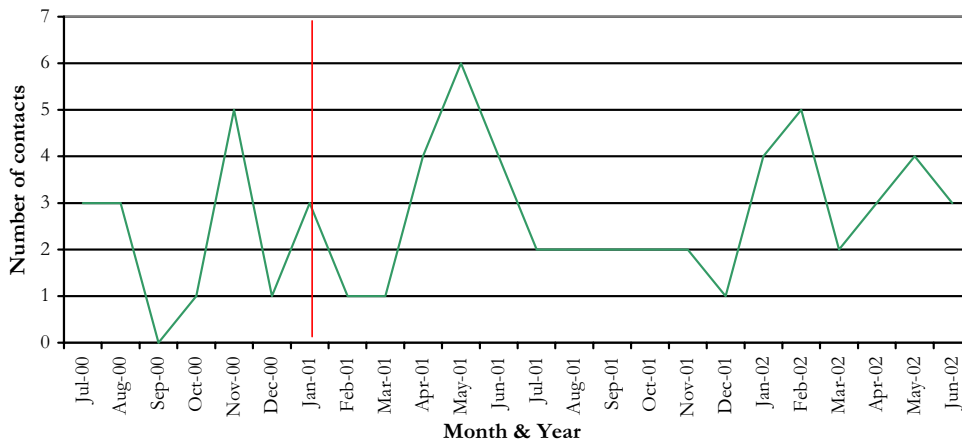
The quantitative data suggests that the overall rate of benzodiazepine abuse amongst the drug using community was quite high but that this tends to be used in combination with other drugs as opposed to being a primary drug of dependence. Changes in benzodiazepine related treatment that could be attributed to the heroin shortage were not observed.

7.4.2 Diverted opioid medications

DASC data

Data on the abuse of methadone and buprenorphine has been extracted to examine the illicit use of diverted opioid medications. In relation to in-patient contacts through DASC the numbers involved, as shown in Figure 7.15, are too low to draw any conclusions.

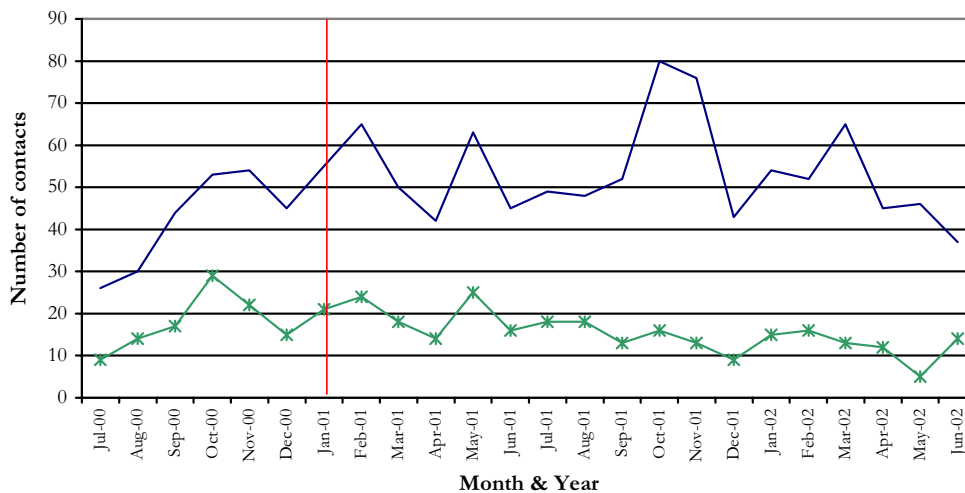
Figure 7.15: Number of methadone and buprenorphine-related inpatient contacts through DASC, 2000-2002



Source: Drug & Alcohol Services Council Inc

The data for outpatient contacts where methadone and buprenorphine are the primary drugs of concern are presented in Figure 7.16. As with benzodiazepines it seems as if diverted pharmacological treatments are more often used in combination with other drugs as opposed to being a primary drug of dependence. The number of outpatient contacts where methadone or buprenorphine was the primary drug of concern was not affected by the heroin shortage.

Figure 7.16: Number of methadone and buprenorphine-related outpatient contacts (principal drug only) through DASC, 2000-2002



Source: Drug & Alcohol Services Council Inc

KI & MPCl data

As discussed qualitative feedback from KIs and MPCIs reported an increase in the use of diverted opioid medications. Treatment seeking for the misuse of these drugs was not reported.

Conclusion

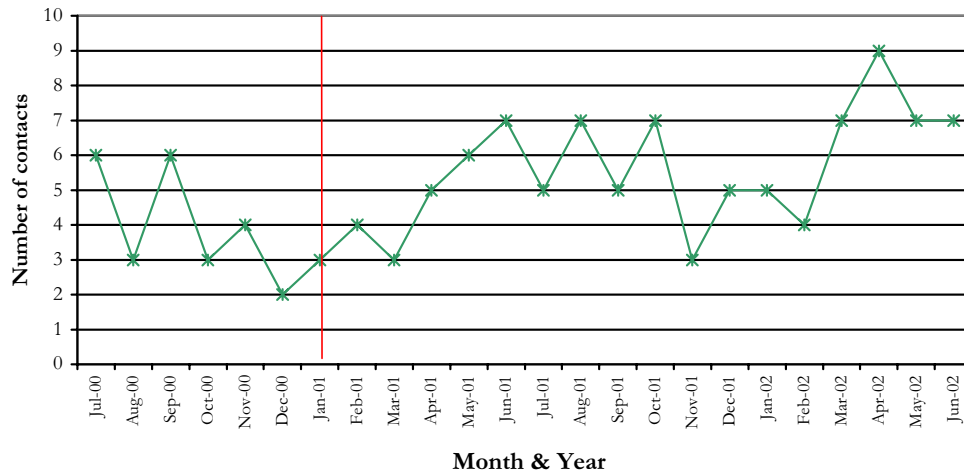
The quantitative data failed to show a rise in contacts for methadone and buprenorphine-related issues. In contrast to the comments provided by KIs and MPCIs it appears as if an increase in methadone and buprenorphine abuse did not occur as a result of the heroin shortage.

7.4.3 Other opioids

DASC data

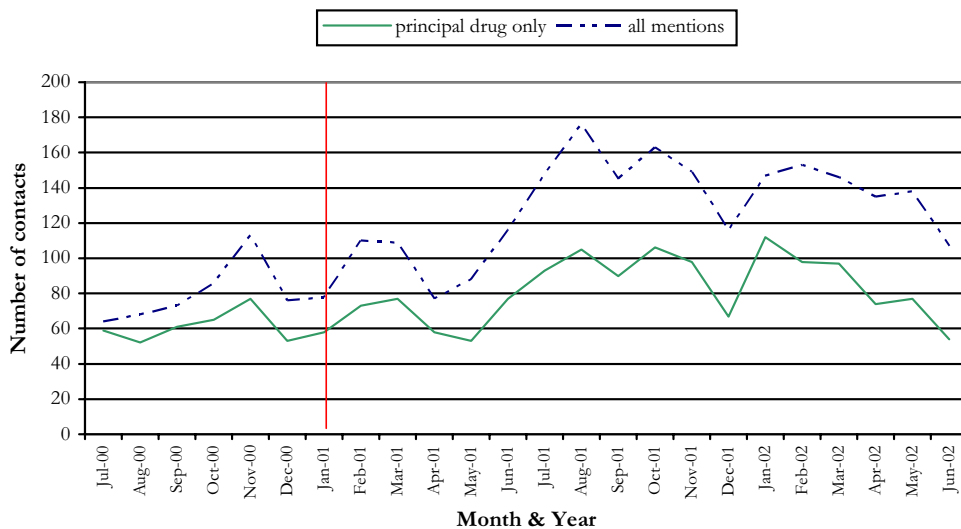
In addition to the diversion of methadone and buprenorphine, increased use of other opioids was reported in the qualitative data. Data on morphine, codeine and pethidine-related DASC contacts is provided in Figures 7.17 and 7.18.

Figure 7.17: Number of morphine, codeine and pethidine-related inpatient contacts through DASC, 2000-2002



Source: Drug & Alcohol Services Council Inc

Figure 7.18: Number of morphine, codeine and pethidine-related outpatient contacts (principal drug only) through DASC, 2000-2002



Source: Drug & Alcohol Services Council Inc

As shown in Figure 7.17 the number of DASC in-patient contacts relating to these drug types is too low to draw any definitive conclusions. In relation to outpatient contacts (Fig 7.18), it can be argued that abuse of these three drugs as the primary drug of concern is far more common than that of methadone and buprenorphine. This would be expected considering the different effects of the two drug groups, described by a health KI, with morphine, codeine and pethidine providing more of a 'high' in addition to meeting an individual's craving for opioids. While there had been an increase in outpatient contacts concerning this group in the middle of 2001 it is unclear whether this could be attributable to the heroin shortage.

KI & MPCI data

While qualitative feedback was provided as to a reported increase in the use of other opioids, not a lot of information was provided regarding treatment seeking for these drugs. At least one health KI mentioned increased presentations to treatment facilities concerning morphine.

Conclusion

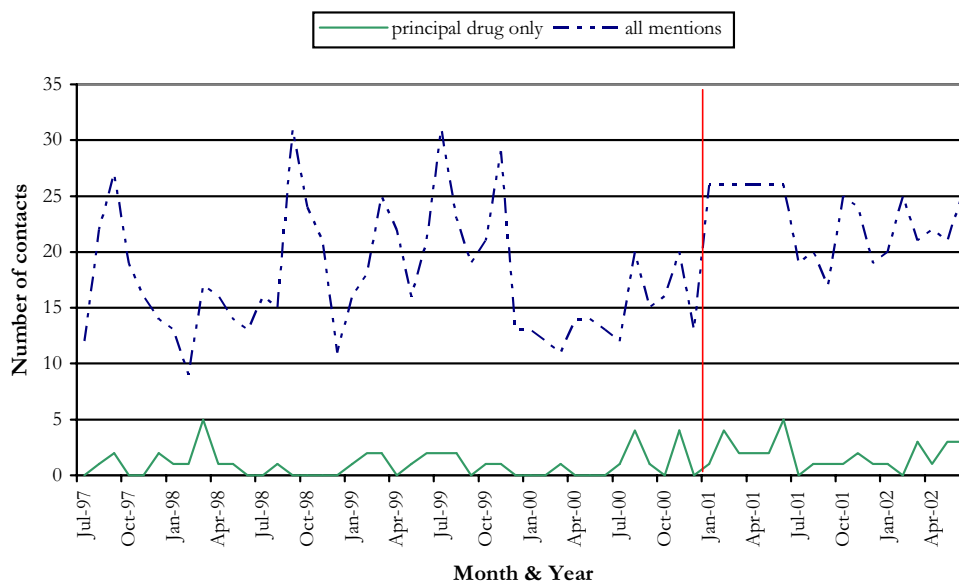
An increase in outpatient contacts for morphine, codeine and pethidine was observed in the middle of 2001. In support of the possibility that this occurred as a result of the heroin shortage a small number of KIs reported observing increased morphine related presentations to treatment facilities

7.4.4 Cannabis

DASC data

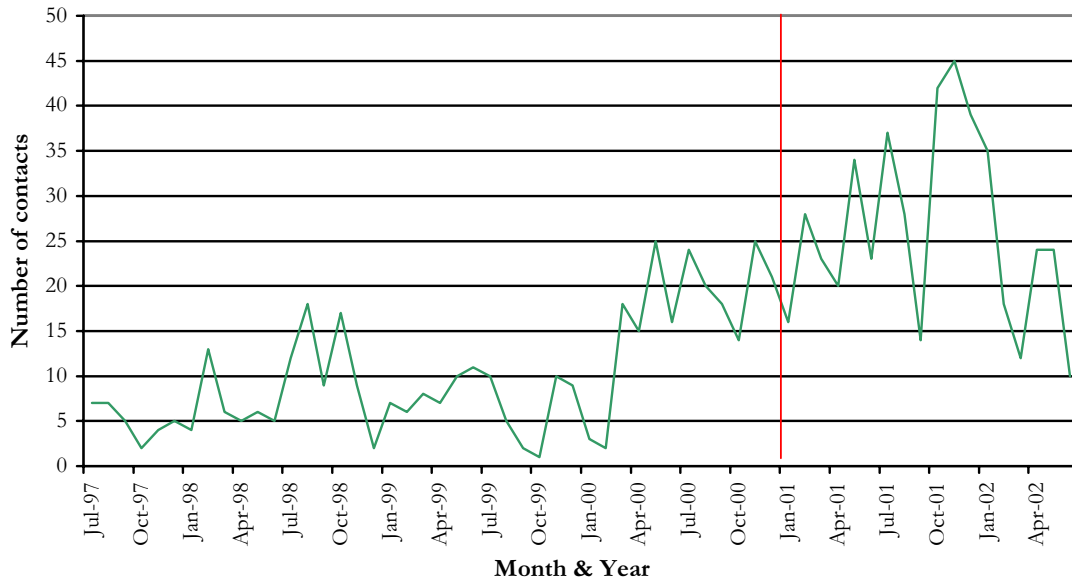
The number of DASC inpatient contacts for cannabis was examined to determine if there were any changes in the number of requests for professional support or treatment. Figure 7.19 details cannabis-related inpatient contacts and emphasises the use of cannabis to supplement other drug taking as opposed to being a primary drug of dependence in and of itself, at least within the context of treatment seeking. While a peak at the start of the shortage can be seen, this is smaller than previous peaks in the graph and the lack of variability for the six months following the initial rise in the number of contacts makes statistical analysis difficult. Consequently it is not possible to accurately assess the effect of the heroin shortage on cannabis related inpatient contacts.

Figure 7.19: Number of cannabis-related inpatient contacts through DASC, 1997-2002



Source: Drug & Alcohol Services Council Inc

Figure 7.20: Number of cannabis-related outpatient contacts (principal drug only) through DASC, 1997-2002

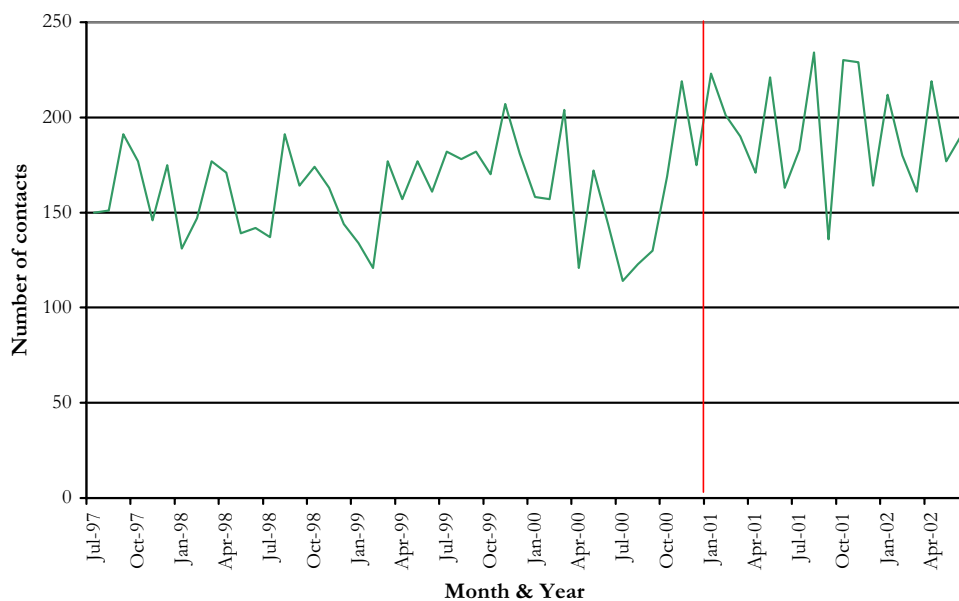


Source: Drug & Alcohol Services Council Inc

Figure 7.20 shows an overall increase in the number of cannabis outpatient contacts where cannabis is the principal drug of concern. An overall rise in contacts is evident and appears to have begun in early 2000. Due to the variability and small number of cases it is difficult to conclude whether the heroin shortage has had any effect on the numbers of cannabis-related outpatient contacts.

According to Figure 7.21 an increase in cannabis-related outpatient contacts can be seen to have occurred in August 2000. After this initial increase and despite the variability in the data, the number of contacts appeared to stabilise and no evidence for a change in contact rates can be seen at or after the time of the heroin shortage.

Figure 7.21: Number of cannabis-related outpatient contacts through DASC, 1997-2002



Source: Drug & Alcohol Services Council Inc

KI & MPCl data

Treatment for problematic cannabis use was not discussed in the qualitative feedback. It was continually mentioned by health KIs, however, that cannabis use is very common amongst heroin users and that most people receiving treatment for this drug will be using cannabis as well.

Conclusion

An increase in the number of cannabis outpatient contacts was evident however the increase appeared to be part of an overall rise in contacts beginning in early 2000. Feedback from KIs and MPCIs stressed the endemic use of cannabis in the community. It is possible that cannabis use was at saturation point and little change could have occurred as a result of the heroin shortage, however, there is no readily available data to support this supposition.

7.5 Summary

The quantitative and qualitative information relating to treatment provision for drug abuse shows a number of trends:

- The number of people receiving opioid pharmacotherapy and opioid detoxification services did not increase to any marked degree as a consequence of the heroin shortage. This lack of increase conflicts with the reported qualitative data;
- At the present time the number of opioid-related inpatient and outpatient contacts is lower than pre-shortage levels;
- A marked and statistically significant increase was noted in methamphetamine related inpatient contacts;
- Increasing numbers of methamphetamine related outpatient contacts, the continuation of a trend established prior to the advent of the heroin shortage;
- In relation to methamphetamine the quantitative data supports the qualitative feedback;
- The number of inpatient and outpatient contacts for benzodiazepines show no significant impact from the heroin shortage; and
- Data concerning opioids other than heroin and diverted medications failed to show any significant increase in the number of treatment related contacts as a consequence of the heroin shortage. This conflicts with an expected rise in these contacts due to qualitative feedback concerning increased use of these drugs amongst heroin users.

8 Changes in Crime

Summary

- Only one of the offence categories examined demonstrated changes in the rates of incidents per month that were likely attributable to the heroin shortage. A statistically significant spike in incidents of robbery without a weapon was observed following the advent of the heroin shortage. The increase was not maintained.
- According to the quantitative data examined heroin use is presently at much lower levels than pre-shortage and there was no evidence to support an increase in the use of other opioids.
- The use of methamphetamine has not increased in response to the heroin shortage and the incident rates are presently much lower than pre-shortage levels.
- There is insufficient quantitative data to support KI reports of an overall increase in the rates of acquisitive crime associated with the heroin shortage.
- There is insufficient quantitative data to support KI reports that there has been a sustained increase in behavioural and violent crimes, associated with the heroin shortage.
- The quantitative data has not demonstrated an increase in the number of incidents of methamphetamine production offences despite KI suggestions that more 'cooks' have emerged as a result of the shortage.
- The expected rise in prostitution offences reported by a number of KIs was not reflected in the quantitative data.
- The reports from KIs of an increase in stress and panic by heroin users was suggested to have led to an increase in opportunistic crime and evidence for this was found in the quantitative data. An increase in the number of incidents of robbery without a weapon was related to the heroin shortage.

8.1 Introduction

Problematic drug use has been associated with criminal behaviour. This connection includes both acquisitive crime to fund the purchase of drugs and offences committed whilst under the influence of drugs. Consequently, changes in drug using profiles may also be reflected in both the types and extent of criminal behaviour being reported by state police. To examine the impacts of the heroin shortage on the types and levels of criminal behaviour in the community, data has been extracted from two key sources:

- Data extracted from the South Australian Police (SAPOL) database by the Office of Crime Statistics and Research (OCSAR), Attorney-General's Department (1997-2002); and
- Qualitative KI and MPCJ data.

8.2 Criminal activity associated with drugs

This section is divided into specific categories of offending, with both quantitative and, where available, qualitative data relating to each category presented in turn. Monthly data is presented for police incident reports for the specific types of offences that make up each offence category. The offence categories include:

- Property Crime;
- Break and Enter;
- Motor Vehicle Theft;
- Crime Against the Person;
- Robbery;
- Illicit Sex Work; and
- Driving Offences.

8.2.1 Property crime

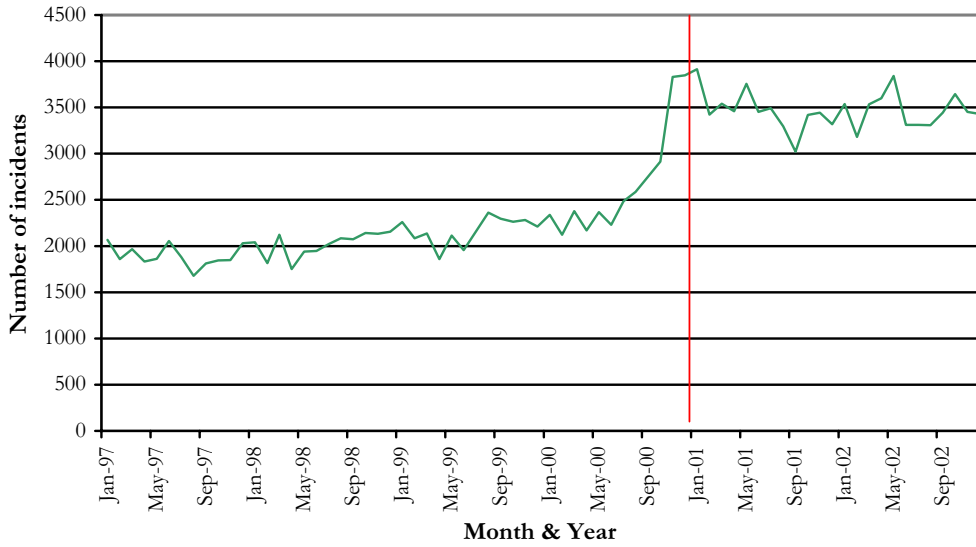
SAPOL data

The offence category of property crime includes the following specific offences:

- Steal from dwelling;
- Steal from person;
- Steal from motor vehicle;
- Steal from retail; and
- Fraud.

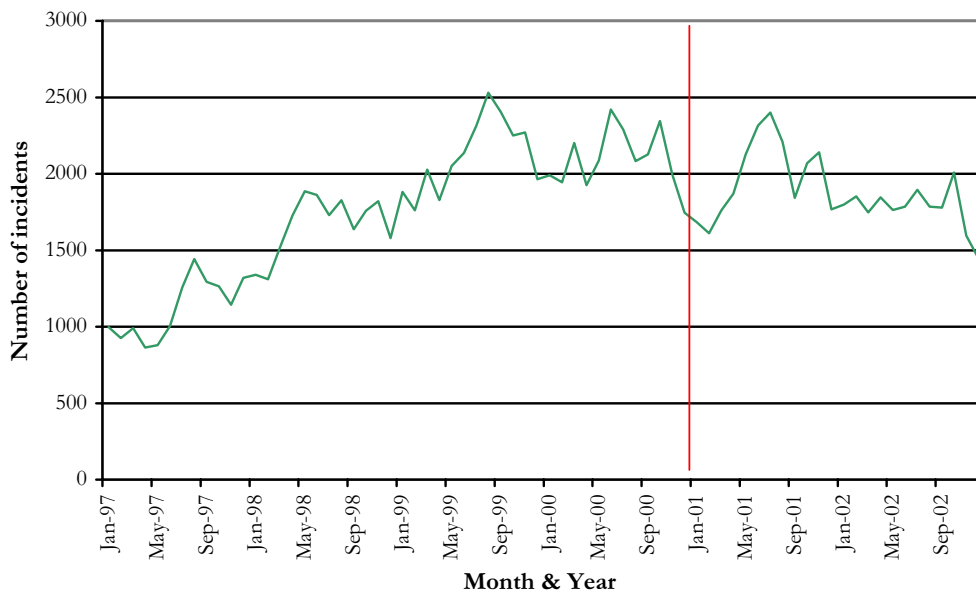
The number of police incident reports for these specific offences between 1997 and 2002, are presented in Figures 8.1 to 8.5.

Figure 8.1: Number of police incident reports for steal from dwelling, 1997-2002



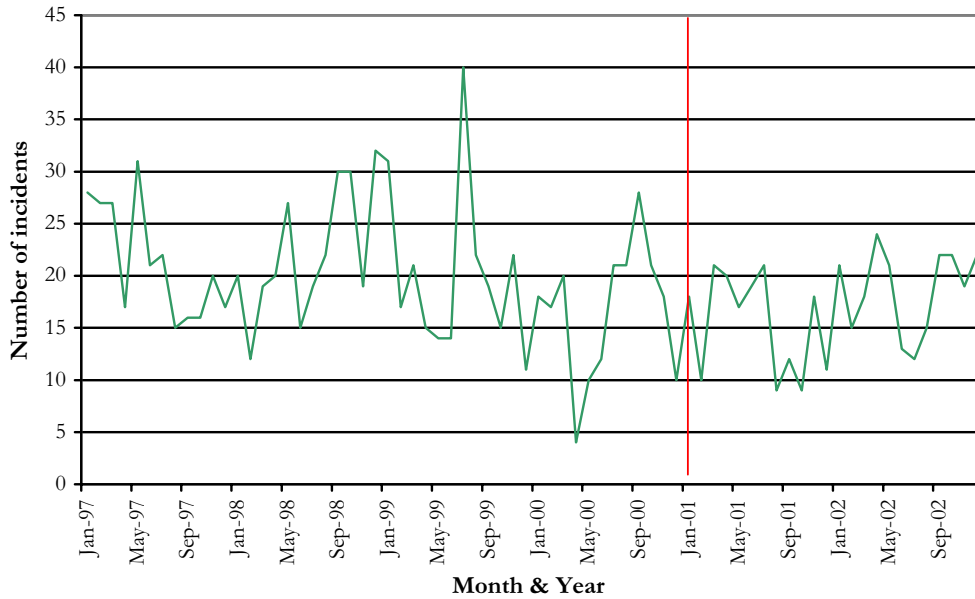
Source: Office of Crime Statistics and Research, Attorney General’s Department, SA

Figure 8.2: Number of police incident reports for steal from motor vehicle, 1997-2002



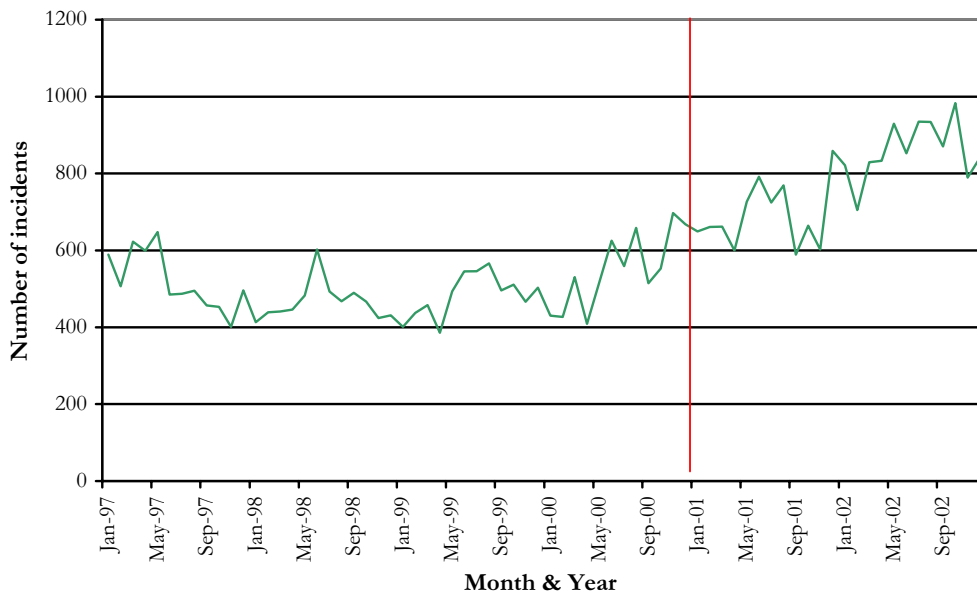
Source: Office of Crime Statistics and Research, Attorney General’s Department, SA

Figure 8.3: Number of police incident reports for steal from person, 1997-2002



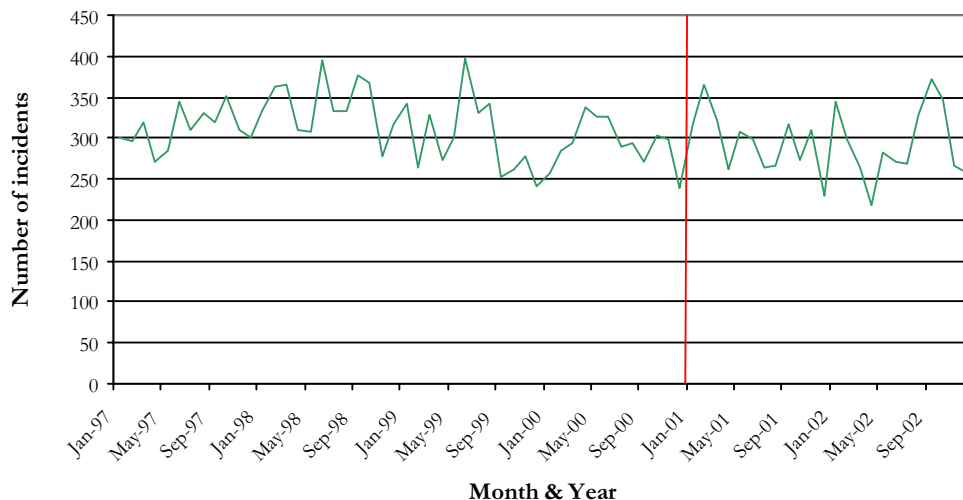
Source: Office of Crime Statistics and Research, Attorney General's Department, SA

Figure 8.4: Number of police incident reports for steal from retail, 1997-2002



Source: Office of Crime Statistics and Research, Attorney General's Department, SA

Figure 8.5: Number of police incident reports for fraud, 1997-2002



Source: Office of Crime Statistics and Research, Attorney General’s Department, SA

Only the offence categories of steal from dwelling and steal from retail show a consistent upward trend around the time of the heroin shortage. However, closer inspection of the graphs shows that the increase in the number of police incident reports began around mid 2000 for both offence categories. Upon consultation with representatives of SAPOL the rise in police incident reports for steal from dwelling from late 2000 was attributed entirely to a change in South Australian legislation from ‘break and enter’ charges to ‘serious criminal trespass’ charges. This change has resulted in an extra charge of theft being included in the incident reports. The rise in incidents of steal from retail was also described as being due to data collection issues. The change in legislation to serious criminal trespass also affected incidents of steal from retail, with additional theft charges being recorded. Also, at the time of increase shown in Figure 8.4 thefts from services stations began to be coded as shop theft instead of general theft. As a consequence of these changes in data recording practices it is not possible to state that the increases in the number of incidents of steal from dwelling (Figure 8.1) and steal from retail (Figure 8.4) were related to the heroin shortage.

An examination of Figure 8.5, reporting the number of police incident reports for fraud, shows a peak in offences just after the start of the heroin shortage. Due to the high variability in the reported number of police incidents it is difficult to tell whether this peak is occurring as a result of the heroin shortage or whether it is just natural variation in the data. Considering there are similar peaks unrelated to the shortage one would assume this increase was coincidental. There is no evidence of a sustained rise in fraud offences after the peak.

KI & MPCl data

Health and law enforcement KIs as well as MPCIs, provided feedback on both expected and observed changes in heroin users’ criminal activities as a consequence of the shortage and the differing effects of alternative drugs being used by this group.

A number of KIs suggested that, at least initially, an increase in acquisitive crime occurred as heroin users attempted to maintain their use of this drug given the price considerations mentioned in Section 2: Documenting the heroin shortage. In addition, a number of law enforcement KIs reported that heroin dealers had moved into other areas of criminal behaviour during the heroin

shortage to help fill the shortfall from heroin sales. The areas noted by these KIs were credit card and identity fraud.

In contrast, other KIs stated that acquisitive crime had decreased, with people transferring their drug use away from heroin and beginning to use less expensive drugs. A reported increase in methamphetamine use was seen by respondents as decreasing acquisitive crime due to being less expensive than heroin. The increase in methamphetamine use, however, was seen as relating to an increase in drug-induced behavioural crime.

Conclusion

The quantitative data alone provides little evidence of the impact of the heroin shortage on property crime. The qualitative data on fraud suggests that there may have been an impact on the number of police incidents as a result of the shortage. A number of KIs remarked that heroin dealers had moved into other areas of criminal behaviour during the heroin shortage to help fill the shortfall from heroin sales and that some of these areas incorporated credit card and identity fraud. However, considering the variability in the quantitative data relating to incidents of fraud it is not possible to say whether the heroin shortage impacted on fraud offences in Adelaide.

8.2.2 Break and enter

SAPOL data

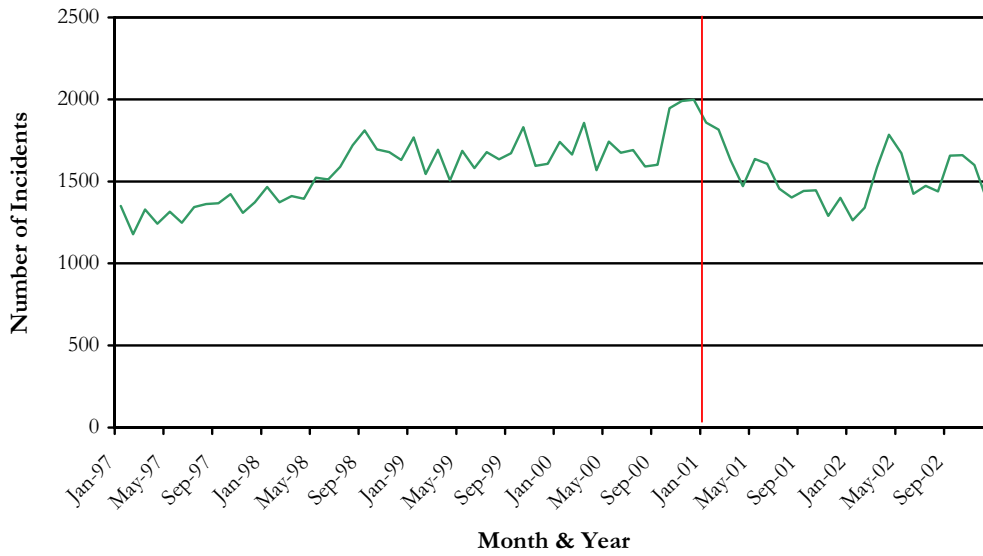
The offence category of break and enter consists of the following two offences:

- break and enter dwelling; and
- break and enter non-dwelling.

The number of police incident reports for these specific offences between 1997 and 2002, are presented in Figures 8.6 and 8.7. Both graphs show a small rise in offences around the time of the heroin shortage which require closer examination. The number of incidents for break and enter dwelling offences shows a pre-Christmas high during 2000 followed by a general decline in the number of incidents through to the beginning of 2002. Due to the increased number of break and enter dwelling incidents prior to the shortage it is unlikely that the heroin shortage was linked to a decline in the number of incidents of this type.

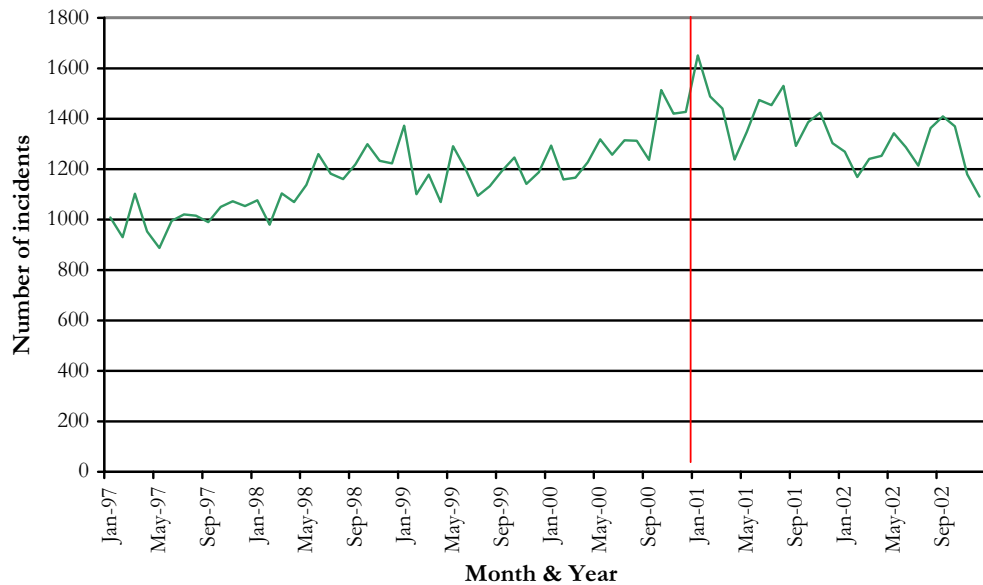
In contrast the peak in break and enter non-dwelling offences occurred after the 2000 Christmas period. However, the decline in the number of incidents and the dataset as a whole seems too variable to directly attribute any changes to the heroin shortage.

Figure 8.6: Number of police incident reports for break and enter dwelling, 1997-2002



Source: Office of Crime Statistics and Research, Attorney General’s Department, SA

Figure 8.7: Number of police incident reports for break and enter non-dwelling, 1997-2002



Source: Office of Crime Statistics and Research, Attorney General’s Department, SA

KI & MPCl data

Comments on the specific offence of break and enter non-dwelling were not made by KIs or MPCIs.

Conclusion

For both the number of incidents relating to the offences of break and enter dwelling and break and enter non-dwelling there was an increase before the time of the heroin shortage. For incidents

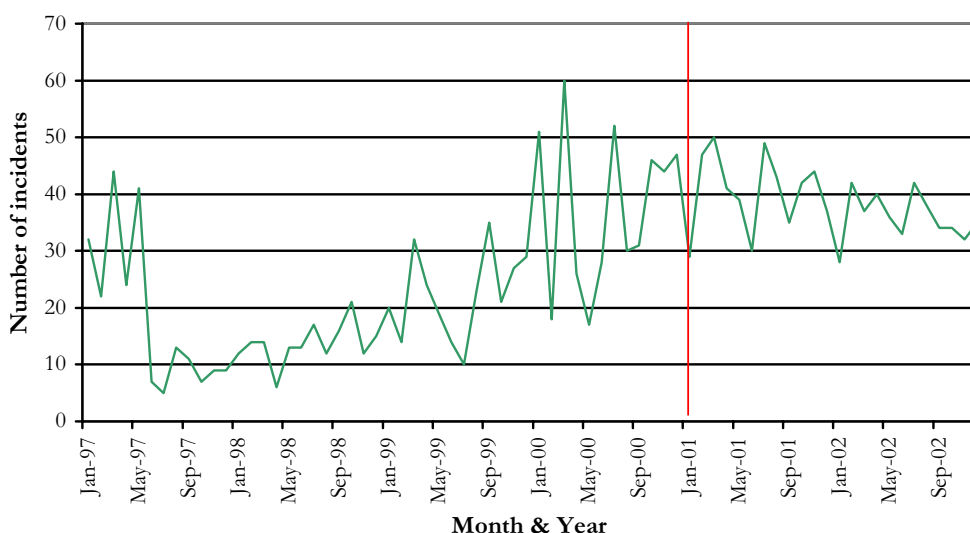
of break and enter non-dwelling this upward trend was maintained for a brief time following the advent of the shortage. Due to the 'early' increase of incidents for both of these offences and the varied pattern displayed before and after the heroin shortage there is insufficient evidence to state that the changes in incident rates for the category of break and enter were as a consequence of the heroin shortage.

8.2.3 Motor vehicle theft

SAPOL data

The number of incidents for motor vehicle theft (1997 to 2002) is shown in Figure 8.8. The incidents of motor vehicle theft have been gradually increasing since mid 1997. However, as demonstrated by the three distinct peaks in the data during 2000 this dataset is highly variable and any impact of the heroin shortage may be undetectable.

Figure 8.8: Number of police incident reports for motor vehicle theft, 1997-2002



Source: Office of Crime Statistics and Research, Attorney General's Department, SA

KI & MPCl data

Comments on the offence of motor vehicle theft were not made by KIs or MPCIs.

8.2.4 Crimes against the person

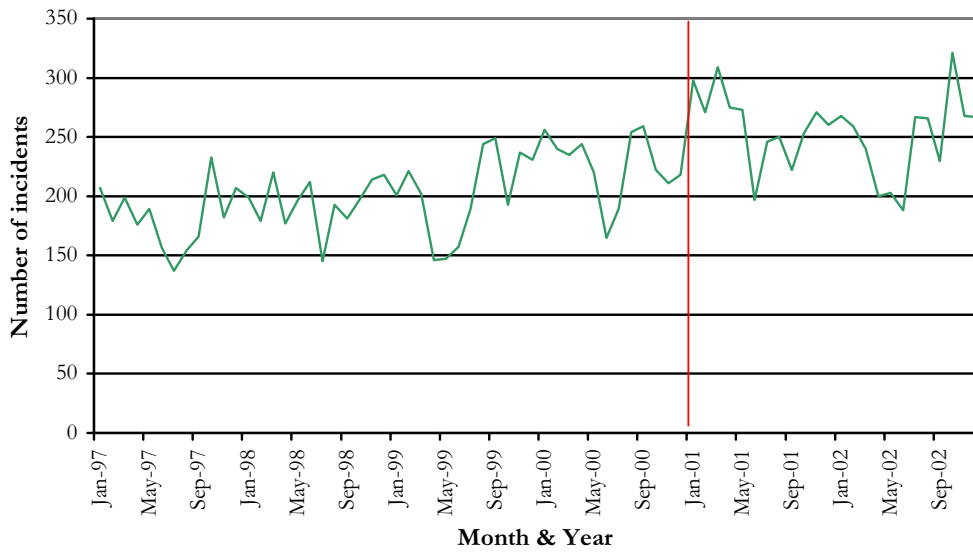
SAPOL data

The offence category of crimes against the person consists of the following offences:

- Weapon offences;
- Breaching an apprehended violence order; and
- Resist, hinder, assault police.

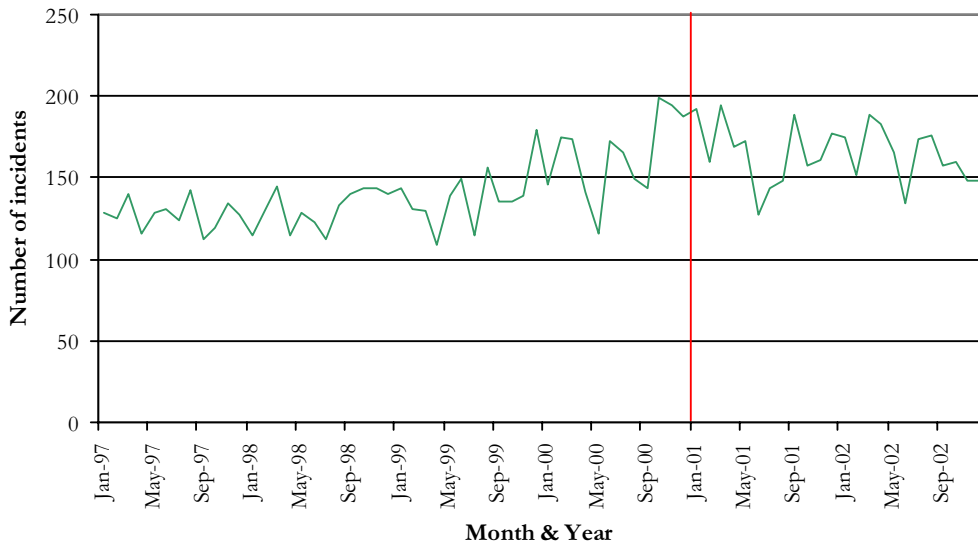
The number of police incident reports for these specific offences between 1997 and 2002, are presented in Figures 8.9 to 8.11.

Figure 8.9: Number of police incident reports for weapon offence, 1997-2002



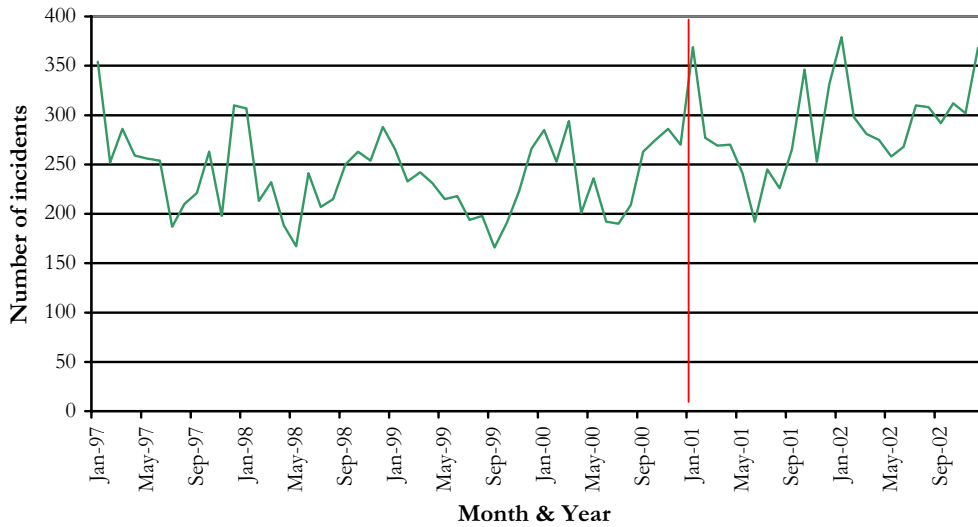
Source: Office of Crime Statistics and Research, Attorney General’s Department, SA

Figure 8.10: Number of police incident reports for breach apprehended violence orders, 1997-2002



Source: Office of Crime Statistics and Research, Attorney General’s Department, SA

Figure 8.11: Number of police incident reports for resist, hinder, assault police, 1997-2002



Source: Office of Crime Statistics and Research, Attorney General's Department, SA

There appeared to be a slight increase in the number of police incident reports for both weapons offences and resist, hinder, assault police. No increase was observed in the number of police incident reports of breach apprehended violence orders.

Time series analyses were carried out on the data for weapons offences and resist, hinder, assault police. The results of both analyses, after adjusting for possible seasonal effects, failed to find support for the rise being related to the heroin shortage.

KI & MPCl data

Health and law enforcement KIs as well as MPCIs noted an increase in the levels of violence, aggression and behavioural disorders associated with the rise in methamphetamine use amongst the previously heroin using population.

Conclusion

In accordance with qualitative feedback, quantitative data concerning incidences of violent and behavioural offences, specifically weapon offences and resist, hinder and assault police, initially showed some increase as a response to the heroin shortage. However, time series analysis revealed these effects to be too brief and not sufficiently significant to remain after adjusting for seasonal effects.

8.2.5 Robbery

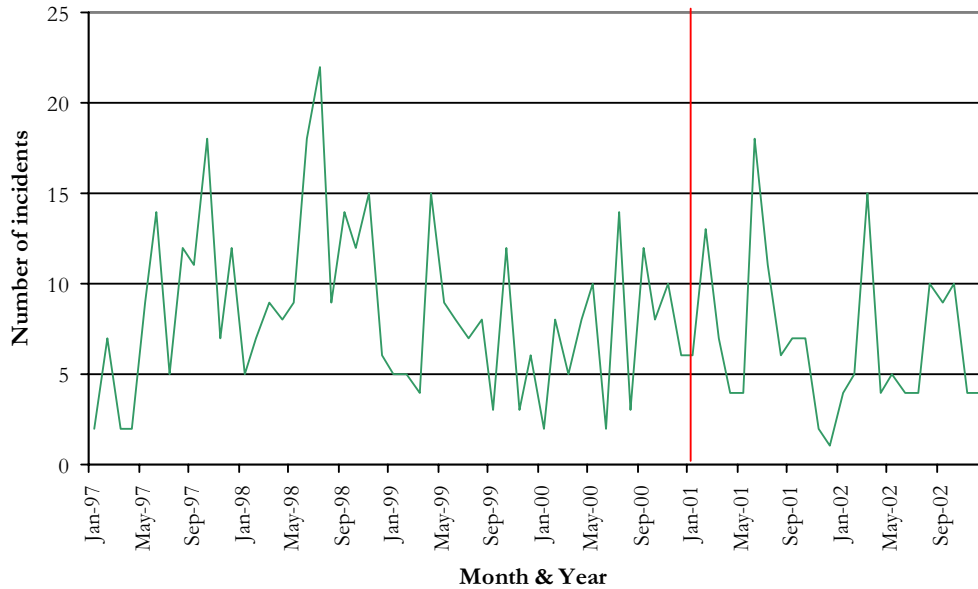
SAPOL data

The offence category of robbery consists of the following specific offences:

- Robbery with firearm;
- Robbery with weapon, not firearm; and
- Robbery without a weapon.

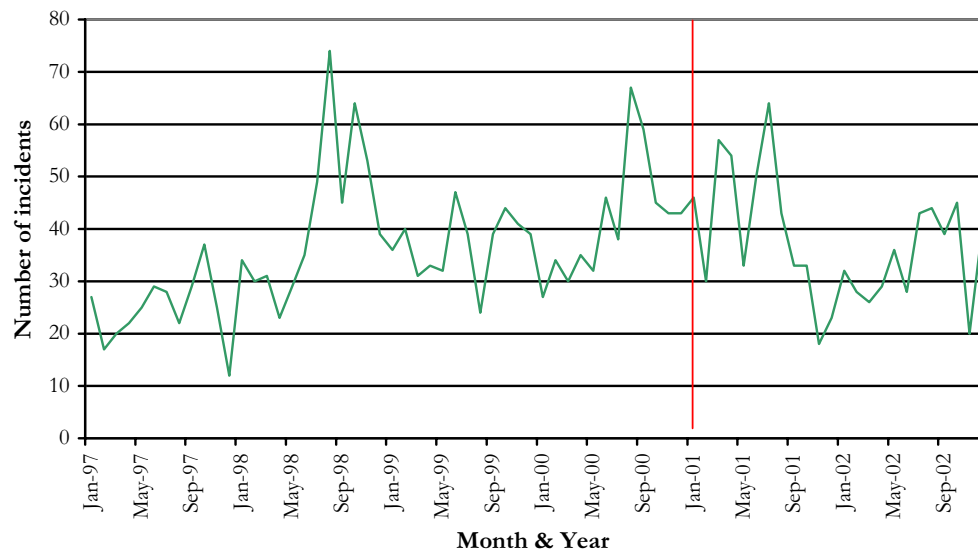
The number of police incident reports for these specific offences between 1997 and 2002, are presented in Figures 8.12 to 8.14.

Figure 8.12: Number of police incident reports for robbery with firearm, 1997-2002



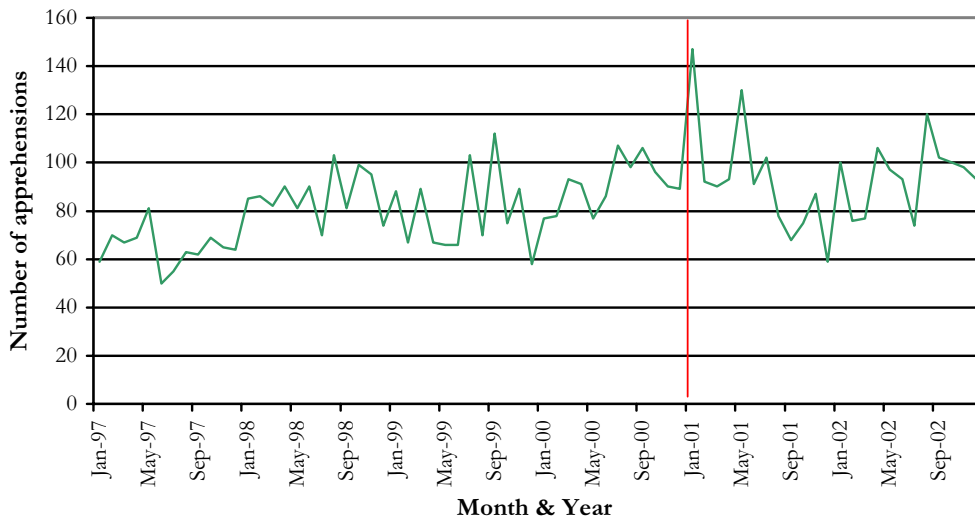
Source: Office of Crime Statistics and Research, Attorney General's Department, SA

Figure 8.13: Number of police incident reports for robbery with weapon, not firearm, 1997-2002



Source: Office of Crime Statistics and Research, Attorney General's Department, SA

Figure 8.14: Number of police incident reports for robbery without a weapon, 1997-2002



Source: Office of Crime Statistics and Research, Attorney General's Department, SA

The high variability of the data for each of these offence groups makes interpretation of any rises around the time of the heroin shortage problematic. For example the small peak in the number of robbery with firearm incidents seen to occur immediately following the heroin shortage is not large enough to distinguish it from similar peaks occurring at a number of other time periods pre- and post-shortage.

However, the data for the number of police incidents for robbery without a weapon is subject to less variation due to the higher number of cases overall. As a result the peak in offences evident immediately after the heroin shortage is less likely to be explained by data variability. A time series analysis found this to be statistically significant suggesting that the rise may have been a consequence of the heroin shortage. Incidences of robbery without a weapon returned to equivalent pre-shortage levels following this peak.

KI & MPCl data

Qualitative data from both health and law enforcement KIs as well as MPCIs mentioned that at the beginning of the shortage there was a sense of panic and desperation amongst heroin users. Being unable to source heroin and requiring increased funds to purchase what heroin could be found was reported as leading some drug users to increased acquisitive crime. Some MPCIs described this increase in acquisitive crime as being less planned and more opportunistic.

Conclusion

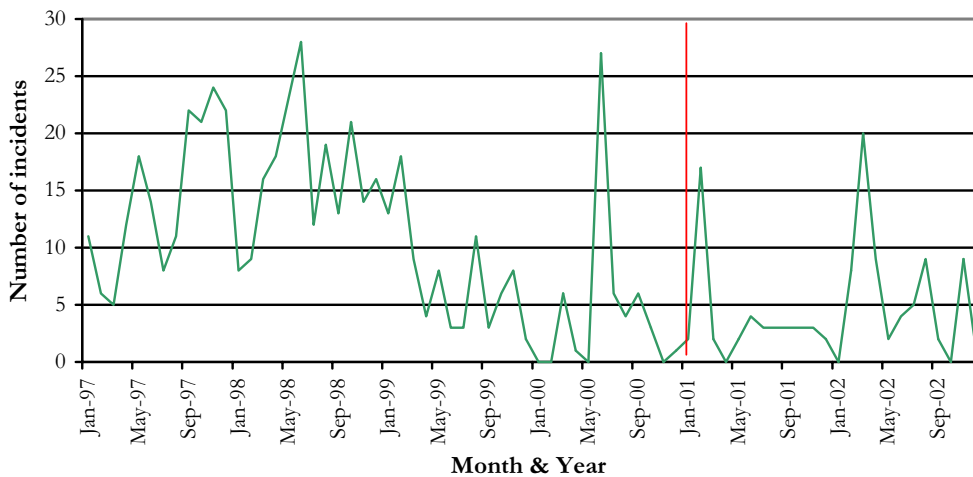
For incidents of robbery without a weapon, time series analysis showed a short lived but significant effect immediately following the start of the shortage. The qualitative data accords with the increase in robbery without weapon incidents. According to a number of KIs, robbery without weapon incidents are suggested to be opportunistic, with heroin users simply capitalising on any opportunities that present to try and fund their purchase of what heroin was available. No effect of the heroin shortage on incidents of robbery with firearm and robbery with weapon, not firearm was found.

8.2.6 Illicit sex work

SAPOL data

The number of incidents recorded for prostitution offences are presented in Figure 8.15. The number of cases for these offences per month is reasonably low and the data shows considerable variability. Upon consultation with representatives from SAPOL the changing trends in prostitution are almost entirely related to changing policing priorities. Hence, any impact the heroin shortage may have had on the frequency of illicit sex work behaviour cannot be determined from the available crime data.

Figure 8.15: Number of police incident reports for prostitution, 1997-2002



Source: Office of Crime Statistics and Research, Attorney General’s Department, SA

KI & MPCl data

Qualitative feedback from health and law enforcement KIs and MPCIs indicated that female heroin users had engaged in increased levels of prostitution due to the heroin shortage. This was discussed as a strategy employed near the beginning of the shortage to attempt to gain the increased funds needed to acquire what heroin was available. Whether this increase in the rates of prostitution was maintained throughout the heroin shortage was not discussed.

Conclusion

Taken together the quantitative and qualitative data suggest that a small increase in the number of prostitution offences occurred at the beginning of the heroin shortage. However, given the occurrence of similar peaks in the quantitative data pre- and post-shortage additional data would be needed to confirm that this was a significant change and one related to the heroin shortage.

8.2.7 Driving offences

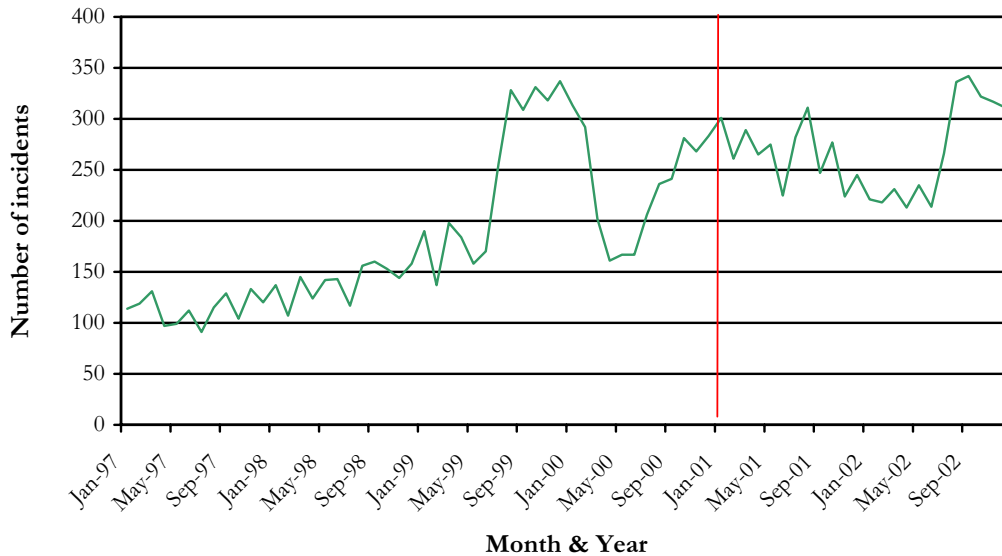
SAPOL data

The offence category of driving offences consists of two specific offences:

- Drive whilst disqualified; and
- Exceeding prescribed content of alcohol.

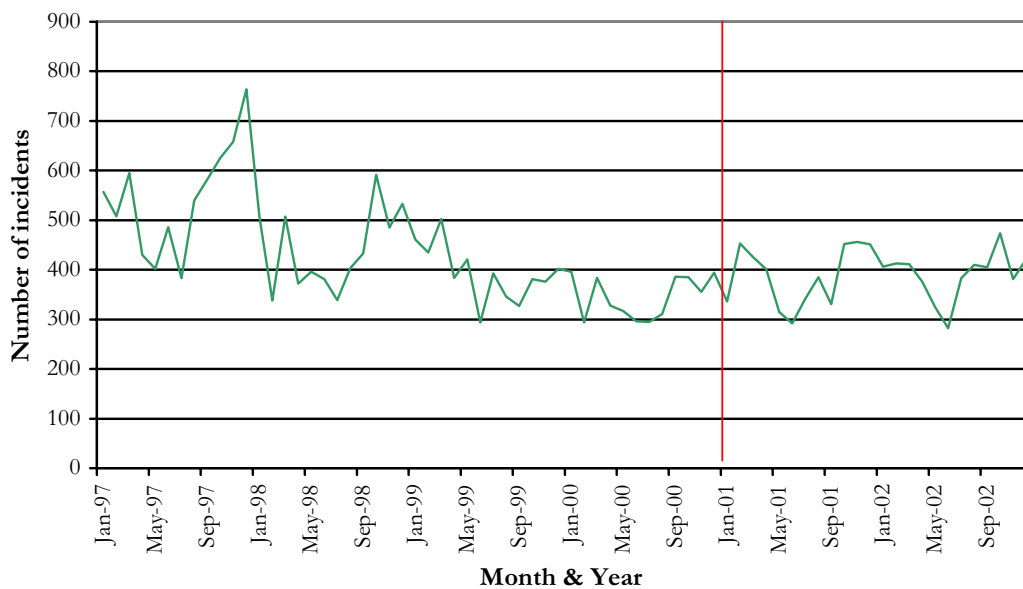
The number of police incident reports for these specific offences between 1997 and 2002, are presented in Figures 8.16 and 8.17.

Figure 8.16: Number of police incident reports for drive whilst disqualified, 1997-2002



Source: Office of Crime Statistics and Research, Attorney General's Department, SA

Figure 8.17: Number of police incident reports for exceeding prescribed content of alcohol, 1997-2002



Source: Office of Crime Statistics and Research, Attorney General's Department, SA

Two peaks can be seen when examining the number of incidents reported for drive whilst disqualified. Neither corresponded to the time of the heroin shortage suggesting that the shortage did not play a significant role in increasing incident rates. Also, upon consultation with representatives of SAPOL, there have been changes to the recording practices for traffic offences.

These were introduced in mid 1999 and involved minor traffic offences now being recorded on the Police Information Management System (PIMS). This change was described as accounting for the large variations in drive whilst disqualified incidents.

The number of police incidents for exceeding prescribed content of alcohol offences has been fairly consistent since April 1999. No evidence of an increase or decrease is seen during the heroin shortage period.

KI & MPCl data

One health KI mentioned that there could be an increase in the number of driving offences due to the increased amount of methamphetamine being used. Methamphetamine was described as having two methods of impact on the number of driving offences. First, while under the influence of methamphetamine there is increased risk taking behaviour associated with disinhibition and feelings of invulnerability. Second, while under the influence of methamphetamine, it was reported by this KI that people are able to consume more alcohol without feeling its effect.

Conclusion

A suspected increase in driving offences related to the increase in the use of methamphetamine reported by qualitative data has failed to occur to any discernible degree as evidenced by quantitative data.

8.3 Drug crime

Quantitative and, where available, qualitative data concerning criminal offending directly related to illicit drugs are presented in the following sections.

8.3.1 Drug manufacture and importation

Data concerning the importation of heroin is discussed elsewhere in this report (*Section 2: Documenting the heroin shortage*). Of relevance to South Australia are drug manufacturing offences related to methamphetamine and ecstasy. Unfortunately, due to current practices regarding specific coding of drug offences it is not possible to tease apart incidents of sale and manufacture of a specific drug.

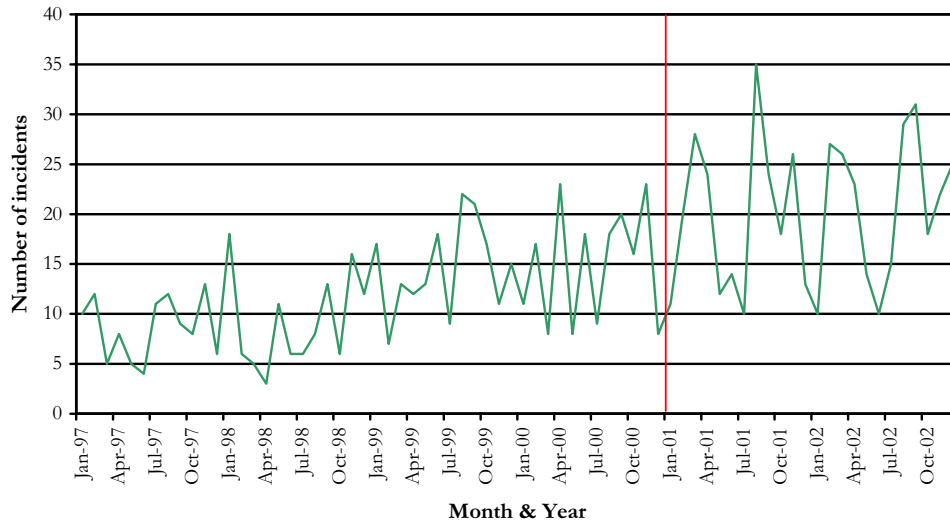
SAPOL data

The following offence categories for drug sale or manufacture will be examined:

- Sale or manufacture of methamphetamine; and
- Sale or manufacture of ecstasy.

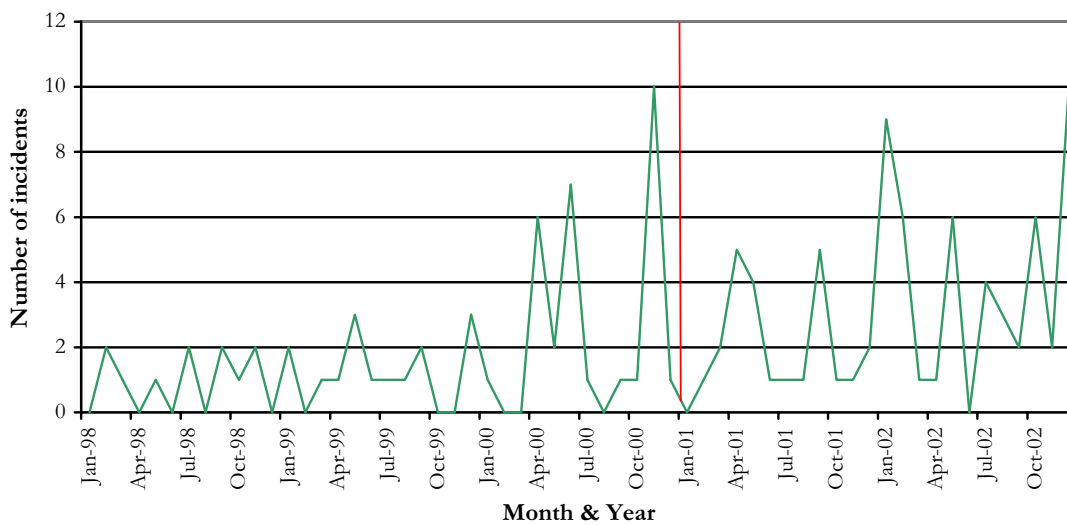
The number of police incident reports for these specific offences between 1997 and 2002, are presented in Figures 8.18 and 8.19. The data for the sale or manufacture of both methamphetamine and ecstasy are highly variable, partly because of the low number of incidents recorded. A small, but consistent rise in the number of police incidents for sell or manufacture methamphetamine can be seen in Figure 8.18 however the rise appears to have begun mid 1998. Some spiking of the number of incidents can be seen immediately after the heroin shortage began. It appears as if this initial spike is the beginning of a highly variable period of recording of offences from December 2000 through to November 2002. The number of incidents of sell or manufacture ecstasy are so low that it is not appropriate to infer trends.

Figure 8.18: Number of police incident reports for sell or manufacture methamphetamine, 1997-2002



Source: Office of Crime Statistics and Research, Attorney General's Department, SA

Figure 8.19: Number of police incident reports for sell or manufacture ecstasy, 1998-2002



Source: Office of Crime Statistics and Research, Attorney General's Department, SA

KI & MPCl data

A large number of health and law enforcement KIs as well as MPCIs, reported an increase in the local manufacture and distribution of methamphetamine. This reported increased production was summarised by one respondent as, "everybody knows a good cook these days". This reported increase in the local production of methamphetamine is discussed in more detail later in the current section.

Conclusion

Qualitative feedback strongly suggested that there had been an increase in the production of methamphetamine at a State level. The available quantitative data would support, at best, a very general increase in the number of incidents for sell or manufacture methamphetamine offences

that is distinct from any impact of the heroin shortage. It may be that an increase in local production reported by informants is yet to be reflected in the criminal statistics or that the increased production has not been as extensive as reported.

8.3.2 Drug dealing and the marketplace

Within this section, information from quantitative sources on drug dealing has been combined with more general qualitative data on the drug marketplace. Information will be presented by specific drug category where possible.

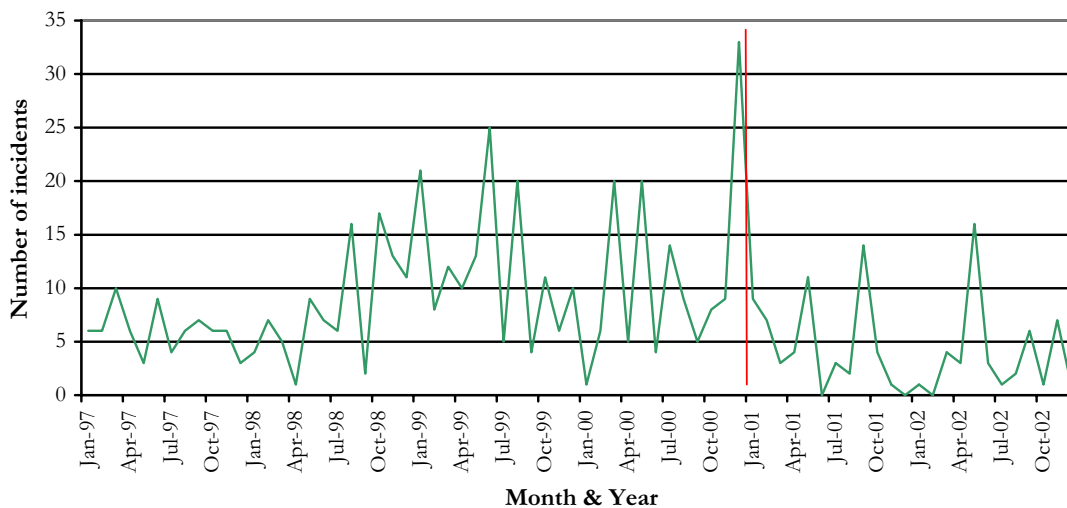
Heroin and other opioids

SAPOL data

Available data concerning the incidents of sale and possession offences for various categories of drug are presented below. It should be noted that as a result of offence coding practices within the State it is not always possible to separate particular drug types within a given offence category or type of offence.

The number of incidents of sell or trade heroin are shown in Figure 8.20. The number of incidents of sell or trade heroin offences does not show any significant downturn as a consequence of the heroin shortage. However, immediately prior to the shortage there is a pronounced spike in the data. Why there is a pronounced peak in the incidents of sell or trade heroin before the shortage is unclear.

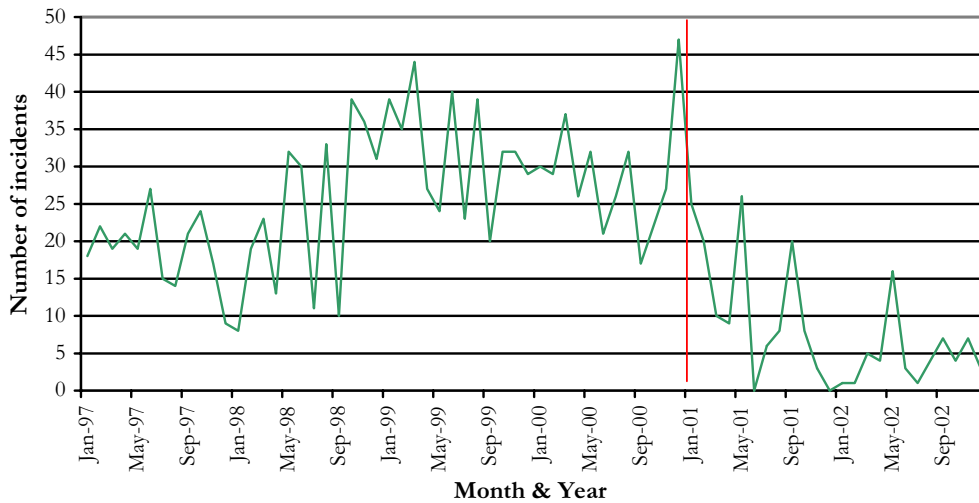
Figure 8.20: Number of police incidents for sell or trade heroin, 1997-2002



Source: Office of Crime Statistics and Research, Attorney General’s Department, SA

The number of incidents for possess or sell opioid offences, as opposed to just heroin, is shown in Figure 8.21. As would be expected from the data presented in Figure 8.20 a peak in incidents immediately prior to the shortage is again observed. The number of police incidents for opioids (possess, sell) post-shortage is much lower than the number pre-shortage however it is not possible, on the basis of the information available, to directly attribute this difference to the heroin shortage.

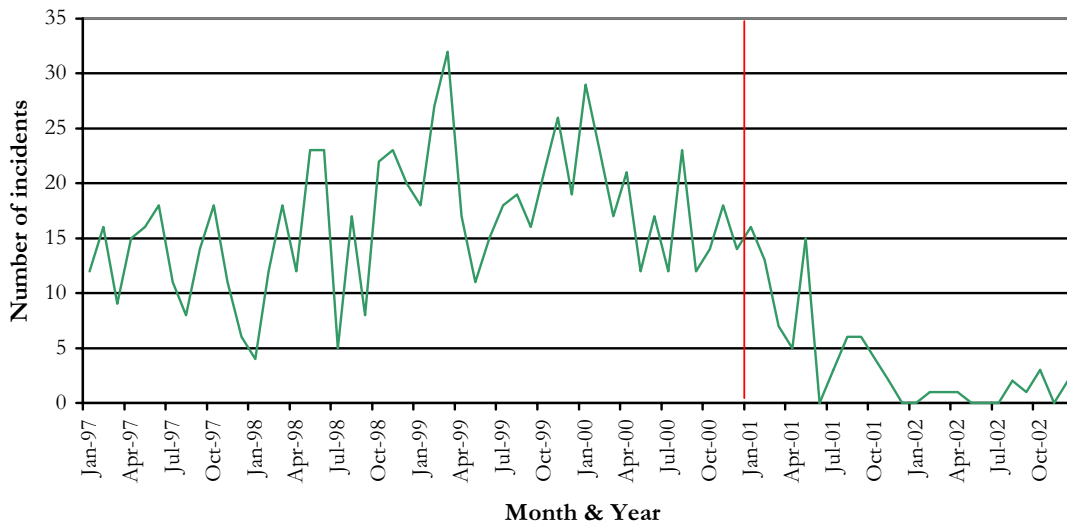
Figure 8.21: Number of police incident reports for opioids (possess, sell), 1997-2002



Source: Office of Crime Statistics and Research, Attorney General's Department, SA

Figure 8.22 shows the number of incidents for possession of heroin or other opioids and possess implements of use charges. There appears to be a downward trend in the number of incidents just after the heroin shortage began.

Figure 8.22: Number of police incident reports for possess heroin or other opioids and possess implements, 1997-2002



Source: Office of Crime Statistics and Research, Attorney General's Department, SA

KI & MPCl data

Both health and law enforcement KIs and MPCIs reported that the South Australian heroin market had changed as a consequence of the heroin shortage. These changes involved heroin purity, patterns of heroin dealing, market visibility and the accessibility of the heroin market.

Prior to the shortage KIs and MPCIs reported that there were large numbers of home (dealer) and street based heroin dealing and that dealers were easily accessible and even friends/fellow users. During the heroin shortage the pattern of heroin dealing changed. As previously discussed, heroin dealers were described as either diversifying the range of drugs they were selling or ceasing selling. Several respondents mentioned that most heroin users now also sold methamphetamine which was a new behaviour.

In addition to these changes, how and where drug users contacted dealers was reported as having changed. A decline in street dealing was noted as was a decrease in home based heroin deals. Many MPCIs reported that prior to the shortage if someone wanted to purchase heroin they would simply travel to a drug dealer's home. During the heroin shortage it was reported by both MPCIs and KIs that home based dealing began to be replaced with mobile drug dealing. Mobile dealing generally involves drug users ringing a mobile number belonging to the dealer where they place an order for particular drugs and arrange a time and meeting place. The reasons underlying this shift in the form of drug dealing being employed was reported by KIs and MPCIs as a response to dealers being harassed or assaulted in their homes for any heroin that was available. During the shortage some MPCIs and health KIs reported drug dealers actually initiating contact with drug users to inform them when some heroin was available for sale. This dealer initiated contact had not been seen before.

In the wake of the heroin shortage the South Australian market was described as becoming, what is in effect, more professional. Rather than sourcing heroin from user-dealer friends it was reported by KIs and MPCIs that drug users were presently more likely to have to travel to specific venues and purchase heroin from organised groups. It was noted that there had generally been an increase in the travel time required to source heroin after the shortage, with local distribution of heroin appearing to be more centred around key 'hot spots'.

Some KIs and MPCIs provided additional information on the groups who were seen as dominating the South Australian heroin market; Asian gangs. It is safe to assume that by the term Asian this feedback was actually referring to Vietnamese based groups considering their historical involvement in South Australian heroin distribution. The heroin market in South Australia was still seen as being under Asian control after the heroin shortage. Some law enforcement KIs reported that the same heroin supply lines and networks were being used as prior to the shortage.

Prior to the shortage the heroin market was described by respondents from all three qualitative data sources as having high visibility and street presence. The heroin market was described as having high visibility by KIs due to the ease with which street dealers could be identified and seeing signs of drug using paraphernalia and people under the influence of heroin on city streets. Following the heroin shortage, KIs reported that the visibility of the heroin market had decreased. This was seen as attributable to changes in the dealing structure as well as people using other forms of drugs.

Feedback relating to the current size and accessibility of the heroin market was conflicting. Some feedback from KIs and MPCIs reported that the heroin market had become much more closed and insular. This was evidenced by statements concerning the need to have existing contacts within the heroin using scene to be able to source heroin. In contrast, some MPCIs mentioned a recent surge of new, younger heroin users and dealers. This was evidenced by statements discussing that prior to the shortage one heroin user would tend to know most of the other more serious, as opposed to casual, users of heroin.

Conclusion

A large amount of qualitative evidence suggests that the heroin shortage was keenly felt in South Australia. The available quantitative data reviewed provides some support to this. Decreases in the number of police incidents for possess heroin or other opioids and possess implements were identified and it was thought that the shortage had contributed to the speed of the decline as opposed to its instigation.

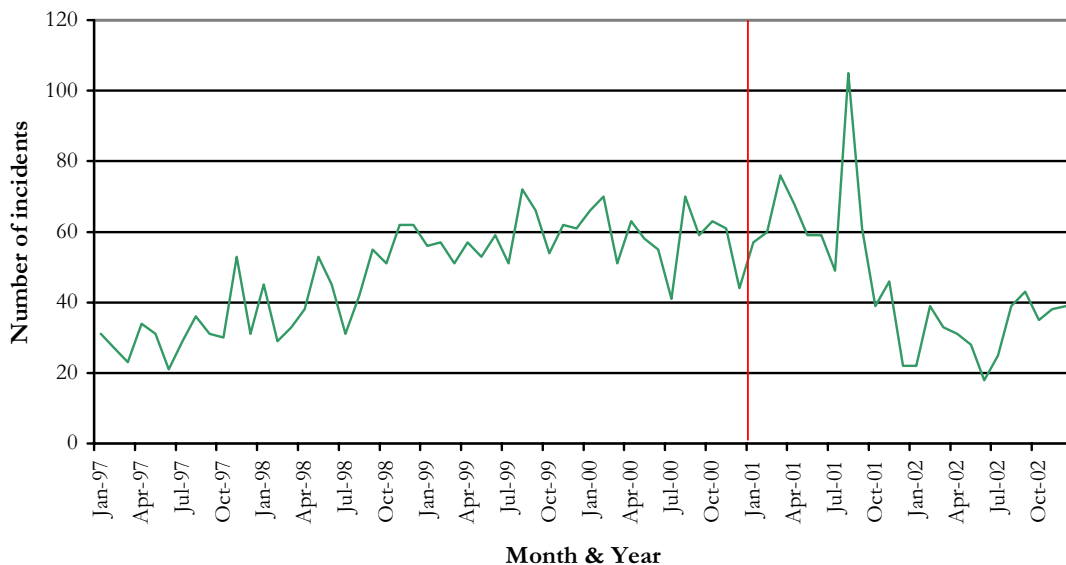
The failure of the number of police incidents for sell or trade heroin to evidence any change around the time of the heroin shortage is puzzling. The qualitative reports clearly identify difficulties in obtaining heroin during the shortage and it was expected that a decrease in the number of sell or trade heroin offences would be seen. An explanation for this finding may lie in a number of different areas including the reporting criteria used by police and the variability associated with small numbers of cases for this offence. Further analysis is required to identify the possible underlying causes of this discrepancy.

Methamphetamine

SAPOL data

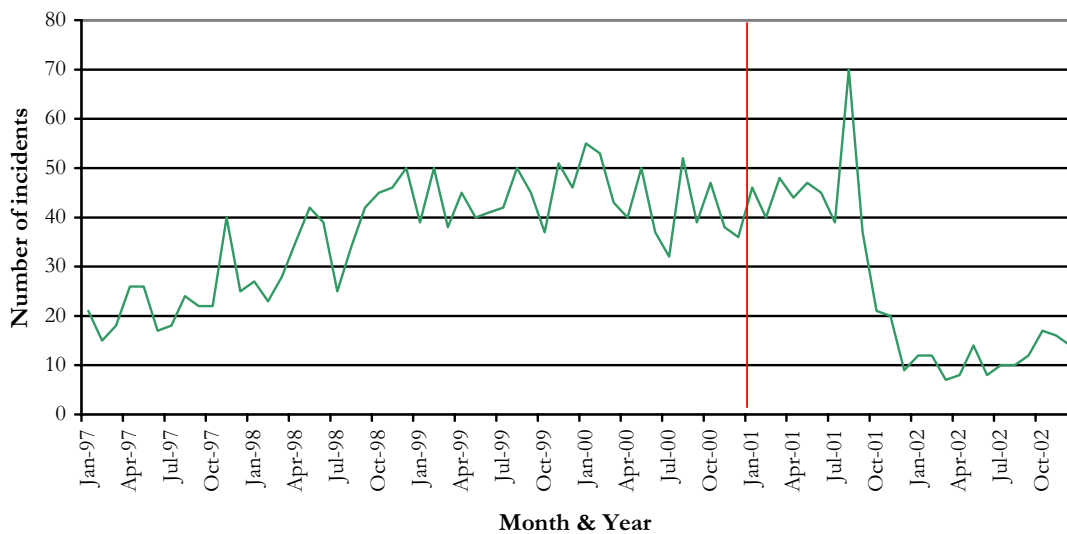
The total number of methamphetamine related incidents, including possession, sale and manufacture charges, is shown in Figure 8.23. The incident data immediately following the advent of the heroin shortage does not demonstrate any change from pre-shortage levels. However, seven months after the start of the heroin shortage there is quite a large spike in methamphetamine related incidents. However, due to such an extended lag time between the start of the heroin shortage and the observed peak in incidents it is considered most appropriate to view this brief increase as being unrelated to the heroin shortage. Upon consultation with representatives of SAPOL this increase was seen as partially relating to enquiries originating from 'Operation Atlantic'. This was a major drug phone in day carried out in May 2001.

Figure 8.23: Number of police incident reports for methamphetamine (possess, sell, manufacture), 1997-2002



Source: Office of Crime Statistics and Research, Attorney General's Department, SA

Figure 8.24: Number of police incident reports for possess methamphetamine or implements for use, 1997-2002



Source: Office of Crime Statistics and Research, Attorney General’s Department, SA

The number of incidents for possession of methamphetamine or implements for use are displayed in Figure 8.24. This data shows the same peak as observed in Figure 8.23, though less pronounced, and a similar lack of discernible impact from the heroin shortage.

Feedback obtained from SAPOL representatives discussed the decline in incidents from late 2001 for both Figures 8.23 and 8.24 as being related to the introduction of the police drug diversion scheme in South Australia. The purpose of this scheme is to divert minor possession offences from the apprehension report process. Hence, this should relate to a decline in incident reports concerning drug possession charges.

KI & MPCl data

Both health and law enforcement KIs and MPCIs described the methamphetamine market as having grown in response to the heroin shortage. This increase related to both the number of people using methamphetamine and local production. Previous sections have discussed the reported increase in the use of methamphetamine and this discussion will not be repeated here (see Section 3: Changes in patterns of drug use).

The increased production of methamphetamine at a local level was continually discussed in the qualitative data. Law enforcement KIs and MPCIs reported that, at higher organisational levels, the production of methamphetamine was controlled by OMCGs. Methamphetamine production was described as highly decentralised.

KIs discussed the presence of many low yield methamphetamine producing laboratories dispersed across Adelaide and South Australia. Law enforcement KIs described these laboratories as often involving no more than an amateur producer or ‘cook’ who made enough methamphetamine to provide for a small network of associates; potentially up to eight friends. Despite the small scale of these methamphetamine laboratories it was noted by law enforcement KIs that even these amateur cooks would often have some form of connection to OMCGs. The overall picture of the methamphetamine production market in South Australia is that of a loosely connected series of small-scale producers.

The visibility of the methamphetamine market was described by some law enforcement KIs as having recently decreased in terms of the dealer and user populations. It was noted that, generally, the methamphetamine market is less visible to the general public than the heroin market. It was unclear from the feedback whether the law enforcement KIs felt that the decreased visibility of the methamphetamine market was related to the heroin shortage.

It was reported that the behavioural consequences of methamphetamine abuse are not readily apparent to the untrained observer. The behavioural effects of methamphetamine can be dismissed as elevated mood or excitement. Law enforcement KIs reported that an increased presence of methamphetamine on the street had been observed by front-line police officers who are trained to identify the signs of methamphetamine use.

Another aspect of the decrease in visibility of the methamphetamine market was the means by which users obtain the drug and the public presence of dealers. Methamphetamine dealing has been described by law enforcement KIs as becoming more circumspect as evidenced by a decrease in dealing and the presence of methamphetamine in the club environment.

Conclusion

While the KIs have described a growth in the methamphetamine market occurring as a result of the shortage, they have also reported a decrease in the visibility of dealers. The reports by the KIs are somewhat supported by the available quantitative data which did not show a heroin shortage related decline in the number of police incidents for possess, sell or manufacture methamphetamine offences.

Other drugs

KI & MPCl data

Feedback from KIs and MPCIs tended to be concerned with the methamphetamine and heroin markets, however, some additional information was provided in relation to the cannabis market. One law enforcement KI noted that the larger scale South Australian cannabis growers were travelling to Sydney to trade their crops for ecstasy and, surprisingly, cocaine. Prior to the shortage cannabis growers were described as travelling to Sydney to trade their crops for heroin. Several MPCIs mentioned a recent increase in price for cannabis. However, this was not seen by MPCIs as relating to the heroin shortage but rather changes in South Australian legislation regulating the growing of cannabis plants.

Conclusion

The impact of the heroin shortage on the sale of heroin and opioids is not immediately clear. However, in combination with the number of incidents for possess heroin or other opioids and possess implements for use, this data does show that the heroin market, at least as it is reflected in criminal statistics, is presently quite suppressed in relation to pre-shortage levels. The quantitative data relating to methamphetamine does not reflect the magnitude of the increase of methamphetamine use described by the qualitative responses.

8.4 Summary

The available quantitative data failed to demonstrate changes in the rates of incidents per month that were likely attributable to the heroin shortage. The only exception to this was the statistically significant spike in incidents of robbery without a weapon following the advent of the heroin shortage. While changes in the incidents rates that could be likely related to the heroin shortage were generally not found the available crime data still highlights several key points.

To the degree that criminal statistics reflect the extent of drug use:

- Heroin use is presently at much lower levels than pre-shortage;
- The use of other opioids is quite low (as shown through Figure 8.22, number of incident reports for possess heroin or other opioids and possess implements); and
- The use of methamphetamine has not increased in response to the heroin shortage and the incident rates are presently much lower than pre-shortage levels.

Qualitative data relating to criminal activity discussed the following main points:

- An overall decrease in acquisitive crime due to the transfer to the use of drugs cheaper than heroin;
- An overall increase in behavioural crime due to the deleterious effects of methamphetamine use;
- An increase in violent crime due to the effects of increased methamphetamine use; and
- An increase in the local production of methamphetamine.

There were a number of areas of conflict between the qualitative and quantitative feedback. These shall be discussed in turn:

- There is insufficient quantitative data to support KI reports of an overall increase in the rates of acquisitive crime associated with the heroin shortage;
- There is insufficient quantitative data to support KI reports that there has been a sustained increase in behavioural and violent crimes, associated with the heroin shortage;
- The quantitative data has not demonstrated an increase in the number of incidents of methamphetamine production offences despite KI suggestions that more 'cooks' have emerged as a result of the shortage;
- A suggested increase by KIs in the incidents of fraud, derived from heroin dealers engaging in these activities to replace lost income due to the shortage, was not reflected in the quantitative data. However, the numbers of fraud charges per month are reasonably high and any impact from heroin dealers may simply have been absorbed into the data set. Without detailed information as to the number of heroin dealers in South Australia at the time of the shortage this qualitative feedback can be neither supported or refuted;
- An expected rise in prostitution offences was not reflected in the quantitative data. However, there has been a marked decrease in the number of prostitution offences recorded since early 1999. Hence, the generally low numbers of offences interspersed with significant peaks may be more reflective of changing police practices as opposed to being reflective of actual rates of illegal activity; and
- An expected rise in driving offences due to the effects of methamphetamine was not reflected in the quantitative data.

In contrast to the large number of discrepancies between the qualitative and quantitative data sources there was one point of agreement. The reports from KIs of an increase in stress and panic by heroin users was suggested to have led to an increase in opportunistic crime and evidence for this was found in the quantitative data. An increase in the number of incidents of robbery without a weapon was related to the heroin shortage. As this form of robbery did not involve the pre-meditation that can be implied by weapon offences this data is supportive of KI reports of a brief period of increased, highly opportunistic crime.

9 Changes in Health and Law Enforcement Agencies as a Result of the Shortage

Summary

- An increase in presentations to emergency departments of psychotic individuals (suggested to have been as a result of methamphetamine abuse) led to the development of policies on managing such presentations to minimise harm to staff and other patients.
- The reported increase in heroin users abusing methamphetamine led to some treatment agencies identifying significant gaps in knowledge and treatment options around methamphetamine abuse.
- A lack of effective treatment for methamphetamine abuse was consistently mentioned by health KIs and counselling (standard treatment) was seen as less efficacious as when this could be combined with pharmacological support.
- Overall the heroin shortage revealed a paucity of knowledge, among users and treatment professionals, and lack of programs available for drugs other than heroin.
- A number of aspects of law enforcement agency operations were affected by the heroin shortage with most centring on the impact of an increase in methamphetamine abuse.
- Law enforcement KIs identified a need for more training and education around dealing with the behavioural consequences of methamphetamine abuse and clan labs.

9.1 Introduction

The possible impacts of the heroin shortage on both health and law enforcement agencies are discussed in this section. The primary source of information was KI interviews.

9.2 Health

To examine the impacts of the heroin shortage on health agency operations, data has been sourced primarily from KI interviews. Quantitative data on the impact of the heroin shortage on treatment seeking and other agency specific issues has been discussed in *Section 7: Treatment*.

Overall, health based KIs responses were mixed in relation to the impact of the heroin shortage on their respective organisations. A number of respondents did not feel that the shortage had affected the delivery of health services both in their organisations specifically and for the wider community. Of those that did feel that a change had occurred, their responses are presented in this section.

9.2.1 Aggression and violence

While there was a large degree of feedback as to increased levels of violence and aggression within the drug using community, generally attributed to increased methamphetamine use, not many respondents discussed the impact of this violence on their agencies. Hospital emergency department personnel identified increased levels of violence associated with people presenting in deluded or psychotic states. This had necessitated one respondent developing policy on how the hospital should manage such presentations to minimise the harm and risks to staff and other patients.

9.2.2 Changes in drug use

The management of methamphetamine dependency and its impact on health agency operations was mentioned by a number of health KIs. This impact was reported by representatives from differing agencies so the difficult issue of managing methamphetamine dependence was not limited to only one particular type of health service. In a general sense the limited options and services available for methamphetamine dependent people were noted and agencies reported refocusing their resources in attempts to provide more services for methamphetamine users.

One of the first impacts of the heroin shortage on health agencies was that it identified a need for agencies to increase their knowledge base and research activities concerning the various negative impacts of methamphetamine use/dependence and how to effectively intervene and manage this situation. It is clear from the feedback that despite methamphetamine being mentioned as having been an increasing problem for South Australia prior to the heroin shortage, there was an identified need for capacity building within the health sector around the issue of methamphetamine dependence/abuse since the shortage occurred.

In relation to treatment for methamphetamine, agencies reported several key issues. A primary concern is that only counselling is available for methamphetamine dependent people. Maintenance pharmacotherapy is not commonly used to treat methamphetamine dependence. Stand alone counselling was seen as being a less efficacious form of treatment for drug dependence by a number of KIs than psychological support in combination with a pharmacotherapy program. For example, within the counselling setting one respondent described it as being harder to encourage methamphetamine users to admit that they actually have a problem than it is for heroin users.

A further complication is the reported increase in having to manage mental health issues. However, mental health issues are endemic to the heroin using population and, as such, would be an existing issue for the various health agencies. It seems more likely that these comments relate to an increase in the specific types of mental health issues, such as paranoia and other delusional thoughts and psychotic symptoms, associated with high levels of methamphetamine use. This change in clients' presenting issues as a response to the shortage was seen as resulting in agencies needing to make more referrals to link clients with differing types of specialist services, for example, mental health specialists and domestic violence counsellors.

Accessing detoxification for methamphetamine users was seen as potentially difficult, though it was not clear whether this was particular to the start of the heroin shortage. One respondent commented that the inpatient unit at Warinilla, one of DASC's key clinics and the only one to provide detoxification services for opioids and other illicit drugs, had changed from mostly servicing opioid detoxification to now focusing on methamphetamine detoxification. This reported change is supported by the data presented in *Section 7: Treatment*.

Beyond the issue of increased methamphetamine use, the changes in drug using patterns reported throughout this document as a consequence of the shortage were seen by some as having other impacts on health agency operations. The heroin shortage revealed the paucity of programs available for drugs other than heroin and the need for additional research and resources in these areas as well as needing to adapt to the more chaotic drug use that occurred during the shortage. Agencies reported generally having to broaden their focus and cope with a wider range of presenting problems. Some more specific changes noted with service delivery to drug users included: an increase in the prescription of anti-depressants and anti-psychosis medication; difficulties, initially, in finding places in treatment for clients and an increase in the number of morphine withdrawals, which were noted as taking longer and being harder to manage than heroin.

Agency representatives also reported a need to provide additional education to drug users regarding: the range of new drugs and how people were using these incorrectly (injecting non-injectable drugs), the consequences of the intravenous use of buprenorphine and more information on the use of various pills and how to avoid overdose when using these substances.

Other impacts on health agency operations have already been discussed throughout this document. These include:

- Increased vein care issues (abscesses/infections) from the injection of non-injectable drugs;
- Increased demand for certain injecting equipment that can help with the injection of non-injectable drugs. For example, wing infusions; and
- People selling their methadone to heroin users who were not prepared to enrol in treatment.

Another issue commonly mentioned was the intractability of drug dependence. It was emphasised that drug markets are demand driven and the specific drug being used was simply a means to an end. Clients were willing to use other drugs, even those with radically different effects, when their preferred drug was not available and that there would always be a drug available somewhere for clients to use. Consequently, regardless of the primary drug of dependence, the aim of clients was very rarely sobriety and abstinence was seen only as a last resort.

9.2.3 Interagency links

Not many comments were received which specifically discussed interagency links. However, as mentioned above, there were reportedly increased referrals to various counselling services and programs at other agencies where clients could access psychological support. However, no figures as to referrals between agencies were made available. Also, the drug and alcohol and mental health sectors in Adelaide consisted of a limited number of agencies and, as such, knowledge of other programs and interagency links tend to already have been established to a greater or lesser degree.

9.2.4 Staff issues and treatment demand

There was generally a reported increase in treatment seeking as a consequence of the heroin shortage with treatment services tending to report being overcrowded when the heroin shortage first occurred. It was noted by some respondents that it was reasonably difficult to get a place with a treatment service prior to the shortage and a lot harder afterwards. However, as discussed in *Section 7: Treatment*, while the data relating to opioid use and the pharmacotherapy admissions and in-patient contacts does not support this it may be that DASC treatment programs were operating at capacity. Consequently, any feedback relating to requiring increased resources and personnel to address the changes in the drug using population as a consequence of the heroin shortage must be interpreted cautiously. Some KIs reported that the overall numbers involved were similar it was just that the presenting problems of drug users are now more complex and difficult to effectively intervene with.

9.2.5 Conclusion

The key data to emerge from health agency KIs was the impression that despite a steady pre-shortage increase in the problematic use of methamphetamine the heroin shortage highlighted that Adelaide drug and alcohol treatment services tended to be heroin focussed with a paucity of programs for other drugs. The need for capacity building at the time of the shortage around both methamphetamine and other opioids and benzodiazepines use was readily apparent. Methamphetamine dependence was also seen as particularly difficult to effectively treat.

9.3 Law enforcement

To examine the impacts of the heroin shortage on law enforcement agencies, data has been sourced entirely from law enforcement KIs. Unlike the feedback obtained by health KIs, there was a great deal of agreement on the impact of the heroin shortage on law enforcement agencies. The impact revolved around three areas of policing; communication, operational policing, and the primary law enforcement drug initiative in Adelaide, Operation Mantle. One of these areas, communication, was marked by a lack of change as it was reported that effective strategies were already in place and functioning well pre- and post-shortage.

9.3.1 Communication

All but one law enforcement KI commented on the effectiveness of the communication strategies employed by police during the time of the shortage. In relation to accessing information, none of the law enforcement representatives reported any difficulties. It was commonly reported by KIs that information from operational level staff and officers was routinely passed up the chain of command. However, it was also stated that this flow of information was very much two-way, with information on drug trends being disseminated across the agencies. The methods of this distribution were repeatedly discussed as involving both formal and informal pathways.

The most useful sources of information were described by many respondents as being informants or drug users/dealers. In addition, extensive liaison with a number of other allied agencies was noted. Some of these agencies include:

- Inter-Governmental Committee on Drugs
- Drug and Organised Crime Investigation Branch
- National Drug Law Enforcement Research Fund
- Drug Use Monitoring in Australia data
- State Intelligence Branch
- National Crime Authority
- Clean Needle Program
- Drug Action Teams
- Seminars and conferences
- Statistics/published research
- Contact with Operation Mantle staff
- Liaising with colleagues in other States
- Informants
- Drug users/dealers
- Electronic surveillance
- Undercover operations

9.3.2 Operational policing

Law enforcement KI reported that the heroin shortage impacted most obviously on day to day policing. The majority of changes were reported to have occurred in response to the perceived increase in the abuse of methamphetamine and the associated behavioural consequences.

At a Local Service Area level, some police stations that had formerly been focused on heroin use were now turning their attention to the increasing abuse of methamphetamine. One example provided by a KI, which has been discussed in *Section 3: Changes in patterns of drug use*, identified a complete shift from heroin to speed (amphetamines) within one suburb. On the other hand the shortage of heroin was reported to have freed up resources which were then able to be diverted to the new drug-of-choice for the region.

At the street level, KIs stressed an increase in the behavioural consequences of methamphetamine abuse. For example, a number of law enforcement KIs reported that violence had become more prevalent and that many drug users were now displaying “no fear”. This change was attributed to the increased uptake of methamphetamine and impacted on day to day operations. Police were subject to increasing levels of violence and abuse. Training to deal with the violence and unpredictability of speed users was reported to have been increased. KIs did not provide information on how extensive the increase in additional training was.

One of the most consistent comments from law enforcement KIs was the impact of the increasing number of ‘clan labs’ (clandestine methamphetamine laboratories). The increase in clan labs was

noted as becoming more of an issue for police and there was an increased focus on this issue by law enforcement agencies. It was reported that police had had increased training and education around how to appropriately deal with any labs that were found. The training was focused around the chemical hazards presented by clan labs. While the standard operating procedure of calling on the Drug and Organised Crime Investigation Branch to both dismantle the lab and explore any links with organised crime did not change, the frequency with which this practice was used increased.

A smaller number of law enforcement KIs mentioned an increasing focus on non-heroin aspects of organised crime. These KIs suggested that there was an increase in OMCG involvement in amphetamine production as a result of the heroin shortage.

9.3.3 Operation Mantle

Operation Mantle was developed to address drug problems and related criminality, and to reduce the incidence and severity of the symptoms associated with illicit drug use (Williams, White, Teece & Kitto, 2001). A number of law enforcement KIs referred to the impact that the heroin shortage had on Operation Mantle. Specifically, KIs reported that a shift had occurred in the focus of the program from heroin towards methamphetamine. While Operation Mantle was designed to tackle a range of drugs of dependence, prior to the shortage, heroin was described as being the key focus.

9.3.4 Conclusion

It is readily apparent from the wealth of information provided by law enforcement KIs that the primary impact of the heroin shortage on law enforcement agencies in South Australia has been a shift in the focus of Operation Mantle to methamphetamine, an increase in activity associated with clan labs, and the provision of more information on the management of people under the influence of methamphetamine.

9.4 Summary

The possible impacts of the heroin shortage on both health and law enforcement agencies have been assessed using KI data. Law enforcement and health agencies reported that the heroin shortage had changed some aspects of their operations.

The impacts on health agencies were:

- The need for capacity building at the time of the shortage around both methamphetamine based issues as well as other opioids and benzodiazepines.
- The need to explore effective treatment options for methamphetamine dependence.

The impacts on law enforcement agencies were:

- A shift in the focus of Operation Mantle to methamphetamine.
- A need to further educate police about the hazards of clan labs.
- The provision of more information on how to handle people acting under the influence of methamphetamine.

10 Findings and Implications

The heroin shortage in Australia offered an opportunity to explore the impact of a marked supply reduction in a drug category on both individual drug users and on the wider drug markets. Attempting to assess and analyse these impacts on a jurisdictional level has resulted in some key findings as well as highlighting potential difficulties with attempting to assess community drug using profiles.

10.1 Key findings

A discussion of the results of each section of this report has already been presented. The key findings resulting from the investigation of the heroin shortage in South Australia are as follows:

- Heroin is being used less at the present time in South Australia, as evidenced by hospital, treatment and criminal offending data, than prior to the shortage.
- There has been a decrease in the number of fatal and non-fatal heroin overdoses.
- Methamphetamines are being used much more frequently as evidenced by qualitative information and data relating to treatment, however, hospital and crime data does not support this increase.
- The intravenous use of benzodiazepines and other opioids was recorded. The intravenous use of drugs in non-injectable forms has led to increased vascular care issues.
- Increasing mental health difficulties, psychosis and violence was reported for heroin users by qualitative feedback due to increased methamphetamine use. This was not supported by hospital data concerning drug-induced psychoses.
- No significant increase was recorded for treatment seeking for opioids when the shortage began.
- There has been a steady increase in the demand for amphetamine related treatment services and this is an area requiring on-going capacity building in South Australia.

10.2 Methodological considerations

Strong emphasis needs to be placed on the caution advised in the interpretation of any apparent trends or underlying structure within the figures for which limited data is available. Caution must be exercised in suggesting trends when data is limited in either quantity or quality. Under ideal conditions, data sets with extremely low numbers are not routinely included in indicator reports of this nature. However, given the small number of illicit drug users and the smaller drug market in South Australia in comparison to the Eastern States it was considered important to present all available data.

A number of difficulties relating to sourcing information and the validity of the data that could be obtained emerged during the development of this report. A number of these difficulties are

highlighted below:

- There is limited scope to assess/track changes in availability and purity of various drugs at smaller than annual intervals (though recent AIDR reports provide analyses on a quarterly basis).
- At the current time in South Australia there is no facility to monitor actual demand as opposed to throughput for drug-based treatment. There is no provision for the recording of requests for support/treatment that were denied or were not actioned for some time. Consequently, data concerning the number of people receiving treatment for specific issues may not accurately reflect changes in the demand for such treatment.
- Differences in drug using profiles between cultural/ethnic groups could not be examined. Responses from the Indigenous and Vietnamese communities to the heroin shortage were reported as different from those of the wider drug using population and this data was only made available through qualitative information from individuals with contacts with this group.
- Recorded crime can potentially be a weak tool with which to assess levels of drug-related offending behaviour within the community due to the range of factors impacting on this data that cannot be controlled for (e.g., changes in law codes and policing practices).

10.3 Future research directions

The investigation has highlighted a number of areas that may require further research to help expand our understanding of local drug markets including;

- An exploration of the degree to which hospital admissions and separations data, as opposed to the provision of treatment, can adequately reflect changes in community levels of drug use for methamphetamine and other stimulants.
- A feasibility study examining whether actual treatment demand as opposed to throughput could be measured.
- Whether reported increases in vascular care difficulties had been maintained and the impact this continued increase may be having on agencies and drug users.

References

- Ali, R., Jittiwutikarn, J., Hall, K., White, J., Christie, P., Bochner, F., Somogyi, A. & Gray, J. (2000). *Tincture of opium and the use of heroin in Adelaide's Vietnamese community*. (DASC Monograph No. 7 Research Series). Adelaide: Drug and Alcohol Services Council.
- Australian Bureau of Criminal Intelligence. (1997) *Australian Illicit Drug Report 1996-1997*. Canberra. Australian Bureau of Criminal Intelligence
- Australian Bureau of Criminal Intelligence. (1999) *Australian Illicit Drug Report 1997-1998*. Canberra. Australian Bureau of Criminal Intelligence
- Australian Bureau of Criminal Intelligence. (2000) *Australian Illicit Drug Report 1998-1999*. Canberra. Australian Bureau of Criminal Intelligence
- Australian Bureau of Criminal Intelligence. (2001) *Australian Illicit Drug Report 1999-2000*. Canberra. Australian Bureau of Criminal Intelligence
- Australian Bureau of Criminal Intelligence. (2002) *Australian Illicit Drug Report 2000-2001*. Canberra. Australian Bureau of Criminal Intelligence
- Australian Bureau of Statistics. (2002) *Year Book Australia*. Canberra. Australian Bureau of Statistics
- Australian Crime Commission. (2003) *Australian Illicit Drug Report 2001-2002*. Canberra. Australian Crime Commission.
- Brust, J. (1993) *Neurological Aspects of Substance Abuse*. United States of America. Butterworth-Heinemann.
- Levine, O. S., Vlahov, D. and Nelson, K. E. (1994) *Epidemiologic Reviews*, 16, 418-436.
- Longo, M., Christie, P., Ali, R., & Humeniuk, R. (2003) *South Australian Drug Trends 2002: Findings from the Illicit Drug Reporting System (IDRS)*. (Technical report No. 146). Sydney: National Drug and Alcohol Research Centre, University of New South Wales
- Longo, M., Humeniuk, R., Christie, P., & Ali, R. (2002) *South Australian Drug Trends 2001: Findings from the Illicit Drug Reporting System (IDRS)*. (Technical report No. 130). Sydney: National Drug and Alcohol Research Centre, University of New South Wales
- MacDonald, M., Crofts, N. and Kaldor, J. (1996) *Epidemiologic Reviews*, 18, 137-148.
- Sackville, R., Hackett, E. & Nies, R. (1979). *Royal Commission into the Non-Medical Use of Drugs, South Australia – Final Report*. Adelaide: South Australian Government.
- Sexually Transmitted Disease Services, Department of Human Services. (2002). *Sexually Transmitted Diseases in South Australia in 2001. Epidemiological Report No. 15*. Adelaide. Sexually Transmitted Disease Services.
- Sexually Transmitted Disease Services, Department of Human Services. (2003). *Sexually Transmitted Diseases in South Australia in 2002. Epidemiological Report No. 16*. Adelaide. Sexually Transmitted Disease Services.

- Smith G & Van de Ven P (2001) *Reflecting on Practice. Current challenges in gay and other homosexually active men's HIV education*. (Monograph 9/2001). Sydney: National Centre in HIV Social Research.
- Williams, P., White, P., Teece, M., & Kitto, R. (2001) *Problem-Oriented Policing: Operation Mantle - A Case Study*. (Trends & Issues paper No. 190). Canberra. Australian Institute of Criminology.
- Longo, M., Humeniuk, R., Christie, P., & Ali, R. (2002) *South Australian Drug Trends 2001: Findings from the Illicit Drug Reporting System (IDRS)*. (Technical report No. 130). Sydney. National Drug and Alcohol Research Centre, University of New South Wales

Appendix A: List of Key Informants

Due to obvious concerns around confidentiality the list of those Key Informants who agreed to be interviewed for this study have simply been divided into Law Enforcement and Health agency representatives and a basic descriptor of their position and agency has been provided.

Law enforcement representatives

Position	Number of KIs
Commissioned Officer, SAPOL,	1
Non Commissioned Officer, SAPOL	8
Civilian, SAPOL	2
Total	11

Health agency representatives

Position	Number of KIs
Allied Health Professional, Drug Health Service	11
Allied Health Professional, Emergency Health Service	1
General Practitioner	4
Health Professional, Community Service	1
Health Professional, Emergency Health Service	1
Informant	1
Manager, Community Service	1
Manager, Drug Health Service	1
Manager, Youth Service	1
Manager [Acting], Emergency Health Service	1
Medical Officer, Drug Health Service	2
Medical Officer, Emergency Health Service	1
Welfare Professional, Community Service	3
Total	30

For a description of the types of agencies represented by the above labels and the job titles, please refer to the main NDARC report.

Appendix B: Indicator Data

This appendix describes the procedures and definitions employed to access raw indicator data from other agencies, as opposed to data taken from published reports.

Crime data

The following offence categories were requested from SAPOL databases with the extraction being performed by the Office of Crime Statistics and Research:

- Incidents of robbery without a weapon, robbery with a weapon not a firearm, robbery with a firearm, break and enter dwelling, break and enter non-dwelling, steal from person, by premise type (to second level), by month, Jan 1997 – Dec 2002
- Incidents of robbery without a weapon, robbery with a weapon not a firearm, robbery with a firearm, break and enter dwelling, break and enter non-dwelling, motor vehicle theft, steal from motor vehicle, steal from retail store, steal from dwelling, steal from person, fraud, prostitution, weapons offences, breach AVO, drive whilst disqualified, PCA, by month, 1997 – Dec 2002
- Incidents of robbery without a weapon, robbery with a weapon not a firearm, robbery with a firearm, break and enter dwelling, break and enter non-dwelling, motor vehicle theft, steal from motor vehicle, steal from retail store, steal from dwelling, steal from person, fraud, prostitution, weapons offences, breach AVO, drive while disqualified, PCA, by SSD, by month, Jan 1997 – Dec 2002
- Incidents of resist/hinder/assault officer, by SSD, by month, Jan 1997 – Dec 2002
- Incidents of resist/hinder/assault officer, by premise type (to second level), by month, Jan 1997 – Dec 2002

Hospital data

Table B1 lists the ICD-9 codes used in the data extraction for drug related emergency department presentations.

Table B2 lists the ICD codes used in the data extraction for all of the hospital separations data. NDARC initially provided assistance with ICD-9 codes which were subsequently mapped to ICD-10 codes by representatives of the Department of Human Services. Full details of how the codes were mapped have been provided.

Table B1: ICD-9 codes used in the analysis of the Emergency Department Presentations at the Royal Adelaide Hospital

Diagnosis Related Group / ICD-9 Description	ICD-9 code
<i>Drug psychosis</i>	
Drug psychoses - drug withdrawal syndrome	292
Drug psychoses - drug-induced delusional syndrome	292.11
Drug psychoses - drug-induced hallucinosis	292.12
Drug psychoses - pathological drug intoxication	292.2
Drug psychoses - drug-induced delirium	292.81
Drug psychoses - drug-induced dementia	292.82
Drug psychoses - drug-induced amnesic syndrome	292.83
Drug psychoses - drug-induced organic affective syndrome	292.84
Drug psychoses - drug-induced other syndrome	292.89
Drug psychoses - unspecified drug-induced mental disorder	292.9
<i>Alcohol</i>	
Alcoholic psychoses - alcohol withdrawal delirium	291
Alcoholic psychoses - alcohol amnesia	291.1
Alcoholic psychoses - other alcohol dementia	291.2
Alcoholic psychoses - alcohol withdrawal hallucinosis	291.3
Alcoholic psychoses - idiosyncratic alcohol intoxication	291.4
Alcoholic psychoses - alcohol jealousy	291.5
Alcoholic psychoses - other unspecified psychoses	291.8
Alcoholic psychoses - unspecified psychoses	291.9
Alcohol dependence syndrome - acute alcoholic intoxication	303.0x (x=0-4)
Alcohol dependence syndrome – other & unspecified alcohol dependence	303.9x (x=0-4)
Non-dependent drug use disorder - alcohol use disorder	305.0x (x=0-3)
Non-specific findings on examination of blood - excessive blood level of alcohol	790.3
Toxic effect of alcohol	980
Accidental poisoning by alcoholic beverages	E860.0
<i>Heroin dependence or misuse</i>	
Drug dependence - opioid	304
Drug dependence - combinations of opioid with other drug	304.7
Non-dependent drug-use disorder - opioid	305.5x (x=0-3)
<i>Heroin overdose</i>	
Poisoning by analgesics, antipyretics, & antirheumatics - opium	965
Poisoning by analgesics, antipyretics, & antirheumatics - heroin	965.01
Accidental poisoning by analgesics, antipyretics, & antirheumatics - heroin	E850.0
<i>Methadone overdose</i>	
Poisoning by analgesics, antipyretics, & antirheumatics - methadone	965.02
Accidental poisoning by analgesics, antipyretics, & antirheumatics – methadone	E850.1

Other opioid overdose

Poisoning by analgesics, antipyretics, & antirheumatics - other (codeine, morphine, pethidine)	965.09
Accidental poisoning by analgesics, antipyretics, & antirheumatics - other opiates & related narcotics (codeine, morphine, pethidine & opium)	E850.2
Self-inflicted poisoning - analgesics, antipyretics & antirheumatics	E950.0
Poisoning, undetermined whether accidentally or purposefully inflicted - analgesics, antipyretics & antirheumatics	E980.0

Cocaine dependence or misuse

Drug dependence - cocaine	304.2
Non-dependent drug-use disorder - cocaine	305.6x (x=0-3)

Cocaine overdose

Poisoning by other central nervous system depressants & anaesthetics (cocaine)	968.5
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Amphetamine & other psychostimulant dependence or misuse

Drug dependence - amphetamine & other psychostimulant	304.4
Non-dependent drug-use disorder - amphetamine	305.7x (x=0-3)

Amphetamine & other psychostimulant overdose

Poisoning by psychotropic agents - psychostimulants (amphetamine)	969.7
Accidental poisoning by other psychotropic agents - psychostimulants (amphetamine & caffeine)	E854.2

Benzodiazepine

Drug dependence - barbituate & similarly acting sedative	304.1
Non-dependent drug use disorder - barbiturate & similarly acting sedative	305.4x (x=0-3)
poisoning by psychotropic agents - benzodiazepine-bas	969.4

Other or unspecified drug

Drug dependence - cannabis	304.3
Non-dependent drug use disorder - cannabis	305.2x (x=0-3)
Drug dependence - hallucinogen	304.5
Non-dependent drug use disorder - hallucinogen	305.3x (x=0-3)
Drug dependence NEC	304.6
Drug dependence - combinations of drugs excluding opioid	304.8
Drug dependence - unspecified	304.9
Non-dependent drug use disorder - other, mixed or unspecified	305.9x (x=0-3)
Poisoning by psychotropic agents - psychodysleptics	969.6

Table B2: Mapping from ICD-9 to ICD-10 codes for South Australian hospital separations indicator data

Diagnosis	ICD-9 code (AUS 1996)	ICD-10-AM (3rd ed) code
<i>Drug Psychosis</i>		
Drug psychoses - drug withdrawal syndrome	292	F19.3
Drug psychoses - drug-induced delusional syndrome	292.11	F19.5
Drug psychoses - drug-induced hallucinosis	292.12	F19.5
Drug psychoses - pathological drug intoxication	292.2	F19.0
Drug psychoses - drug-induced delirium	292.81	F19.0
Drug psychoses - drug-induced dementia	292.82	F19.7
Drug psychoses - drug-induced amnesic syndrome	292.83	F19.9
Drug psychoses - drug-induced organic affective syndrome	292.84	F19.5
Drug psychoses - drug-induced other syndrome	292.89	F19.8
Drug psychoses - unspecified drug-induced mental disorder	292.9	F19.9
<i>Alcohol</i>		
Alcoholic psychoses - alcohol withdrawal delirium	291	F10.4
Alcoholic psychoses - alcohol amnesia	291.1	F10.6
Alcoholic psychoses - other alcohol dementia	291.2	F10.7
Alcoholic psychoses - alcohol withdrawal hallucinosis	291.3	F10.5
Alcoholic psychoses - idiosyncratic alcohol intoxication	291.4	F10.0
Alcoholic psychoses - alcohol jealousy	291.5	F10.5
Alcoholic psychoses - other unspecified psychoses	291.8	F10.5
Alcoholic psychoses - unspecified psychoses	291.9	F10.5
Alcohol dependence syndrome - acute alcoholic intoxication	303.0x (x=0-3)	F10.0 + F10.2
Alcohol dependence syndrome - other & unspecified alcohol dependence	303.9x (x=0-3)	F10.2
Non-dependent drug use disorder - alcohol use disorder	305.0x (x=0-3)	F10.0
Non-specific findings on examination of blood - excessive blood level of alcohol	790.3	R78.0
General medical examination - examination for medicolegal reasons (blood alcohol test)	V70.4	Z04.8
Toxic effect of alcohol 980		T51.0
Accidental poisoning by alcoholic beverages	E860.0	X45+Y92.0+Y93.9, X45+Y92.7+Y93.9, X45+Y92.6+Y93.9, X45+Y92.23+Y93.39, X45+Y92.4+Y93.9, X45+Y92.29+Y93.9, X45.19+Y92.1+Y93.9, X45+Y92.8+Y93.8, X45+Y92.9+Y93.9
<i>Heroin dependence or misuse</i>		
Drug dependence - opioid	304	F11.2
Drug dependence - combinations of opioid with other drug	304.7	F11.2
Non-dependent drug-use disorder - opioid	305.5x (x=0-3)	F11.9

Heroin overdose

Poisoning by analgesics, antipyretics, & antirheumatics - opium	965	T40.0, T40.1, T40.3, T40.2, T39.0, T39.1, T39.2, T39.4, T39.8, T39.9
Poisoning by analgesics, antipyretics, & antirheumatics - heroin	965.01	T40.1
Accidental poisoning by analgesics, antipyretics, & antirheumatics - heroin	E850.0	X42+Y92.0+Y93.9, X42+Y92.6+Y93.9, X42+Y92.7+Y93.9, X42+Y92.29+Y93.8, X42+Y92.4+Y93.9, X42+Y92.3+Y93.9, X42+Y92.1+Y93.9, X42+Y92.8+Y93.9, X42+Y92.9+Y93.9

Methadone overdose

Poisoning by analgesics, antipyretics, & antirheumatics - methadone	965.02	T40.3
Accidental poisoning by analgesics, antipyretics, & antirheumatics - methadone	E850.1	X42+Y92.0+Y93.9, X42+Y92.6+Y93.9, X42+Y92.7+Y93.9, X42+Y92.29+Y93.8, X42+Y92.4+Y93.9, X42+Y92.3+Y93.9, X42+Y92.1+Y93.9, X42+Y92.8+Y93.9, X42+Y92.9+Y93.9

Other opioid overdose

Poisoning by analgesics, antipyretics, & antirheumatics - other (codeine, morphine, pethidine)	965.09	T40.1
Accidental poisoning by analgesics, antipyretics, & antirheumatics - other opiates & related narcotics (codeine, morphine, pethidine & opium)	E850.2	X42+Y92.0+Y93.9, X42+Y92.6+Y93.9, X42+Y92.7+Y93.9, X42+Y92.29+Y93.8, X42+Y92.4+Y93.9, X42+Y92.3+Y93.9, X42+Y92.1+Y93.9, X42+Y92.8+Y93.9, X42+Y92.9+Y93.9
Self-inflicted poisoning - analgesics, antipyretics & antirheumatics	E950.0	X60+Y92.0+Y93.9, X60+Y92.1+Y93.9, X60+Y92.29+Y93.9, X60+Y92.3+Y93.9, X60+Y92.4+Y93.9,

		X60+Y92.5+Y93.9, X60+Y92.6+Y93.9, X60+Y92.7+Y93.9, X60+Y92.8+Y93.9, X60+Y92.9+Y93.9
Poisoning, undetermined whether accidentally or purposefully inflicted - analgesics, antipyretics & antirheumatics	E980.0	Y10+Y92.0+Y93.9, Y10+Y92.1+Y93.9, Y10+Y92.29+Y93.9, Y10+Y92.3+Y93.9, Y10+Y92.4+Y93.9, Y10+Y92.5+Y93.9, Y10+Y92.6+Y93.9, Y10+Y92.7+Y93.9, Y10+Y92.8+Y93.9, Y10+Y92.9+Y93.9
Cocaine dependence or misuse		
Drug dependence - cocaine	304.2	F14.2
Non-dependent drug-use disorder - cocaine	305.6x (x=0-3)	F14.9
Cocaine overdose		
Poisoning by other central nervous system depressants & anaesthetics (cocaine)	968.5	T41.3
Amphetamine & other psychostimulant dependence or misuse		
Drug dependence - amphetamine & other psychostimulant	304.4	F15.2
Non-dependent drug-use disorder - amphetamine	305.7x (x=0-3)	F15.9
Amphetamine & other psychostimulant overdose		
Poisoning by psychotropic agents -psychostimulants (amphetamine)	969.7	T43.6
Accidental poisoning by other psychotropic agents - psychostimulants (amphetamine & caffeine)	E854.2	X41+Y92.0+Y93.9, X41+Y92.7+Y93.9, X41+Y92.6+Y93.9, X41+Y92.3+Y93.9, X41+Y92.4+Y93.9, X41+Y92.29+Y93.9, X41+Y92.1+Y93.9, X41+Y92.8+Y93.9, X41+Y92.9+Y93.9
Benzodiazepine		
Drug dependence - barbituate & similarly acting sedative	304.1	F13.2
Non-dependent drug use disorder - barbituate & similarly acting sedative	305.4x (x=0-3)	F13.9
Poisoning by psychotropic agents - benzodiazepine-bas	969.4	T42.4

<i>Other or unspecified drug</i>		
Drug dependence - cannabis	304.3	F12.2
Non-dependent drug use disorder - cannabis	305.2x (x=0-3)	F12.9
Drug dependence - hallucinogen	304.5	F16.2
Non-dependent drug use disorder - hallucinogen	305.3x (x=0-3)	F16.9
Drug dependence NEC	304.6	F19.2
Drug dependence - combinations of drugs excluding opioid	304.8	F19.2
Drug dependence - unspecified	304.9	F19.2
Non-dependent drug use disorder - other, mixed or unspecified	305.9x (x=0-3)	F55.9
Poisoning by psychotropic agents -psychodysleptics	969.6	T40.9
