

**How would the controlled availability of
heroin affect the illicit market in
the Australian Capital Territory?**

**An examination of the structure of
the illicit heroin market and methods
to measure changes in price, purity
and availability, including
heroin-related overdoses**

Gabriele Bammer and Ayse Sengoz

with assistance from
Aaron Stowe, Iain Anderson, Corinna Lee,
Deborah Tunnicliff and Remo Ostini

**Feasibility Research into the Controlled Availability
of Opioids Stage 2**

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EXECUTIVE SUMMARY

In order to assess the likely impact of a trial of controlled heroin availability on the illicit drug market, we conducted three studies: an examination of the structure and functioning of the ACT illicit drug market, collation and analysis of data on fatal and non-fatal overdoses and development of a new methodology for measuring changes in price, purity and availability.

The study of the structure and functioning of the ACT illicit drug market used four data sources, namely detailed interviews with seven people who had been involved in dealing drugs, interviews with two members of the ACT drug squad, a survey of ACT-based heroin users and published information. The hierarchical nature of the market was examined, as were factors potentially affecting the market, especially user demand, the link between the Canberra and (particularly) the Sydney markets, manipulation of the market by dealers, police activity and time of year. We also investigated the dynamics of the market, including reasons why people start and stop dealing, whether or not dealers specialise, the process of buying and selling, competition between dealers, violence, testing and cutting, and geographical specificity. We concluded that, although there is much about the illicit drug market which is unknown, it seems to be highly flexible and adaptable. For this reason, current systems of law enforcement are limited in their effectiveness, so that it may be worth trying new approaches such as controlled availability.

Despite the potential importance of overdoses as an adverse health consequence of heroin use, little is known about them. We examined data about both fatal and non-fatal overdoses in the ACT. While the main aim was to ascertain whether or not overdoses are a reliable indicator of the purity of illicit heroin, we also examined how the data sources could be improved and how overdoses could be more effectively prevented. Apart from examining available data about overdoses, we also followed-up three fatal overdoses which the media attributed to increased heroin purity in the ACT, analysed the records of the ACT Ambulance Service regarding non-fatal overdoses, and surveyed dependent heroin users in the ACT regarding the experience of overdosing.

Fatal overdoses are relatively rare events. The analysis of the cluster of three deaths which occurred in late 1992 suggests that without knowledge of the circumstances of fatal overdoses, the conclusions which can be drawn about the state of the illicit heroin market are limited and likely to be inaccurate.

We undertook what appears to be the first-ever analysis of data about non-fatal overdoses from the records of an ambulance service and the first survey of heroin users about the experience of overdosing. An examination of ACT Ambulance Service data from August 1990 to July 1993 showed that there was a dramatic increase in the number of overdoses in the second half of 1992 and, especially, the first half of 1993. The user survey showed that about a third of the people interviewed had experienced one or more overdoses in the last 12 months, which indicates that this is an important adverse health effect of heroin use. There were some important differences in the picture about overdoses obtained from an examination of the records of the ACT Ambulance Service and from the results of the user survey. In particular, a higher percentage of cases attended by the Ambulance Service were taken to hospital than of the cases in the survey who were attended by an ambulance. In addition, a higher proportion of cases from the Ambulance Service attributed their overdoses to a combination of heroin and other drugs than was the case for those surveyed. This may simply indicate that the group surveyed was very unrepresentative, but it also suggests that the topic of non-fatal overdoses would benefit from further investigation, particularly if such overdoses are to be used as a surrogate measure for the state of the illicit drug market.

We developed a promising method for measuring changes in the illicit drug market, which could be used to monitor the effects of a 'heroin trial' if it eventuated. This involved interviewing people at regular intervals about the price, purity and availability of a range of illicit drugs. Difficulties with the method and possible ways of overcoming them are discussed. There needs to be further research to develop reliable indicators and the implementation of a fully valid and reliable system would require a substantial commitment of resources.

We also explored the possibility of developing a less expensive system, which would use five data sources:

- a re-established and modified Drug Indicators Program, where new contacts at treatment agencies were asked about the illicit drug market,
- periodic interviews with a group of individuals who were not in treatment,

- monitoring changes in non-fatal heroin-related overdoses using data collected by the ACT Ambulance Service,
- monitoring of police data on arrests and seizures, and
- periodic interviews with trial participants about their knowledge of changes in the illicit drug market.

We conclude that at this stage there are too many unknowns about the illicit drug market and that there are potential dangers in perturbing a system which is poorly understood. Therefore, it would be prudent for an ACT-based trial, if it eventuates, to be modest in its aims and, in the first instance, to focus on the effects of controlled availability of heroin at the level of individual trial participants, rather than attempting to influence the market for illicit drugs. Indeed, a trial should be structured to have minimal impact on the illicit drug market. The most effective way to do this would be to limit participation in a trial to people currently on the methadone program, as many of them will have severed or be reducing ties with the illicit heroin market.

ACKNOWLEDGEMENTS

Mr Aaron Stowe, Mr Iain Anderson and Ms Corinna Lee conducted the interviews for the 'user survey', Aaron Stowe designed the data base and all three were responsible for data entry. Ms Deborah Tunnicliff assisted with cleaning the data and with the analysis of the results. Mr Remo Ostini collated the data on non-fatal overdoses from the ACT Ambulance Service and assisted in their analysis.

We are grateful to all the study participants for giving us insights into the illicit drug market. Those who use illicit drugs cannot, of course, be named. From the ACT Drug Squad we are particularly grateful to Detective Superintendent Ted Foster, OIC Drug Operations, and also to Sergeant Bob Peters.

Mr Howard Wren and Mr Alf Gunther from the ACT Ambulance Service gave us invaluable help in accessing their data on non-fatal overdoses. We also had assistance from Dr Rod McClure, Dr Jim Houston, Dr John Roberts and Dr Margaret Keaney in planning a study of records of non-fatal overdoses from hospital accident and emergency departments, which we were unable in the end to conduct. Ms Ursula White from the Research and Statistics Section of ACT Health provided separations data from the ACT Public Hospital Morbidity Data Collection.

Mr PR Thompson of the ACT Magistrate's Court provided the Coroner's reports of the fatal overdoses which occurred in December 1992. Ms Tarquin McPartlan from the ACT Intravenous Drug Users League and Ms Marion Watson from Assisting Drug Dependents Inc also provided valuable information about these overdoses. Dr Aileen Plant gave us insights into the background behind Coroner's reports and she and Professor Bob Douglas provided ideas for the epidemiological monitoring system for overdoses which we propose.

We are grateful to the Australian Bureau of Criminal Intelligence, especially Mr Paddy Mahony, Mr GB O'Neill and Mr GJ Weeks, for giving us a copy of Australian Drug Intelligence Assessment 1992, excerpts from the 1993 report and specific data on the ACT market. Ms Heather Strang from the Australian Institute of Criminology assisted with this.

Mr Peter Smith and Mr Dennis Pianca from the ACT Government Analytical Laboratory educated us about their work and we are grateful to them and Mr Brad Duck for the data they provided.

Ms Kass Hancock from ACTCOSS organised a meeting with ex-prisoners for us and both she and the ex-prisoners gave us valuable insights into conducting the study with prisoners which we had to abandon. Mr Michael Kelly from ACT Corrective Services was extremely helpful in assisting us make initial contact with prisoners from the ACT. Ms Wendy Loxley from the National Centre for Research into the Prevention of Drug Abuse provided us with a copy of her questionnaire and discussed her prisoners study with us.

Dr Don Weatherburn from the NSW Bureau of Crime Statistics and Research gave us valuable background information into the study on price, purity and availability, including detailed information about a related study he and colleagues are conducting.

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Ms Phyll Dance provided useful background information for the project and Ms Meherun Nisa and Ms Jodie Rickett assisted with the figures.

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The provision of information for or comments on, this project, as with all other projects which form part of the Feasibility Study, should not necessarily be seen as support for the 'heroin trial' or as endorsement of the Feasibility Study process.

We are very grateful to Jenny Braid for her assistance with the production of this working paper.

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INTRODUCTION

One of the disadvantages of the current policy of prohibition of the use of heroin and other psychoactive drugs is that it has resulted in the growth of an unregulated and highly profitable illegal market for these substances (see review by Rainforth, 1991). The lack of regulation means that buyers cannot be sure of the dose of drug they are purchasing, nor can they be sure of the substances with which the drug is mixed. The consequences are predominantly manifested as health problems among users – overdoses and ‘dirty hits’¹. The main adverse consequences of the highly profitable nature of the illicit drug market are encouragement of crime and corruption. The illicit nature of the heroin market also makes it difficult to monitor the magnitude of these effects.

Advocates of illicit drug policy reform usually expound its potential benefits both for improving the health of users and for reducing crime and corruption (see review by Rainforth, 1991). Introducing controlled availability of heroin is often seen as one mechanism for bringing about such change.

Thus in this paper we explore the possible effects of a trial of controlled availability of heroin on the illicit market for that drug in the Australian Capital Territory (ACT). In order to do this we wanted to find out as much as possible about Canberra’s² illicit heroin market, both to predict what the effects of a trial on the market might be and to find ways to monitor those effects if a trial was to eventuate.

We had very limited resources with which to conduct this study, hence we were not able to follow-through on all of the ideas we had, nor were we able to fully develop any of our lines of investigation. The limitations of the work we did conduct are outlined as part of discussing the results of that work. There were two studies we were not able to follow-through on. One was a study of dealers in prison, building on the methodology of Loxley and co workers (Loxley, 1993). After extensive discussions with a local prisoners group and ACT Corrective Services we eventually had to abandon the idea for logistic reasons. First there is no prison in the ACT and those convicted for drug-related offences are scattered in prisons throughout New South Wales (NSW)³. Arranging the visits would have been complicated⁴ and conducting them would have been both expensive and time consuming. Second, the number of people incarcerated for offences related to drug dealing in the ACT is relatively small⁵. We therefore had concerns about protecting the confidentiality and hence the safety⁶ of those prepared to talk to us. The second study we were unable to undertake was an investigation of overdoses using hospital records. Data on overdoses is not systematically or routinely collated and, because fewer overdoses are seen by hospitals than by the ambulance service, we concentrated on gathering data from the latter.

The report which follows is divided into three sections: (1) an analysis of the structure of the ACT drug market, (2) an examination of the use of data on overdoses to monitor changes in the illicit heroin market and (3) the development of a methodology to measure changes in price, purity and availability of illicit heroin.

This study is one of three approaches taken in the feasibility study to improve understanding of the potential effects on the illicit drug market of a trial of controlled heroin availability. We also organised a workshop about drug markets research, an account of which is presented in Bammer (1993). In addition, Butler and Neil (1994) examined some economic aspects of the illicit heroin market and how they might be affected by a trial of controlled availability.

1 In the Australian context, it is not clear to what extent ‘dirty hits’ result from contaminants in the drug, rather than from the use of unclean spoons, water etc. It is generally thought that the latter are more important.

2 Canberra is the main population centre in the ACT, hence the two terms are used interchangeably.

3 The ACT is a land-locked excision within NSW. With travel time each prison visit would have taken at least a full day and, with our meagre resources, the time expended would have been disproportionate to the outcomes achieved.

4 Permissions would need to be gained from NSW Corrective Services and the governors of each prison.

5 The Department of Corrective Services identified eleven prisoners and wrote to them on our behalf (without revealing their names to us). Four indicated a willingness to be interviewed; they were located in three different prisons in NSW.

6 Discussions with ex-prisoners indicated that we could not be certain of the reliability of the information we would be given and that some prisoners might simply be interested in knowing what our questions would be so that they would know what other prisoners might tell us. The security of those who did participate might then be threatened. Loxley (personal communication, 1994) reported that these concerns were not borne out in her study.

As the analysis which follows shows, we have decided in the first instance that, if a trial eventuates, a cautious approach should be taken with regard to effects of a trial on the illicit heroin market. At this stage there are too many unknowns and there are potential dangers in perturbing a system which is poorly understood. Given the profitability of the illicit heroin market, the chances of retaliation against a trial which attempts to disrupt this market are high. As Butler and Neil (1994) discuss, the retaliation might be economic such as increasing the purity of illicit supplies or it might be through mechanisms designed to undermine a trial. Alternatively, those involved in supplying heroin might diversify either into other illicit drugs or into other illegal activities. Until we know whether or not controlled availability 'works' in improving outcomes for dependent users, it seems desirable to try to minimise effects which cannot be predicted or controlled, of which effects on the illicit drug market are the most striking example.

We conclude that one way to minimise effects on the illicit market would be to restrict trial participants to those whose ties with the illicit market are already severed or weakening. Conducting a trial with people currently on the methadone program would be one way of doing this.

INSIGHTS INTO THE STRUCTURE AND FUNCTIONING OF THE ACT ILLEGAL DRUG MARKET, ESPECIALLY THE HEROIN MARKET

Background

In order to predict the effects of a trial of controlled availability of heroin on the ACT illicit drug market, we need to understand this market. Such understanding is also necessary if there is to be measurement of the effects on the market if a trial eventuates. However because the selling of illegal drugs is subject to severe legal and social sanctions, it is difficult to obtain detailed information about the functioning of the market.

We used four sources for our insights. The body of this section is built on two of them, namely in-depth interviews about the structure of the market with seven people who have been involved in dealing heroin and with two members of the ACT Drug Squad. We were able to supplement some of this information with results from a study of three groups of ACT-based heroin users. Published information was the final source, particularly analyses produced by the Australian Bureau of Criminal Intelligence (1993) and the results of a study of the Sydney drug market (Dobinson and Poletti, 1989).

We did not draw on results of research conducted on drug markets overseas. As Dobinson and Poletti (1989) have pointed out *“there would appear to be little if any transferability of the results from studies carried out in the US and Great Britain to the local situation”* (p 11). Wardlaw (1978) also urges caution when drawing on overseas studies for Australian policy decisions⁷.

While this study gives us some information about the ACT illegal drug market from the point of view of dealers who are or have been dependent users, we have no information either from people involved in the market who do not use illicit drugs (non-user dealers) or from people who are non-dependent users.

Accepted wisdom is that the non-user dealers control the market or at least control the availability of drugs. In the ACT context, we have very little information about this group.

With regard to non-dependent users, many believe that this group makes up the bulk of heroin consumers, with non-dependent users outnumbering dependent users by somewhere between 3 to 1 and 10 to 1⁸. However it is not clear how much of the market share for illicit heroin they consume. It is also not clear if the dynamics of the market for non-dependent users are significantly different from those described here.

This study has concentrated on the heroin market and only touched on the interplay between the markets for heroin and those for other drugs. It is not clear how separate these markets in fact are. For Australia as a whole, the Australian Bureau of Criminal Intelligence (1993) reports that

“In the past major groups, particularly among importers and primary distributors, did concentrate on a particular drug for a variety of reasons, such as their long established associations with suppliers from a similar background overseas. But in recent years this pattern has begun to change. In 1992 there were further signs that some of these groups were branching out into different drug types, and that several of the ethnically based crime groups were cooperating more with groups from different backgrounds. Homogeneity is still a prominent feature of the upper levels of drug trafficking, but the field is no longer so segregated” (p. 9).

Despite all of these caveats, this study is a starting point for gaining an understanding of the heroin market in the ACT.

⁷ Nevertheless, the concepts developed in overseas research have most probably shaped the way the Australian market is described by researchers, the police and by those involved in it. These concepts may not always be the most appropriate for describing the Australian situation and may lead to distortions in understanding. More information about the Australian drug market is needed to determine if such distortions have, in fact, occurred.

⁸ This ratio seems to be based on one study conducted in the United Kingdom by Hartnoll and colleagues (1985). In our ‘user survey’ we asked how many dependent and non-dependent users participants knew. The ratio was one to one. Reuter (personal communication, 1994) suggests that the ratio is very sensitive to the stage of the ‘epidemic’ of heroin use and that it is currently much lower than suggested by Hartnoll and colleagues.

Information sources

Most of the information in this report was collected from seven interviewees who had been involved in dealing heroin within the last five years (see Appendix A for the interview schedule). None were currently dealing, although some said they occasionally bought for friends⁹. The length of time they were involved in dealing ranged from a few months for two of the interviewees, to a couple of years for three others, to over 10 years for two. One of these last two people had not dealt in the ACT, but had been a high level dealer in another city. Only one other interviewee had dealt outside the ACT¹⁰. For some of the participants, the level of activity while dealing was not constant, that is they might have stopped, increased or decreased levels of dealing or changed the drugs they dealt.

The interviewees were six men and one woman, ranging in age from 28 to 48, with a mean of 33 years. Their educational levels ranged from Intermediate Certificate (year 10) to postgraduate, and occupational status from unemployed to professional. Paid employment and government benefits were reported to be equally important as the primary sources of income in the last six months; one person also reported illegal sources. All but one were Caucasian and reported usually living in Canberra. Three were married or in a defacto relationship, one was separated, and three never married. Five were in treatment at time of interview.

The other primary source of information was interviews covering similar topics with two members of the ACT Drug Squad.

The information from these two sets of interviews was supplemented with results from a more general survey of three groups of ACT-based heroin users: 14 dependent users who had never been in treatment, eight dependent users who had dropped out of treatment within the last two years and 65 people on the methadone program. This is referred to throughout as the 'user survey'. The results reported here are generally for considerably less than 87 respondents. The main reason for this is because the questions were not relevant for many of the people on the methadone program as they were no longer using heroin. There were also some missing data. Demographic and other information about these respondents will be published in a forthcoming working paper.

We compare our results with those of the Dobinson and Poletti study of Sydney user/dealers (1989). They used the 'storefront methodology' originally pioneered in New York (Preble and Casey, 1969). In other words they occupied a building in the centre of one of Sydney's main drug using areas (Kings Cross), which facilitated recruitment and interviewing. One hundred and twenty-nine individual participants and seven couples who both bought and sold heroin on at least three days per week were interviewed about their buying and selling activities in the previous seven days.

Structure of the heroin market

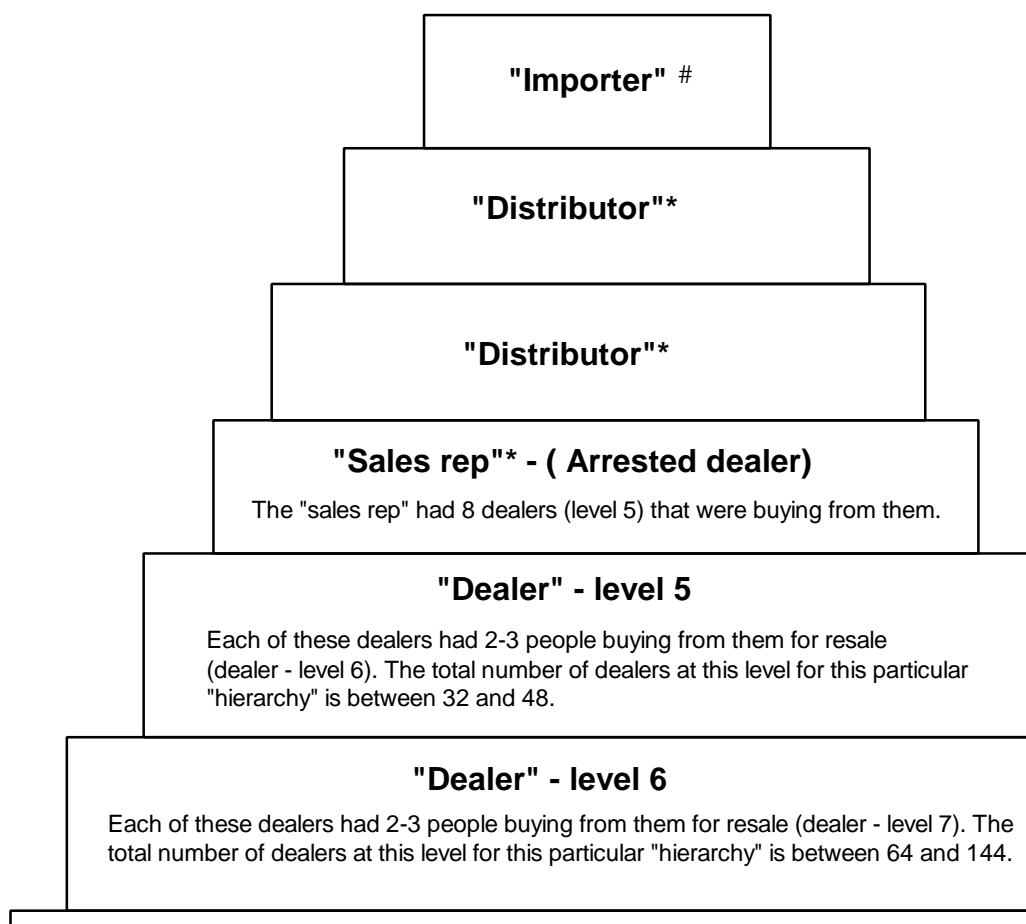
It is accepted wisdom that drug markets are hierarchical pyramids. This was also the view of most of our interviewees¹¹, although most of them had no direct knowledge about the top area of the pyramid. We gained little information about the extent to which people within the upper levels of the market operated as private entrepreneurs or as members of organised groups. Dobinson and Poletti (1989) reported that as well as organised networks of distribution, there are many instances of importation and subsequent selling undertaken by individuals acting alone. It is generally thought that these instances are one-off or opportunistic.

Figure 1. An example of a hierarchical pyramid

⁹ They did not consider buying for friends to be dealing.

¹⁰ This person had also dealt in the ACT.

¹¹ When one interviewee read the draft report they objected to the concept of hierarchy, with its attendant image as "very dark, shadowy and menacing in nature and capable of co-ordinated amoral action in order to achieve its ends". Instead their experience was that "a loose form of network exists. Each part of the network operates independently making decisions based on its own interests. The parts of the network can and do change regularly both in personnel and role played. Any part of the network operates on an opportunistic piecemeal basis buying from one or more sources (and changing sources as contacts and quality varies) and sells on in a similar fashion. Over time there is little constancy in the role of any given part. Most of all there is no overall controlling mechanism (as is suggested in the hierarchy model) and cohesive, integrated action is only available to a limited extent as it is confined by the perceived interests of each part of the network."



There are no data available on the "Importer".

* *There are no data available on the Level 2 and 3 "Distributors" or the numbers of distributors at these levels and "sales reps" at level 4.*

One of our interviewees reported that he had been a high level user-dealer with connections to a "syndicate". However the others reported no association with organised groups. Three participants reported dealing alone and the rest shared the dealing responsibilities with either their sexual partner or friends.

The drug squad provided us with an example of the network around a dealer they had arrested. They referred to that dealer as one of the "sales reps" of an organised group. He was bringing in about 100 grams every couple of days and making two to three trips to Sydney per week. The network is diagrammatically represented in Figure 1. The picture of the bottom levels of the hierarchy presented in this figure is more rigid than our interviews with dealers would suggest.

This example may no longer be current. The Australian Bureau of Criminal Intelligence (1993) reported that Australia as a whole seemed to have undergone some changes in 1992.

"These included a reduction in the levels in the distribution chain, new participants and relationships formed between higher level suppliers and lower level dealers, accompanied by a rise in competition and distrust, sometimes leading to violence" (p. 22).

The sorts of numbers involved in Canberra as suggested by one of the interviewees are more consistent with this picture:

- 15 high level dealers
- 200 middle level dealers
- 1,000 dependent heroin users

5,000–10,000 non-dependent users.

This interviewee also described the market in terms of “retail” and “wholesale” levels.

Many of our interviewees described the pyramid in terms of the quantities which were dealt. Their level of knowledge tended to be at the ounce level or below. The hierarchy here is:

ounce (equivalent to 28 grams¹²)

half-ounce (equivalent to 14 grams)

five weight bag (equivalent to five grams)

weight (also called a gram)

half-weight (also called a half gram)

basic deal (also called a packet or deal; a deal sells for about one-quarter of the price of a half-weight)

This is similar to the description given by Dobinson and Poletti (1989) of the hierarchical pyramid in Sydney. They reported that it consisted of kilo level importers; wholesalers who sold ounces; ounce dealers who sold quantities between 5 grams and ounces; user/dealers who sold quantities ranging from deals to weights; small time user/dealers who sold deals; and users. The first three levels were very likely to be non-users. This does not exactly tally with the results of our study where the higher level dealer was a dependent user, but Dobinson and Poletti also did not rule this possibility out. They reported that dealers at the wholesale level are thought to be members of major Australian criminal syndicates and ounce level dealers could be too.

We asked interviewees to tell us about the “Mr Bigs”. The drug squad interviewees describe the importers as the “Mr Bigs”; they are business men who are completely distanced from the distribution, they do not use drugs and are involved purely for monetary gain. One of the other interviewees described them as follows:

“Never been in jail, has connections all the way down the political line, has connections through the church, has connections through every possible safeguard and avenue that he can use to pump his goods”.

A few of the interviewees described the “Mr Bigs” of Canberra as “*ethnic businessmen*” who have “*connections through family ... back home ... or wherever supplies are available, so they use those standard connections to create a distribution network...*”. They rely on family loyalty for security. These dealers are thought to be part of an organisation and have someone above them in that organisation. This is consistent with information reported by the Australian Bureau of Criminal Intelligence (1993, see quotation above) and similar to the picture presented for Sydney by Dobinson and Poletti (1989). Both the drug squad and other interviewees reported that in the Canberra context they are the people who deal in kilos and ounces and provide a supply line. The supply line is the link between individual dealers at each of the levels in Figure 1 and the end level user. One interviewee described their supply line as “*a particular line of people*” or a “*particular system ... there is lots of different systems*”.

At the lower levels, a person’s place in the hierarchy is by no means rigid. The levels at which a person operates can change over time. For example, someone who sells to friends occasionally can become a higher level dealer who has contact with suppliers and later move to just setting up deals for others. At each level the price, purity and availability of drugs will change for that person. At any one time a person may also operate at more than one level. For example, while some dealers usually sell ounces or grams, they may also have some customers to whom they sell \$50 deals.

In the ‘user survey’, respondents were asked to identify statements which adequately described them in the last month. They could identify more than one statement. As can be seen from Table 1, taking a “commission” either through arranging deals or buying for others also seems to be an important component of the functioning of the heroin market. This was also reported by Dobinson and Poletti (1989).

Table 1 Respondents identifying statements which adequately described them in the last month (n=45)

%

12

There are regional and individual differences in terminology. ‘Gram’ can be either a metric weight or a generic term.

I got a profit through dealing heroin over and above what I needed for my own use	9
I arranged deals of heroin for others (but didn't actually buy) and took a "commission"	27
I bought heroin for myself and others & took a "commission", enough to meet part of or all of my own using needs	33
I bought heroin for myself & for others with no "commission"	42
I only bought heroin for my own use	58

Factors which affect the heroin market

We asked about whether or not the following factors affected price, purity and availability: user demand, the link between the Canberra and (particularly) the Sydney markets, manipulation of the market by dealers, police activity and time of year.

User demand

The market was reported to be characterised by a "heavy demand and a limited supply"¹³. Thus users were reported to have little power to influence the market. Instead heroin use was described as being fairly opportunistic, with users buying what was immediately available rather than shopping around for better quality;

"...people just seem to use whatever is available ... because you have got the money, because it is there and you know that you will do this now rather than something later because this now is a definite goer, that something later is only a possibility..."

The link between Canberra and other markets

Canberra does not seem to be an entry point for heroin into Australia (Australian Bureau of Criminal Intelligence, 1993), therefore the link with markets in other major cities is important¹⁴. If "things are very dry up in the Sydney end ... it is really tight down here in Canberra".

The level at which import into Canberra occurs seems to affect heroin's price, purity and availability. Two of our interviewees reported that towards the end of 1992 "bigger suppliers in Sydney and Melbourne" were "shipping supplies direct". This ties in with information from the drug squad interviewees suggesting that a particular ethnic group was bringing drugs into Canberra. They suggested that this made it possible for some people higher in the hierarchy to avoid travelling to Sydney to get their supplies and also that it gave those in the know at lower levels another source of supply. In addition they and another interviewee reported an increase in purity and availability, so that at the end user level a standard \$50 or \$100 buy was better value. However the passing on of savings made by dealers to end users was not always automatic. A number of interviewees made the point that those buying from dealers with a big "habit" or buying heroin which had passed through several hands would generally receive smaller deals or heroin of lower quality.

Data gathered in the user survey also provide information about the links between the Canberra and other markets. Results were available for 38 people who had bought heroin in the last six months. Fifty-three percent usually bought heroin in only one place and the rest in two or more places. Ninety-two percent usually bought heroin in the ACT, 13% in Queanbeyan¹⁵, 29% in Sydney, 5% in other areas in New South Wales, 13%

13 Because of this, respondents reported the concept of the drug *pusher* to be laughable as there was no need to actively recruit new users.

14 The two closest major cities are Sydney and Melbourne. Sydney is three to four hours from Canberra by car and Melbourne about eight hours.

15 Queanbeyan is a small town in NSW which is geographically adjacent to Canberra and which in many ways functions as a suburb of Canberra.

in Melbourne and 5% in other states¹⁶. Thus it can be seen that while most people buy in the city in which they are located, many also buy heroin in other places.

Market manipulation by dealers

The majority of the interviewees reported that they did not know enough about high level dealers to do more than speculate about their ability to manipulate the market. One said that the market was characterised by a “*dog eat dog*” attitude rather than “*cartels who get together and price fix*”. In addition, this interviewee suggested that the fine balance required by dealers is likely to preclude any manipulation of the market. A level of regularity and predictability was said to be required to be able to maintain high level dealing, that is “*not to like hold it back, not to screw around with the market, because when it gets unpredictable like that, that’s when people start going off and you know it gets a bit out of control...*”. Dealers need to juggle the need for regularity and predictability against the danger of being too visible as that “*really leaves you open to getting busted*”. Our interviewee who had operated at a fairly high level said: “*of course there is people that hold out and up the price and things like that, but they don’t generally last very long*”.

That person also reported that the market was occasionally deliberately flooded with heroin to get rid of stocks or to encourage recreational illicit drug users to either try heroin or increase their use. The drug squad also reported that they understood this to happen. They also thought that flooding was used to get users to increase their habits and to lure customers away from other dealers. Other respondents said this did not match their experience and it is difficult to reconcile the concept of market flooding with the predominant view of the heroin market being characterised by a high demand and limited supply. A number of respondents recognised that from time to time someone who was not a regular dealer would find themselves with a large amount of heroin which they would want to get rid of quickly, but this was seen to be different from flooding.

Police activity

A major effect on price, purity and availability was reported to result from dealers being “*busted*”, that is, “*first and foremost is people getting busted*”. Some dealers saw being busted every six to 12 months as part of “*the regular cycle of business*”. Others saw it as harassment and it could lead to older established dealers stopping their activities. The impact on the market of dealers being busted was reported to depend on their level of dealing, the number of dealers busted, how many users they were selling to, whether or not their customers were selling to others and whether or not the customers had other regular sources for heroin. For example, if a number of dealers were busted the market “*suddenly tightens up and the quality goes down*”. End users might either experience difficulties in “*how easy it is to get on*” or be “*cut out*” till things “*settled down*”. Whatever the case the impact would only last until the customers could organise new contacts.

It is interesting to note here that the results from the user survey indicate that most people have more than one contact for buying heroin. Of the 38 people for whom data were available, most (26% in each group) reported that they had two or three sources of supply if they were to buy heroin now. Sixteen percent had four sources and 24% reported five or more (the maximum was 20). Only two people (5%) had only one source of supply and one did not know.

Dobinson and Poletti (1989) reported that 61% of participants in their study of the Sydney market had had only one supplier in the previous seven days, that this person was perceived to be a full-time dealer and that more than half of this group had been dealing with their main supplier for six months or more. The questions asked in this study were not comparable to those in our study, but illustrate a different way of conceiving the issue. The difference in results suggests that higher level user/dealers (such as those in the Sydney study) might have more limited access to suppliers and might therefore be more affected by police action than lower level user/dealers (such as those in our user study).

The drug squad interviewees and the interviewee who had dealt at a high level also indicated that if a major dealer or “*distributor*” was busted or stopped dealing for a while “*for [their] own protection*” then either the dealer or “*the syndicate*” they belonged to would organise for someone else to take care of business, so that there would be little or no disruption to availability. Other interviewees also reported that when they were stopping their dealing activities they would ensure that their customers were looked after, for example, by introducing them to other dealers.

¹⁶

Only one of these people had been resident in Canberra/Queanbeyan for less than six months and they reported that they usually bought heroin in Sydney.

Thus some interviewees held the view that the police control or “manage” the market by monitoring and regulating known dealers’ activities. The implication is that police are more likely to move against dealers who increase their activity. For example, one interviewee said “*there is some people who have been obviously dealing for years and years and it has just got out of hand. It was just too much trouble for them [the police] ... so when somebody new came into the drug squad something was done about that person*”. Similarly “*if anyone really cut loose the police will go and bust them*”.

It was also recognised that from time to time police did go “*on the war-path*”, for example after a spate of overdoses. This generally resulted in dealers who considered themselves to be at risk of being targeted to be “*very careful*” or to “*stop operation for a few months or weeks or whatever*” or “*cut back the customers to a hard core who may be buying every day*” .

Overall, while police activity is a major factor affecting availability, it is not seen to be a major deterrent to either dealing or using. Police surveillance was thought to be inevitable and the chance of being busted had to be taken.

Seasonal factors

Seasonal factors were not generally thought to be an important influence on the price, purity and availability of heroin. However, some of our interviewees reported a decrease in availability around Christmas, possibly due to dealers visiting family interstate or going away for a holiday.

Dynamics of the drug market

The interviewees who had sold heroin represented a number of different levels in dealing. Four had bought at the level of half grams and grams. Two had bought quantities that ranged from quarter to full ounce. One had been a higher level dealer.

In the following section dealers’ modes of operation are described. We begin with reasons why people start and stop dealing, whether or not dealers specialise, the process of buying and selling, competition between dealers, violence, testing and cutting, and geographical specificity. There are many commonalities between the different levels of dealing thus we do not differentiate between them except to highlight differences.

Starting and stopping

The interviewees commonly reported that they started dealing in order to support their own habit; non-dependent users could raise enough money to purchase drugs through legitimate sources, dependent users could not. One interviewee said “*the easiest way to support my growing habit was ... to deal*”, and another “*it was just so I would have dope and a little bit of that sort of glory*”. For many starting dealing is best encapsulated in the words of one interviewee “*in order to raise the amount of money you need to use you have either got to steal or deal, basically these are your two options*”. For some, dealing was a continuation of occasionally buying drugs for friends.

Most people needed to be introduced to a supplier in order to obtain a regular source of drugs. While no-one we interviewed reported difficulty in finding a supplier originally, when they became dealers they reported reluctance in helping others get started: “*you are not going to introduce them to a supplier because you will be cutting your own throat*”. In order to get started, one interviewee watched known dealers carefully, identified their supplier and then approached this supplier. Of the three people we interviewed who operated at the quarter ounce level or above, all reported being approached by suppliers. This was not reported by any of the other respondents. Dobinson and Poletti (1989) reported that 5% of their respondents started dealing after being approached by their main supplier; half of their respondents got started in dealing by being introduced to their main supplier by friends or other customers; 8% approached their main supplier.

Many of the interviewees stopped dealing when their source of supply ran out. They either did not or could not make a new contact. In order to find a new supplier “*you have to find somebody ... who was doing what you were doing and try to get an introduction to the person they’re dealing with and it’s not easy to do*”. In most cases there was also some other reason for stopping dealing, for example, because their own use was out of control (“*becoming too greedy*”). This was often referred to as a “*dealer’s habit*” and as well as being expensive could have negative effects on their health and life generally.

From the information we received, the picture about starting and stopping dealing is not entirely clear, but it suggests that new (and hence presumably lower level) dealers have less trouble finding a supplier than

established (and hence presumably higher level) dealers, who need a new contact to supply large amounts regularly.

Specialisation

As outlined earlier, the Australian Bureau of Criminal Intelligence (1993) report indicates that the heroin market may be becoming less separate from the market for other drugs at the upper levels. This also seems to be the case at lower levels. More than half of the interviewees involved in dealing sold drugs other than heroin, including amphetamines, cannabis and 'trips'¹⁷. One of the interviewees primarily sold amphetamines and sold heroin only occasionally.

Information about the intermingling of the markets for different illicit drugs was also obtained from the user survey. Participants in that study were asked which drugs they had sold in the last month. Thirteen had sold heroin. Of these, half had sold heroin only, three had sold heroin and cannabis, three had sold heroin plus a range of other drugs and for one data on other drugs sold were missing. Thus about half of the people who sold heroin also sold other drugs¹⁸.

These results are different from those reported by Dobinson and Poletti (1989). Fifty-seven percent of the respondents' main suppliers in that study did not sell drugs other than heroin and for 12% it was not known whether or not they did. The most common other drugs sold were cocaine (16%) and cannabis (12%). For the respondents themselves, only 13% had sold drugs other than heroin in the last seven days. The difference between the two studies may reflect the change reported by the Australian Bureau of Criminal Intelligence (1993), as data for the Dobinson and Poletti study was collected in 1987 and that in our studies in 1993. The scale and regularity of selling may also be important factors; for example one drug may be sold regularly and others opportunistically. This needs further investigation.

Buying and selling

Apart from the interviewee at the higher level, those involved in selling drugs reported seeing between six and 20 customers daily, and between 20 and 70 others who would come weekly or less frequently. Of the six people in the user survey who had only sold heroin in the last month, four had sold to two people, one to three and one to ten. Apart from this last person, they sold heroin less than once a week. The other person sold heroin more than once a week, but less than once a day. This reinforces earlier conclusions that the people in the user survey were generally operating at a lower level than the main interviewees for this study.

In Dobinson and Poletti's study (1989), on average each respondent had 14 customers and less than 15% reported more than 20 customers in the last week. Customers were described as acquaintances (88%), friends (65%) and strangers (41%). Thus in the last week, just under half had sold drugs to someone they did not know.

Our main interviewees reported tighter controls on who they sold to. The only way a user who was unknown could buy from them was if an introduction was given by a close and trusted friend. Even then if the person looked suspicious the dealer might choose never to sell to them again. Therefore someone new to the Canberra drug community would need introductions to make any contacts with dealers. This would also affect other aspects of setting up a deal. Only people who were well known and trusted could ask for credit or be allowed to come to the home of the dealer.

Deals were reported to be set up in a variety of ways. Most began with telephone contact between the seller and buyer, in which there were no direct references to drugs but the form the discussion took was clearly understandable to those who participated. One interviewee described the arrangement as "*you would ring up and there would be a pre-arranged place or something like that and they [the dealer] would go out and do the drop ... keep it away from the house*". Another interviewee allowed only a couple of good friends to come to their home; otherwise deals were made on the street near home or in a flat set up for that sole purpose. Interviewees were subject to similar arrangements when they bought drugs from their suppliers. Some would go to the home of the suppliers, others would organise to meet in a busy public place, and still others (usually at higher levels) would have elaborate arrangements for the transfer of drugs for cash which meant that buyer and seller did not meet.

The other alternative for buying and selling drugs was described as follows:

17 'Trips' are hallucinogens.

18 Another 13 participants had sold cannabis only and another two had sold either cannabis and amphetamines or cannabis and benzodiazepines. Thus, some dependent heroin users did not sell heroin but sold other drugs instead.

“in any city you can go ... somewhere and find a street person hanging off and ask if they can score for you; I mean you are going to get more than likely ripped off in any situation like that. “

There are a number of known locations throughout Canberra where dealers and buyers who do not have established networks can make casual contact and some also use these venues for regular contacts. One interviewee reported that “*serious users*” would not go to such locations because they were public, because only small quantities would be available and because the purity would be low. Dealers who did not have established customers might also phone a few people to tell them they were “*holding*”.

The results from the user survey were consistent with this picture. The most common way of making contact was to telephone the dealer and then either to visit the dealer’s house or to meet in a pre-arranged place. Very occasionally the dealer would phone the buyer and occasionally the dealer would deliver to the buyer’s house¹⁹.

For a small group the main pattern of purchasing was to go to a place where it was known that a dealer would be at certain times. Some people used both methods of contact to a greater or lesser extent.

About one-third of the participants in the user study usually bought heroin on their own and for themselves only. Around half bought heroin with one or two other people, usually a sexual partner and/or a close friend. The rest bought heroin as part of a bigger group. The composition of the group tended to be fluid and people would pool money to make up the amount required to score. There was also a system of credit and payback so that not everyone would have to contribute money every time. In this situation one person used the pooled money to buy heroin for the whole group.

Two people in the user survey operated at a higher level. One predominantly bought heroin in another capital city for their own use and for resale. Another received heroin for their own use as commission for acting as a go-between for a larger supplier and a small number of people who purchased large amounts (for both their own use and resale).

The results from the study of the Sydney heroin market by Dobinson and Poletti (1989) were also consistent with those found here and provide additional information. A range of precautions was used to avoid detection when dealing with suppliers, the most important being to talk in code, to look out for suspicious cars and people, to conduct the exchange in private and to conduct the exchange at a prearranged location and time. Dealers selling to someone new were careful to check their bona fides (track marks, common acquaintances etc). Other precautions respondents commonly took when selling were to exchange in private and to ‘stash’ heroin deals in a safe place, only getting what was needed after an agreement to buy and sell had been reached²⁰. Respondents varied as to whether or not they would sell drugs at their place of residence.

Some of the main interviewees for this study reported that they arranged their purchases in ways they thought would protect them from being charged with trafficking if they were caught. Those dealing in half grams or grams would make a few small buys through the day: “*we would score say a \$200 packet so we don’t cross the 2 gram boundary at any point ... so there is obviously going to be no greater amounts of supply in bulk or cash*”. Those dealing with quantities greater than two grams used other methods to protect themselves. They believed that “*it’s not a good idea to cut up a lot of deals, if you are going to get busted it’s better to be caught with a few grams in one bag than a few grams made up into ... 100 deals*”. However one interviewee believed that would not be an adequate defence : “*it’s fairly obvious that you supply – ‘yes well sorry, your Honour, I bought 15 grams of this stuff all at once,’ – you know, they are not going to stomach that*”.

A number of participants complained about being subjected to “*power trips*” when they bought drugs, in that they were made to wait or told to come back in a couple of hours, when they knew the dealer had drugs. If they had a choice, at least some would go to a dealer who did not behave in this way, even if the quality of their drugs was low:

19 A small number of study participants did not make direct contact with dealers but received their drugs either from a sexual partner, a friend or, in one case, a senior partner in crime.

20 The use of a place to stash deals was not mentioned by any of our Canberra interviewees; they were also not specifically asked about this.

“there are a number of people I see at the moment but I go and see this guy not particularly because his dope is fabulous because it’s not, but he’s always there and he never fucks me up, and he’s nice”.

This issue was not mentioned in the Dobinson and Poletti study (1989). The qualities their respondents reported looking for in a supplier were price, quality and a reliable supply.

Implicit in the above discussion is that trust is a complex issue which underlies buying and selling. On the one hand users reported a “dog eat dog” attitude: “a lot of people who were trustworthy in other ways aren’t trustworthy when it comes to dope”. On the other hand the market would not work without trust. For example on the issue of credit one interviewee believed that “the reason credit worked so successfully is that the heroin users need a regular supply ... and if you don’t pay back your credit you have lost your line of supply and that’s worth a lot more to you than \$50 was”. We asked people specifically if they had been “ripped off” but were only given few instances where this had happened. Rip-offs by someone supplying them or ripping others off seemed to occur mostly when a person was not known or if the dealer needed money more than goodwill; if the latter happened the dealer may “fix it up” the next time.

Dobinson and Poletti’s (1989) respondents also reported that being ripped off was rare and that credit was usually repaid on the same day. They also reported that being given free heroin as a “favour” by family or friends was common and this was also reported in response to some open-ended questions in our user study.

Competition between dealers

A majority of the interviewees believed that competition between dealers was limited to known locations throughout Canberra where dealers and buyers who do not have established networks can make casual contact: “generally people say ‘don’t buy from so and so, my deals are much better, I just got some new stuff’”.

The higher level dealer indicated that there was co-operation rather than competition between syndicates: “there is enough room for everybody to move and there is enough money for everybody to make”.

Violence

The drug squad interviewees said that violence in drug dealing was taken to be a part of the ‘scene’. One dealer interviewee reported being beaten up outside a dealer’s house for money or drugs. This interviewee also threatened others with guns. Other interviewees said threats were most common; actual violence was “relatively uncommon, it’s more an undercurrent of threats and things, but they are rarely carried out ... some people bash a few people up and then other people will be less likely to bash them”. The higher level dealer was subject to two armed hold-ups, including one when he had an elaborate security system. From time to time this person was aware of murders within the syndicate, although the reasons for them were rarely known. At those times the interviewee would hire a body-guard. This interviewee had also witnessed a number of violent drug-related incidents and had used guns to threaten others.

The view that threats rather than actual violence were most important at the lower levels of the market was supported by the results of the user survey. Participants were asked about drug-related violence they had been involved in in the last six months. The most violent incidents were related to drugs other than heroin. Violence, either actual or threatened, was reported in a few incidents where there was an allegation of a rip-off of money or heroin. The actual violence was usually a punch. There were also two reports of threats by people who wanted heroin against people they mistakenly thought had it. One respondent was threatened when he was accused of taking over someone else’s customers. Most drug-related violence was domestic and is not reported on here.

Overall, while violence may be memorable, it does not seem to be very common. Dobinson and Poletti (1989) did not report on violence.

Testing and cutting

The interviewees reported that non-user dealers at the higher levels would ascertain purity of supplies by employing someone to “taste”²¹ or by chemical tests, before cutting. At lower levels, testing drug quality was always done simply by having a “taste” and then it would be decided how to cut the heroin. For example, one

²¹ ‘Tasting’ in this context means injecting a quantity of drug, small enough to be unlikely to lead to an overdose. The oral taste of heroin can also be a guide to its purity; the taste of heroin is bitter and, as it is usually cut with one or more of a range of sugars in Australia, sweetness suggests low purity.

interviewee said it “*was just trial and error, you just get a little bit in the spoon and go ‘fuck that’s strong, that really needs to be cut quite a lot’*”.

Those at higher levels reported using gun powder weights to measure out weight and half weight quantities. Smaller amounts would be divided by sight, that is portions were divided up according to what looked reasonable for a \$50 deal or \$100 deal. Once a supply line was established, testing was often considered unnecessary as variations were not expected. However, users also vary in the risks they are prepared to take and some are more cautious than others. In response to an open-ended question in the user survey, one respondent told us that the person with the highest tolerance in a group often injected first and advised the other members of the group whether they should use all or just part of their share. The police thought that unexpected and untested for variations were an important explanation for overdoses.

Two-thirds of respondents in Dobinson and Poletti’s study (1989) did not cut heroin in the last seven days. The usual reason was that it had already been cut enough and for them to further cut it would make it difficult to sell the heroin and to maintain their customers. Heroin was cut when it was perceived to be strong enough to allow it without affecting sales and when it was too strong and might increase the risk of overdoses.

Geographic specificity

The police believe there is no geographic specificity in the ACT. Rather the market could be called the Canberra/Queanbeyan market. They said that, for example, a dealer who lived in Queanbeyan could go out in the morning to pick up from his supplier in Manuka, then go back to Queanbeyan to cut it and prepare some deals, then drive to Narrabundah, Higgins and Ainslie to drop off or meet people. Other interviewees also reported that since it is easy to travel from one end of town to the other in Canberra and immediate surrounds, and since the using community know each other (at least by sight) there is no need for separate markets to develop as has occurred in Sydney²².

Some interviewees reported confining their buying and selling to areas in the Inner North/Civic²³ and areas close to their homes (if they did not live in the Inner North/Civic). This seemed to be a matter of convenience rather than indicating separate markets.

The results from the user survey are consistent with the view of a unified market which has some areas of concentration. Eight people who usually sold heroin reported on where people they sold to came from. Three people sold only to people in one location, the Inner North/Civic, and this is where two of those people also lived. Two people sold to customers from all over Canberra and Queanbeyan and the rest sold to people from two or three of the major areas.

Conclusions

Overall this study has shown that the ACT illicit drug market is complex and only partially understood²⁴. In particular, little is known about non-user dealers or about non-dependent users. At the level of the user/dealer little is known about the ‘natural history’ of dealing, such as the transition from selling to a few people once a week to selling to 20 people daily. However, this study has shown that there seem to be well-established and effective systems of operation and that people can easily move in and out of dealing. This flexibility and adaptability makes law enforcement difficult and, without draconian measures which would severely restrict civil liberties, the drug market cannot be stamped out.

This supports those who argue that other ways of decreasing the drug market, for example through controlled availability, might be worth trying. The particular implications of a trial of controlled availability are discussed in the final conclusions to this paper.

²² The Australian Bureau of Criminal Intelligence advises that according to police investigations, there appear to be several separate heroin markets in the Sydney area. Two of the main retail markets are in Kings Cross (central) and Cabramatta (western suburbs), but there are others, less prominent, such as Bondi and Mt Druitt.

²³ In our questionnaires we divided Canberra/Queanbeyan into six areas: Belconnen, Inner North and Civic, Inner South, Weston and Woden, Tuggeranong, and Queanbeyan.

²⁴ Loxley (personal communication, 1994) in commenting on an earlier draft of this report noted that many of the findings reported here are similar to those of her study of the Perth drug market.

OVERDOSE DATA: ARE THEY USEFUL FOR MONITORING CHANGES IN THE ILLICIT HEROIN MARKET?

Background

One of the main dangers associated with the use of heroin is its ability to depress respiration. It is difficulties with or stopping breathing which are classed as an 'overdose' (Jaffe, 1970). Heroin has a relatively low safety margin, in other words, there is no great difference between the dose which fatally depresses respiration and that which produces the psychological and physiological effects sought by users. The dose of heroin which will lead to an overdose depends on the tolerance of the user; compared with novices or irregular users, people who have been using heroin regularly for an extended period of time will be able to take much higher doses of heroin with no ill effects. Because of the illegality of heroin, there is no quality control over the heroin which is sold and users have no assurance about the dose they are buying. Thus, if the purity of illicit heroin increases, the risk of overdose also increases.

Overdoses can also occur when a person's tolerance is reduced (for example if they stop using for some days or longer), if that person does not correspondingly reduce the amount injected. Another common reason for overdoses is when people use heroin in conjunction with other drugs which depress respiration; alcohol is a classic example. A dose of heroin which would be safe on its own can then become lethal.

Despite the potential importance of overdoses as an adverse health consequence of heroin use, little is known about them²⁵. There is little information about the prevalence of overdoses, of the relative importance of different causes or of how people respond to overdoses. In this section we examine data about both fatal and non-fatal overdoses in the ACT. While the main aim was to ascertain whether or not overdoses are a reliable indicator of the purity of illicit heroin, we also examine how the data sources could be improved and how overdoses could be more effectively prevented.

Apart from examining available data about overdoses, we also:

- followed-up three fatal overdoses which the media attributed to increased heroin purity in the ACT,
- analysed the records of the ACT Ambulance Service regarding non-fatal overdoses, and
- surveyed dependent heroin users in the ACT regarding the experience of overdosing.

Fatal Overdoses

There is a small amount of published data about fatal overdoses. In its statistics about "drug abuse" in Australia, the Department of Health Housing and Community Services (1992) reports that in 1990 (the latest figures available²⁶), 72 people died from "accidental poisoning" with opioids and 45 died from opioid "poisoning, cause uncertain"²⁷. We obtained a further breakdown of the figures for accidental poisoning from the Australian Bureau of Statistics. For the years 1988–1991 (the latest figures available) there were three deaths in the ACT, one in each of the years 1988, 1989 and 1991. All were men, one was in the age range 25–29, one 30–34 and one 40–44. Nationally, the total number of people who died from accidental poisoning with opioids in each of those years was 74, 51, 72 and 50, respectively.

These data indicate that heroin related overdoses are not a major cause of death. Nevertheless it is still worth examining if these deaths could be prevented. The data give us little information about the reasons for

²⁵ A number of studies of overdoses are now underway. Australian studies are being conducted by Darke and colleagues at the National Drug and Alcohol Research Centre in Sydney and as part of the multi-centre "Australian Study of HIV and Injecting Drug Use" by Wodak, Crofts, Loxley, Gaughwin and Dolan.

²⁶ Figures released as this report was being finalised for 1991 and 1992 show that 50 people died from "accidental poisoning" in 1991 and 86 in 1992 (National Drug Strategy, 1994). Unfortunately there are no figures available for 1993, which is the time period of most interest here. There was also a substantial increase in the number of people treated by the ACT methadone program in 1992 and 1993; subsequently methadone has been implicated in a small number of deaths (always in combination with other respiratory depressants; Smith, personal communication, 1994).

²⁷ Darke (personal communication, 1994) suggests, from his examination of coronial records, that many of the 254 opioid-related deaths attributed to "drug dependence" in the statistics of the Department of Health Housing and Community Services (1992) may also be due to overdose.

these fatal overdoses and hence little indication of more effective prevention strategies. Concern about overdoses tends to increase when there are clusters of deaths. Such a cluster occurred during the course of this study and as well as examining the causes for these overdoses, we examined the flow of information about them.

Examination of a cluster of overdoses in the ACT

In the Christmas 1992–New Year 1993 period, three fatal overdoses occurred within days of each other, on December 26, 29 and 31. The Coroner's inquisition was held on March 2, 1993 and found that only one of these deaths was linked to heroin alone. This person had a blood morphine (and conjugated metabolite) level²⁸ which was considered to be toxic and a blood alcohol level in the normal range²⁹. The second person was found to have died from "blood poisoning caused by the accidental ingestion of morphine/heroin with possible synergistic effect of ethanol...". In other words this person had high levels of both heroin metabolites and alcohol in their blood and the death can be attributed to the combination of drugs, although the heroin dose alone might have been fatal. The third person "probably died from the synergistic effects caused by a combination of therapeutic concentrations of methadone and another respiratory depressant such as diazepam and metabolites". In other words this person probably died from a combination of methadone and benzodiazepines (tranquillisers), neither of which alone would have been fatal. Thus heroin was only implicated in two of the three deaths and in one of them it is not clear if the dose of heroin alone was fatal or if death occurred because of the effects of heroin and alcohol used together. The Coroner's reports did not contain any information about the circumstances of the deaths or about the normal levels of use of the deceased. Thus they shed no light on whether the deceased had taken higher than normal doses or if higher than expected purity might have been a factor.

Not only is there a time delay between the occurrence of a death and the Coroner's inquisition, but the Coroner's report also does not fully explain the circumstances of a death. Hence action to prevent further overdoses immediately after a death or cluster of deaths has to be taken on incomplete information. We found it instructive to analyse the flow of information which occurred after the cluster of deaths described above.

News of the deaths was made public by a police press release issued on January 1. In part the press release stated "While investigators are still awaiting analysis results to establish the exact contents of the drug which may have been responsible for the deaths. They are very concerned that the deaths could have been as a result of contaminated or concentrated heroin" (sic). The release ended with a request for drug users who thought they might have used or been sold contaminated heroin to contact police.

The following day, the local press (*The Canberra Times*) ran a story which reflected the press release reasonably accurately although the causes of death were even more firmly linked to choice only between highly concentrated or contaminated heroin with no other possibilities mentioned. The story appearing in the national newspaper (*The Australian*) was more embellished. There the deaths were linked to a batch of concentrated or contaminated heroin which could be circulating throughout the country. The police were said to believe that "all three died as a result of taking heroin from the same batch" and quoted as saying "It doesn't appear that the people overdosed going on reports from witnesses, but that they were injected with a toxic impurity or heroin that was stronger than what they would normally have used". By January 6, *The Australian* was reporting that the police were linking deaths in Melbourne, Canberra and Newcastle to "[d]eadly batches of highly concentrated or contaminated heroin"³⁰. *The Canberra Times* was more circumspect, reporting that laboratory tests might help determine if deaths in Canberra and Melbourne were linked, but that police did not believe that the deaths were related. Radio news reports on the same day followed similar lines. News on FM104.7 in Canberra was tentative about links between the Canberra and Melbourne deaths, whereas national news on 2CN (ABC radio) linked the deaths in Canberra, Newcastle and Melbourne.

On Friday January 8, *The Australian* ran a feature on the Canberra deaths entitled "Shoot to Kill" which was subtitled on the front page with "Playing Russian roulette with heroin". It elaborated on its previous story, with more

28 After ingestion, heroin is first metabolised into morphine and then further broken down to other chemicals.

29 Their blood alcohol level was 21 mg/100ml; the normal range is up to 25 mg/100ml with toxic effects occurring between 100 and 200 mg/ml.

30 In order to establish whether or not there was in fact a link, a first step would be to ascertain if the rate of deaths was higher than normal. Information in the media attributed to an officer in the Melbourne Ambulance Service suggests that this was the case in that city at least.

details about the people who had died and an interview with a Melbourne ambulance officer about recent deaths and non-fatal overdoses in that city.

By January 10th, a Sydney newspaper (*Telegraph Mirror*) was linking five deaths in that city to those in Canberra, Newcastle and Melbourne and attributing them to highly potent 'rock heroin'.

On January 18, the radio 2CN news reported that police were still investigating whether contaminated or concentrated heroin was being distributed. The last report about these overdoses seems to have appeared in *The Canberra Times* on January 23. Police were reported to be warning that "*High grade heroin believed responsible for a spate of recent overdoses in the ACT, NSW and Melbourne might be available across the country*". A NSW police spokesman was quoted as saying "*It is more likely than not due to a series of bumper crops in the opium producing parts of the world in the last three or four years. Consequently there is a surplus and the heroin is not being diluted and passing through as many hands as it used to.*"

We compared this perception in the media with perceptions among illicit heroin users by contacting eight of the people who were participating in our study to develop a methodology to measure changes in price, purity and availability over time (see next section), six of whom also participated in the study of the structure of the illicit market in the ACT (see previous section). We made the first attempt to contact these people on January 4 and successfully reached four of them. Two had only just returned to Canberra after having been away for a few weeks. Neither of the other two knew the people involved, but neither thought the overdoses would have been caused by highly concentrated heroin or toxic impurities, so-called "*killer dope*". One thought that the people who had died were probably "*partying too hard*" and had consequently not been careful and used more than they were accustomed to. The other said that heroin of higher than usual quality had been around for some time. That person had used on Christmas day and confirmed that the heroin available was "*good stuff*". They also suggested that if a user was desperate for their next fix, they might become careless ("*slack*").

One of the people who had been out of town made some enquires on our behalf. We talked to that person again on January 5 and the view seemed to be that these people had been "*greedy*" and binged. That person also gave us some details about two of the overdoses. The person who had died from methadone and benzodiazepines according to the Coroner's report, was said to have died from a combination of alcohol, heroin and benzodiazepines according to information from our interviewee. The details about the second person were incorrect and on January 8 the interviewee contacted us again to tell us this. Because they had been ferreting for information for us and not waiting to hear it through their normal channels, they had spoken to someone they did not know very well and had been told about an overdose which had occurred some time earlier. On January 5 we were also able to contact one of our other interviewees who knew one of the people who died. Their contacts had told them that this person had knowingly used twice as much heroin as normal. This was the person who, according to the Coroner's report, had died from ingesting heroin only.

The other person who had been out of town also discussed the overdoses with friends and on January 8 reported that it seemed just as likely that the three people who had died had bought from three different dealers as from the same one. That person also told us that when dealers heard that clients had overdosed they were likely to cut their heroin to prevent further overdoses.

By January 18 another of our interviewees whom we had not been able to contact previously reported that although they did not know any of the people who had died, they had heard that one had died from pills and that heroin had not been involved and that the others had been bingeing.

On January 4, we also contacted the ACT Intravenous Drug Users League (ACTIV), a lobby, support and information group for injecting drug users. They reported that users "*would be jumping up and down now*" if the heroin available was of exceptionally high purity or contaminated, and because this was not happening doubted the press reports. On January 6, ACTIV issued a press release, headed "*No easy answer to junkie deaths*". Although the release asked for people who had information about concentrated or contaminated heroin to contact ACTIV, the press release also stated that "*The recent overdoses could be caused by many circumstances. It could be that people are buying concentrated or contaminated heroin or it may be that over the Christmas – New Year period people are simply overdoing things, taking too much heroin or mixing it with other depressants like alcohol.*". On January 7 the contact at ACTIV also told us that the person who had died from methadone and benzodiazepines according to the Coroner's report, had died from a combination of alcohol, heroin and rohypnol (a benzodiazepine). They thought that police were

deliberately using the overdoses to “*get heavy*” with users and dealers. On January 13 the League issued a poster warning people not to use alone, so that if they overdosed someone could get help for them³¹.

The information flow within the user community is particularly interesting, although our conclusions need to be treated with caution because we interviewed only a small number of people. The overall and early impression in the user community, that the deaths were unlikely to have resulted from a batch of highly concentrated or contaminated heroin, seems to have been correct. However, the accuracy of the information concerning the individual cases was mixed. No-one seemed to have any close familiarity with one of the cases. We obtained accurate information about one of the other deaths on January 5 from a person who knew the deceased. We were given information about the other death which was inconsistent with the Coroner’s eventual findings and it was not until January 18 that we heard that one death had not been related to heroin at all.

Some sections of the media seem to have sensationalised the story and may have painted an inaccurate picture of the workings of the illicit heroin market. The connections between the deaths in different cities suggest some high-up central distribution point in the illicit market, which is inconsistent with information we obtained about the structure of the heroin market (see previous section).

The role of the police in publicising these deaths is an interesting one, as many of the media reports claim to have relied on information from the police. We, of course, have no way of knowing how accurately the media reflected what they were told by the police. In an interview with the drug squad on January 11, we were told that the media “*was taking a fair bit of journalistic licence*”, especially in linking the overdoses in different cities. In their view there was no connection and this was published in one newspaper report. We had previously contacted the ACT Drug Squad on January 4 and were told that as a matter of routine, whenever two or three deaths occur together, police send out a press release to warn users of possible dangers. This is a public health measure which should be applauded, especially at present when it is the only viable early warning system.

The police also seem to use such occasions for furthering their intelligence gathering. There was an emphasis in their press release in requesting information about the state of the market. Both the ACT IV League (see above) and some of our interviewees from the user community reported that the police were “*hassling*” people who might have information about the deaths.

Conclusions

With regard to using fatal overdoses as a way of monitoring changes in the illicit heroin market, two conclusions can be drawn. The first is that fatal overdoses are relatively rare events and would only be likely to measure large and sudden changes. The analysis of the cluster of three deaths which occurred in late-1992 suggests that without knowledge of the circumstances of fatal overdoses, the conclusions which can be drawn about the state of the illicit heroin market are limited and likely to be inaccurate³².

The accuracy may be improved by combining information about fatal overdoses with that about non-fatal overdoses.

Non-fatal overdoses

While there is a small amount of information about fatal overdoses, there is no publicly available data about non-fatal overdoses. It would be of interest to know, for example, the proportion of fatal to non-fatal overdoses. We investigated non-fatal overdoses in two ways; first by examining the records of the ACT Ambulance Service and second by including questions about overdoses in our user survey. This does not seem to have been done before in Australia and we are also not aware of overseas studies.

Analysis of the records of the ACT Ambulance Service regarding non-fatal overdoses

31 In the user survey, we asked respondents who they usually used with. Eight (23%) reported that they usually used alone, 23 (66%) that they usually used with others and four (11%) reported that they used alone about half the time and with others about half the time.

32 Fugelstad (1994) followed up six deaths which occurred in Stockholm in autumn 1993 which were attributed to “a very potent brand of heroin and dangerous drugs from the former Sovjet (sic) Union”. Again a closer examination of the deaths found that this was unlikely to be the explanation. Five deaths were likely to have been caused because the people had misjudged the dose; one was using for the first time and the other four had been drug-free for some time before injecting the fatal dose. Alcohol may have been implicated in two of the deaths.

We were interested to see if the records of the ACT ambulance service would be useful for monitoring changes in non-fatal overdoses over time and if these changes were an indicator of changes in purity and/or availability.

Methods

The report sheets completed by ambulance officers for each case attended from August 1990 to July 1993 were the raw data for this study. Those sheets which indicated that naloxone³³ had been administered to the patient were selected for closer examination. The comments recorded by the attending officers³⁴ were then used to divide cases into three categories: those where heroin was likely to be involved in the overdose, those where heroin was unlikely to be involved in the overdose and those where heroin might have been involved in the overdose, but the evidence was equivocal. While the record sheets are a valuable source of information, not all records had the same level of detail, so that it was easier to draw conclusions from some record sheets than from others.³⁵

- Cases where heroin was likely to be involved in the overdose (n = 36).

Patients were assigned to this group if one or more of the following were noted: patient reported heroin use; other people on the scene stated that the patient had used heroin; evidence of fresh needle marks; needle and/or heroin present at the scene; the person was a known heroin user; clear reaction to naloxone. An example of the information which would be available in the case notes is:

Bystanders stated that patient took heroin OD. On arrival patient lying on floor and friend giving mouth to mouth. Patient unconscious, nil response, heart rate present, pupils pinpoint, needle marks in left arm. Patient woke after second dose of naloxone and declined offer to go to hospital. Left in care of friends. (Edited to ensure anonymity.)

These cases were further divided into three groups: those where heroin and other drugs had been used, those where heroin only had been used and those where this could not be determined.

- Cases where heroin was unlikely to be involved in the overdose (n = 74).

Patients were assigned to this group if one or more of the following were noted: patient description or known cause of the episode (usually an overdose of some drug other than heroin); evidence of drugs used; lack of physical evidence of heroin use, ie. no needles, needle marks or heroin in the proximity; presence of a suicide note, empty packets of drugs (other than heroin), reports of recent history of severe depression or testimony of others on the scene as to cause of episode. An example of the information available in the case notes is:

Patient supine on bed. Wife states her husband was very emotionally distressed last afternoon and today. Found unconscious as described. Had taken unknown quantity of oxycodone and temazepam. (Edited to ensure anonymity.)

- Cases where the cause could not be determined (n = 35).

Patients were assigned to this group if there was insufficient evidence to make a designation to either of the first two groups, or if there was an inconsistent picture, eg. a patient denying heroin use but responding clearly to naloxone. An example of the case notes for such a patient is:

Male patient sitting slumped in lounge chair. Non-responsive, pinpoint pupils, no needle marks seen, no sign of recent trauma. Defacto said patient had arrived home after drinking and collapsed; also that patient has been taking valium. Patient woke after naloxone. Patient and defacto state patient has not been using heroin tonight. Patient refused transport to hospital. (Edited to ensure anonymity.)

Results and Discussion

33 Naloxone (trade name Narcan) is an opioid antagonist, in other words it reverses the effects of opioids. It can reverse breathing difficulties caused by heroin. Because naloxone is a relatively safe drug, it is routinely administered in cases of suspected drug overdose.

34 These comments were recorded in the "History", "Specific Observations" and "Comments" sections of the record sheets. In some cases information recorded on other parts of the record sheet was used to assist in the categorisation of cases: the age of the patient, the location of treatment and the outcome of treatment (specifically, the patient's reaction to naloxone administration).

35 It is also likely that an ambulance officer or someone with medical training would have been able to categorise more of the people for whom evidence was equivocal. We intend to do further analysis of this data with such assistance at a later stage.

Figure 2 shows the number of people given naloxone in each month from August 1990 to July 1993. Figure 3 shows the likely and possible heroin-related overdoses for these months. Regardless of which group is considered, it can be seen that there was a dramatic increase in the number of overdoses in the second half of 1992 and, especially, the first half of 1993³⁶.

³⁶ The most dramatic increase is in the group where the overdose was likely to have been related to heroin and there is only a small increase in the group where heroin was unlikely to be involved in the overdose. This suggests that the increase is related to heroin, rather than some factor underlying overdoses in general.

Figure 2. The number of people treated with naloxone by the ACT Ambulance Service from August 1990 to July 1993.

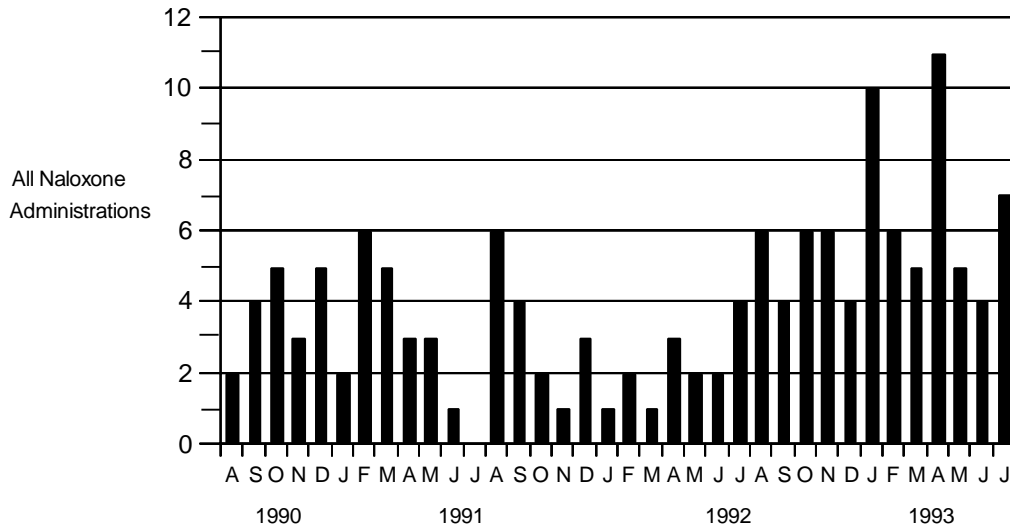
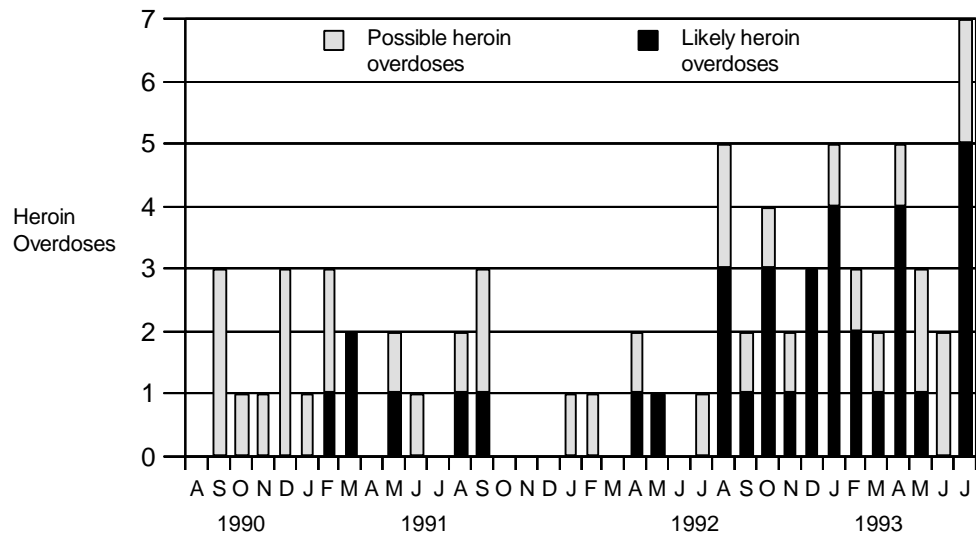


Figure 3. The number of overdoses which were likely to be heroin related and those which might have been heroin related from August 1990 to July 1993



In Table 2 some demographic characteristics of the likely and possible heroin-related overdose cases are presented. It can be seen that the two groups are rather different. Around three-quarters of the likely heroin overdose cases were male, just over half of the possible heroin overdoses were male. The age distribution of the two groups was also different.

In addition, two-thirds of the likely heroin overdose cases took place indoors; this was 58% for the possible heroin overdoses (Table 2). The likely heroin overdose cases were evenly split between those who were taken to hospital and those treated on site. Almost all the possible heroin overdose cases were taken to hospital. This last finding means that there is potential to follow-up the possible heroin overdose cases using hospital records in order to categorise them more definitely.

For the likely heroin overdoses, there was only enough data in half the cases to suggest if the overdose had been caused by heroin used alone or heroin used in combination with other drugs. While increased heroin purity could also be involved when the overdoses were caused by heroin used in combination with other drugs,

overdoses caused by heroin alone are likely to be the better surrogate measure for changes in purity of illicit heroin.

Table 2. Some characteristics of the overdose cases and occurrences (%)

	LIKELY HEROIN OVERDOSE	POSSIBLE HEROIN OVERDOSE
Sex	n=35	n=35
male	77	54
female	23	46
Age	n=27	n=35
16–20	15	29
21–25	30	14
26–30	19	29
31–35	19	6
36–40	11	6
41–45	7	3
46–50	0	9
50+	0	6
Overdose occurred	n=33	n=31
indoors	67	58
outside	33	42
Outcome	n=36	n=35
taken to hospital	47	97
treated on site	53	3
Overdose caused by	n=36	-
heroin only	25	-
heroin plus other drugs	22	-
unsure	53	-

Overall, data collected by the ACT Ambulance Service (and probably other ambulance services) on non-fatal overdoses is an under-utilised and useful source of information. As it stands now it can show changes in non-fatal overdoses over time and can be used to indicate possible changes in the purity of illicit heroin. The data could be made more useful if the following occurred:

a. About half of the patients given naloxone were unlikely to have had heroin related overdoses. The other half were evenly divided between people who were likely heroin overdoses and people for whom the data were equivocal. It would be desirable if this last group could be more accurately categorised. This might be able to be done by having the data assessed by someone more experienced (such as an ambulance officer or medical

practitioner), by following up these cases using their hospital admission records³⁷ or possibly by getting attending ambulance officers to systematically record a specific set of details.

b. For half of the people whose overdoses were most likely related to heroin, it was not possible to ascertain if they had used heroin only or heroin in combination with other drugs. The first is likely to be a better indicator of changes in heroin purity than the second. It might be possible to get attending ambulance officers to systematically ask and record whether or not other drugs had been used and in what amounts. Ideally a separate study would be conducted to verify the accuracy of this kind of information gathering, perhaps including the collection of blood for analysis³⁸.

Results of a survey of dependent heroin users in the ACT regarding the experience of overdosing

As well as examining official data sources for information about overdoses, we also asked a number of questions about non-fatal overdoses experienced by participants in the survey we conducted of three groups of users.

Methods

As outlined in the previous section we interviewed people in the following three groups of ACT-based heroin users: 14 dependent users who had never been in treatment, 8 dependent users who had dropped out of treatment within the last two years and 65 people on the methadone program. Demographic and other information about these respondents will be published in a forthcoming working paper.

The specific questions asked about overdoses were:

- In the last year how many times have you lost consciousness and/or had breathing difficulties related to the use of:

1. heroin – not in combination with other drugs
2. heroin in combination with other drugs (specify)
3. total number of occasions.

- Of these times (in the last year) how many resulted in:

1. an ambulance being called
2. being taken by ambulance to Accident and Emergency (casualty)
3. being taken by friends to Accident and Emergency (casualty)
4. friends helping you in some other way
5. What happened the other times (specify)?

- When these problems occurred (in the last year) were they caused by:

1. better than normal heroin purity
2. using more heroin than usual
3. heroin cut with impurities
4. using heroin with a mixture of drugs (specify)
5. other (specify)

Results and Discussion

Twenty-six people (33% of the sample; there were 8 missing cases) reported overdosing in the last year. Between them they reported 77 overdoses. The median number of overdoses reported was 2 with a range from 1 to 20.

Of these 77 overdoses three-quarters were attributed to heroin only and one-quarter to heroin used in combination with other drugs. The combinations of drugs to which overdoses were attributed were heroin plus alcohol (7 cases), heroin plus speed (1 case) and heroin plus cannabis (1 case). Two people reported that their overdoses were caused by heroin plus alcohol and “pills” (rohypnol in one case, unspecified benzodiazepines in the other) and one person reported three overdoses caused by either heroin and alcohol or heroin and “pills” (unspecified). There were five missing cases. On more detailed questioning 86 reasons were given for 76

³⁷ There are obvious ethical and privacy considerations here.

³⁸ See previous footnote; it would be particularly problematic if it reduced the likelihood that an ambulance would be called for.

overdoses, with the reasons for one overdose reported as unknown. Forty-five percent of the reasons were “*better than normal heroin purity*”; 27% “*using more heroin than usual*”; 5% “*heroin cut with impurities*”; 21% “*using heroin with a mixture of drugs*”; and 2% “*other*”. Of these “others” one overdose was attributed to the person feeling “really weak” and the other to uncertainty about quality because the heroin had been bought by a different person.

For the 77 overdoses an ambulance was called to a total of 14% with 3% being taken by ambulance to the Accident and Emergency Department of a hospital; none resulted in being taken to hospital by friends, but in 69% of cases friends helped in some other way; 17% had other outcomes. In most of these cases the person “came to” by themselves.

The picture given in this survey is rather different from that obtained in the analysis of the data from the ACT Ambulance Service. In the survey only two of the eleven (18%) incidents to which an ambulance was called resulted in the person being taken to hospital. The data for likely heroin overdoses from the Ambulance Service show that 47% were taken to hospital. In addition, while the Ambulance Service data could only allow causation to be attributed in half the cases, these were evenly divided between those caused by heroin alone and those caused by heroin in combination with other drugs. In the survey reported here, three-quarters of overdoses were attributed to heroin alone.

Although the number of people reporting overdoses is small, examining the overdoses in the light of demographic and other variables points to some interesting areas for further research. A higher proportion of women reported overdoses than men (42% of women and 26% of men; $n=33$, 5 missing cases for women and $n=46$, 3 missing cases for men; this difference was not however statistically significant). Of the 77 overdoses reported, 70% were reported by women and 30% by men; thus women who reported overdoses had on average 3.9 overdoses (median = 2.5, range 1–20) and men had 1.9 (median = 1.5, range 1–6). Of the 14 women who reported overdoses, 79% attributed them to heroin alone, 7% to heroin in combination with other drugs and 14% to both reasons. The results for the twelve men who reported overdoses were quite different: 33% attributed them to heroin alone, 58% to heroin in combination with other drugs and 8% to both reasons. (The numbers are too small however to allow the statistical significance of the differences to be calculated.) The results are similar if calculated by overdose rather than person. Of the 54 overdoses reported by women, 89% were caused by heroin alone and 11% by heroin in combination with other drugs. Of the 23 overdoses reported by men, 43% were caused by heroin only and 57% by heroin in combination with other drugs. The difference is statistically significant (chi-squared = 15.54, $df=1$, $p<0.001$).

A higher proportion of younger people reported overdoses than older people (Table 3; comparing those aged less than 25 with those aged 25 or older, chi-squared = 11.8, $df = 1$, $p<0.001$). Of the 77 overdoses reported, 73% were reported by those aged less than 25 and 27% by those aged 25 or older; thus the younger group who reported overdoses had on average 4.0 overdoses (median = 2.5, range 1–20) and the older group had 1.8 (median = 1.5, range 1–4). Of the 14 people aged less than 25 who reported overdoses, 57% attributed them to heroin alone, 21% to heroin in combination with other drugs and 21% to both reasons. The results for the 12 people aged 25 or older who reported overdoses were a little different: 58% attributed them to

heroin alone, 42% to heroin in combination with other drugs and none to both reasons. (The numbers are too small to allow the statistical significance of the differences to be calculated.) The results are similar if calculated by overdose rather than person. Of the 56 overdoses reported by those aged less than 25, 79% were caused by heroin alone and 21% by heroin in combination with other drugs. Of the 21 overdoses reported by those aged 25 or older, 67% were caused by heroin only and 33% by heroin in combination with other drugs. This difference was not statistically significant.

Table 3. Relationship between age and overdoses in last 12 months

	Age (years)					
	<20	20–24	25–29	30–34	35–39	40+

% of sample (n=79)	9	22	28	28	9	5
% of people who overdosed (n=26)	19	35	19	27	0	0

The highest proportion of people reporting overdoses was in the group who had never been in treatment (50%) and the lowest in people on methadone (28%; 8 missing cases). Of the group who had dropped out of treatment in the last two years 38% reported overdosing. (The numbers are too small to allow the statistical significance of the differences to be calculated.) Of the 77 overdoses reported, 48% were reported by people who had never been in treatment, with an average of 5.3 overdoses per person (median 2, range 1–20). Forty-four percent of overdoses were reported by people on the methadone program; this is an average of 2.1 overdoses per reporting person (median 1, range 1–6). Eight percent of overdoses were reported by people who had dropped out of treatment in the last two years, with an average of 2.0 overdoses per person (median 2, range 1–3). For the people who had never been in treatment, 95% of overdoses were attributed to heroin only and only 5% to a combination of heroin and other drugs. The attribution was more evenly split for the other two groups (59%/41% for people on methadone and 50%/50% for the drop-out group; the numbers are too small to allow the statistical significance of the differences to be calculated).

For the people on methadone, the low proportion of overdoses can at least partly be attributed to the high percentage of this group who no longer used heroin. Of the people in the methadone group who reported using heroin last week (n=27), 38% reported overdosing in the last year (this is calculated on n=26 as information about overdosing was missing for one case). For the 16 people on methadone who reported overdosing in the last 12 months, data for the length of time they had been on methadone was available for 12. Eleven (92%) had been on methadone for less than 12 months and it is not known if the overdoses occurred before or after the person went on the methadone program. There are clearly a number of interesting factors here for further exploration.

Conclusions

About a third of the people in our sample had experienced one or more overdoses in the last 12 months, which indicates that this is an important adverse health effect of heroin use. It is also a health effect about which little is understood. Just under half of the overdoses reported were attributed to better than normal heroin purity, which indicates that non-fatal overdoses may be a useful surrogate measure for changes in illicit heroin purity.

There are some important differences in the picture about overdoses obtained from an examination of the records of the ACT Ambulance Service and from the results of this survey. In particular a higher percentage of cases attended by the Ambulance Service were taken to hospital than of the cases in the survey who were attended by an ambulance. In addition a higher proportion of cases from the Ambulance Service attributed their overdoses to a combination of heroin and other drugs than was the case for those surveyed. This may simply indicate that the group surveyed was very unrepresentative. Nevertheless it would be worth conducting further work in which permission was obtained to link survey data with the records of the ACT Ambulance Service (and possibly ambulance services in other states). This would give valuable information about the validity of survey data, the adequacy of the sort of analysis conducted here of Ambulance Service data and the representativeness of samples obtained through “snowball” and volunteer (in the case of methadone clients) techniques.

These data also point to other issues which should be addressed in research into overdoses. For example, our research suggests that the causes of overdoses for women are different from those for men. These results need to be replicated and, if they hold up, the reasons should be explored so that effective prevention measures can be worked out. The results also suggest that younger users (aged less than 25) are more likely to overdose than older users; this is likely to be a consequence of their relative inexperience in drug use. Again an understanding of the precise circumstances in which overdoses occur may allow effective prevention measures to be designed. It would also be valuable to determine if people change their behaviours after experiencing an overdose and in what way. It is also important to ascertain more about the experience of overdosing for people on the methadone program. In our survey many of the people on the methadone program who reported heroin-related overdoses in the last 12 months had been on the program for less than 12 months and it is not clear

whether they experienced the overdoses before or after they went on the methadone program. The role of methadone in overdoses also needs to be explored.

Overall conclusions

The results on overdoses reported here are tantalising rather than definitive. They point to questions which need further exploration. Because overdoses can be caused by a number of factors – including use of heroin in combination with other depressant drugs, buying heroin from a different dealer, not adjusting for reduced tolerance – the relationship between overdoses and the purity of illicit heroin is not a simple one. More research is needed to establish how useful a guide changes in overdoses are to fluctuations in purity in the illicit market.

It is possible that the ACT population is too small for this relationship to be properly explored. In other words, relationships which might be seen in larger populations are obscured by chance fluctuations in the ACT population. For example, in comments on an earlier draft of this report, the Australian Bureau of Criminal Intelligence argued that the ACT should be considered as a satellite market of Sydney and that fatal and non-fatal overdoses as well as shifts in purity should be seen in this broader context. The analysis of the Australian Bureau of Criminal Intelligence which draws on data which are national or from larger regions suggests that changes in numbers of overdoses are a useful component of understanding changes in the illicit heroin market. The draft Australian Drug Intelligence Assessment 1993 summarises this as follows:

“The rising purity levels encountered in most jurisdictions is the continuation of a trend that appeared in 1992. During that year, Australia’s domestic heroin market seemed to undergo some structural changes. These included a reduction in the levels in the distribution chain, new participants and relationships formed between higher level suppliers and lower level dealers, accompanied by a rise in competition and distrust, sometimes leading to violence. In some instances during 1993, heroin trafficking syndicates also deliberately maintained purity levels high in order to secure a bigger share of the market than their competitors. The shake-out in the distribution chain may have led many dealers to demand a higher purity of the drug from their suppliers, and the reduction of dealer levels probably resulted in less dilution. Thus users tended to be offered a product of higher purity than they were used to, resulting in a number of overdoses. The inexperience of some dealers could also have led to the inclusion of greater toxicity levels during the dilution, or cutting, process”³⁹.

³⁹ The Australian Bureau of Criminal Intelligence also suggests that user concerns about HIV/AIDS may be affecting the illicit heroin market:

“Several agencies have noted an increase in the appearance of “rock” heroin (the granular form of heroin) in 1992 and 1993 (used for smoking). This has been an emerging trend internationally, which has developed in the wake of the HIV/AIDS scare and uses heroin of a higher purity to obtain the same ‘high’. There is insufficient data available in LEAs to gauge the degree to which this development can account for the rise in purity levels in Australia. More information needs to be collected on the availability of the various grades of heroin, their prices and purity levels.” (draft Australian Intelligence Assessment 1993).

DEVELOPING A METHODOLOGY TO MEASURE CHANGES IN PRICE, PURITY AND AVAILABILITY OF ILLICIT DRUGS

Background

An understanding of the illicit drug market requires being able to measure changes in price, purity and availability. If a trial of controlled availability of heroin eventuates, such monitoring will become essential in order to measure untoward effects of a trial on the illicit drug market.

We have shown in the previous section that, at least in the ACT, fatal overdoses are rare events and may not be good predictors of changes in the heroin market. Non-fatal overdoses may be better predictors, but there are two problems with using this source. First, data collected by ambulance services and Accident and Emergency Departments of hospitals are not routinely compiled and analysed. Second, non-fatal overdoses can be caused by factors other than changes in purity, so that the reliability of non-fatal overdoses as predictors has yet to be established. In any case, overdose data only gives information about the heroin market and there is also a need to measure changes in the market for other illicit drugs.

There is some information available from the Australian Bureau of Criminal Intelligence's "Australian Drug Intelligence Assessment" (1993). For example, for 1992 the following is reported about the price, purity and availability of heroin (p. 22):

"Some patterns were discernible in the price structure and levels of supply and purity during 1992:

- despite the increase in interceptions at the Customs barrier, heroin was available or in plentiful supply in most states;
- prices declined generally, particularly at the street level or, with the exception of Western Australia, were no higher than in the previous year. This trend was particularly noticeable in New South Wales, Victoria and Queensland, although prices at the lower end of the wholesale chain were not consistent (in Victoria there was an overall decline; in New South Wales they rose in mid-year then returned to the norm; and Queensland showed a marked increase towards the end of the year). Prices at both levels in New South Wales and Victoria were the lowest in Australia;
- purity levels also rose at the street level in most States and Territories, with police services and analytical laboratories reporting a gradual increase throughout the year from the 0–10% purity range to 20–25%. Several jurisdictions reported an increase in deaths due to heroin overdoses."

There is also relevant information in the draft 1993 edition of the Australian Drug Intelligence Assessment:

"In the ACT, heroin was available throughout 1993, with large amounts appearing on the streets during the latter part of the year. The AFP seized 439gm of heroin, all of which was identified as having been supplied from Sydney, and arrested 20 people. The rise in purity levels and the drop in prices during the latter part of the year were similar to the trend in several other jurisdictions. These indicators could also point to a deliberate marketing strategy.

At the street level, the price per gram in Australia tended to be higher than in 1992. With the exception of Tasmania, the typical price was about \$330 per gram, compared with the previous year's price of about \$200. Actual prices differed throughout Australia. Tasmania's averaged \$192 per gram, with a sharp reduction from the second quarter onwards. The highest **average** prices were in Queensland and the ACT, at \$400 and \$394, respectively. Western Australia, whose price for the first three quarters was the lowest in Australia at \$100 per gram, saw it shoot up to \$500–1 000 in the last quarter (In 1992 the lowest prices at both retail and wholesale levels were in New South Wales and Victoria). Victoria's experience was similar: its price was steady at \$150–200 per gram for the first two quarters, then it also soared to \$500–1 000.

Purity levels increased generally in the ACT, with controlled purchases of the drug tested at 70% purity during the latter part of the year, well up on the usual street level purity of 12%. An increase in overdoses and accidental deaths was detected. While purity levels rose, prices fell at street level from an average of \$465 per gram in the first six months to \$325 in the second half of the year.

These indicators, together with the reported increase in availability, suggest that the supply of heroin increased towards the end of the year. On the whole, heroin was slightly cheaper on the streets of the ACT in 1993 than it had been in the previous year.”

From the point of view of this study, the main problem with this information is that it cannot be independently assessed. It relies on information from seizures, controlled purchases of drugs, undercover agents, informants and the results of investigations, such as offenders’ admissions and documents (correspondence with Australian Bureau of Criminal Intelligence, 1994). As with all data sources, each of these has its limitations.

The Australian Bureau of Criminal Intelligence also gave us the following comparison between ACT and NSW heroin prices for 1993:

Quarter		ACT	NSW
1st	1 street gram	\$300	\$300–450
	1 gram	\$350	\$500
	1 oz	\$8,500	\$7,000–8,500
	1 lb	-	\$85,000–125,000
	1 kg	-	\$150,000–200,000
2nd	1 street gram	\$350–700	\$300
	1 gram	-	\$300–450
	1 oz	\$8,000–14,000	\$8,000–10,000
	1 lb	-	\$85,000–125,000
	1 kg	-	\$200,000
3rd	1 street gram	\$300–350	\$300–350
	1 gram	\$350–450	\$300–500
	1 oz	\$7,000–10,000	\$8,000–10,500
	1 lb	\$95,000–125,000	\$85,000–125,000
	1 kg	-	\$150,000–200,000
4th	1 street gram	\$300–350	-
	1 gram	-	-
	1 oz	\$7,000–10,000	-
	1 lb	\$95,000–125,000	-
	1 kg	-	-

They also reported that, generally speaking, the ACT is served by the Sydney heroin market. While the Bureau has no quantitative information for the ACT regarding purity and availability, it is generally assumed that NSW trends are reflected in the ACT market, although to a lesser degree and possibly lagging behind the Sydney market.

There is other data collected by the police which they do not have the resources to fully analyse, which is not generally available to outside researchers and which could provide valuable information; for example data on seizures (Byatt, 1993; Stoll 1993). It is not clear to what extent such data would be useful for monitoring changes in the drug market in the ACT if a heroin trial eventuates, but this is an area which warrants further exploration.

There have been few published Australian analyses of street drugs. The only one of which we are aware is by Cook and Flaherty (1981). From 1977 to 1979, the average purity of samples of foils of heroin was assessed

and was reported to range from 16.3 to 25.1% (six-monthly averages). The samples came from police seizures and were analysed by the NSW Analytical Laboratory. Unpublished work by Cook was reported to show that the main diluents⁴⁰ found in Australian samples of heroin were glucose, lactose and sucrose. Caffeine was also frequently used to 'cut' samples. Other contaminants found in heroin samples included aspirin, phenacetin, paracetamol, barbiturates, strychnine, calcium sulphate, boric acid and talcum powder. Quinine was rarely found. Cook and Flaherty argued for a strengthening of street drug analysis programs.

We therefore approached the ACT Analytical Laboratory for information about their analysis of police seizures and obtained data for 1991 and 1992. There were 14 analyses of heroin seizures in 1991. The quantities available for analysis ranged from "trace" to 78.906g. Purity was only analysed for seven samples and ranged from 0.2 to 25%. In 1992 there were 26 analyses, with quantities ranging from "trace" to 13.475g. Purity was only analysed for four samples and ranged from 6 to 19%. There was no analysis of diluents or contaminants. Slightly more samples of amphetamine or methamphetamine were analysed and there was less analysis of other illicit drugs (excluding cannabis). Thus there is too little information to provide a workable monitoring system for changes in the drug market in the ACT.

In Sydney, Don Weatherburn and colleagues are conducting a time series analysis of the relationship between seizures of heroin and heroin price and purity (Weatherburn, 1993). Determinations of heroin price and purity are being made by undercover purchases by police. While this is in many ways an excellent methodology for researching this topic, such a study is expensive and, unless purchases are made by police or with police co-operation, fraught with legal difficulties.

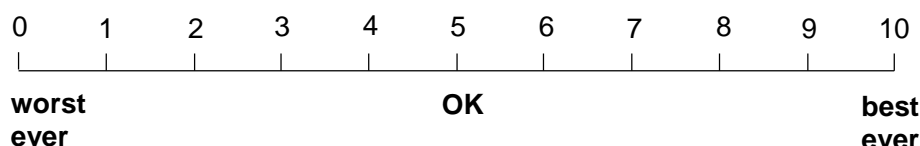
We therefore decided to develop a new methodology to measure changes in purity and availability⁴¹. In the following sections, we present the methodology, discuss problems and possible refinements and outline some preliminary results.

Overview of the methodology

Over an eight month period, we recruited ten people who were illicit drug users and who agreed to be interviewed at approximately two month intervals about the price, purity and availability of a range of illicit drugs over the period since their last interview (ie generally over the last two months). The head of the ACT Drug Squad provided the squad's assessment of the state of the market at approximately the same intervals.

The interviews were relatively unstructured; people were asked to tell us about the price, purity and availability of the illegal drugs they knew about. If common drugs were not mentioned they were prompted about them. During the last few months of the interviews, participants were asked to report on purity and availability of heroin and other common drugs using an eleven-point scale with three anchor points; 0 = 'worst ever', 5 = 'OK' and 10 = "best ever" (Figure 4). Any other comments made about the illicit drug market were also recorded⁴². Because we were developing a methodology, we also invited comments about the usefulness of the questions we were asking and from this we gained more insights into the structure of the illicit heroin market. Most participants were not paid, but some were given \$10 per interview. Some did not want payment, others were offered recompense in non-monetary ways (with photocopying, computing assistance etc). Interviews generally lasted 30 to 45 minutes.

Figure 4. Scale for reporting purity and availability of heroin



⁴⁰ Diluents have little or no pharmacological activity, contaminants are toxic or pharmacologically active.

⁴¹ Because it would require little extra effort, we decided to measure changes in price as well.

⁴² From time to time individuals told us about overdoses (not the ones in late 1992), heroin laced with strychnine and other interesting details. However we did not hear about any of these from more than one person and so wondered about their accuracy.

Before reporting the preliminary results, we describe the methodological difficulties encountered and how they could be dealt with in an on-going study.

Methodological problems and refinements

Recruitment of participants was on-going throughout the eight months of data collection. Therefore the number of interviews with each participant depended on the time of recruitment. Three participants were recruited in the first month of data collection and interviewed three or four times each during the eight months; four participants were recruited in the fourth month and interviewed two to three times each, one person was recruited in the fifth month and interviewed twice, and two people were recruited in the eighth month and interviewed once. In an on-going study recruitment would also necessarily follow this drawn out pattern because it takes time to make contacts and to establish trust. As the study progressed, we also asked the study participants and other contacts we had if they could help us recruit new participants with certain characteristics in order to be drawing information from a more diverse sample. In particular we wanted to interview more women, more people who lived in parts of Canberra other than the Inner North/Civic, more people who were not currently in treatment and people buying at various levels in the market. It took time to recruit such people (we started recruiting in earnest in the last two to four months of the study) and we had volunteers just before and just after we wound-up data collection. This has ramifications if a study was to be conducted as an adjunct to a trial of controlled heroin availability. Recruitment of participants would need to begin early, not only to get enough participants with a range of characteristics, but also to allow the establishment of a solid baseline of information against which to monitor changes⁴³.

We also had expected and unavoidable difficulties with people being out of town when they were due to be interviewed, people being uncontactable or not being able to make or keep appointments and people going into treatment and reducing their use and consequently also their contact with the illicit market and other users. The impact of such problems on a study can be minimised if there is a large total group of participants.

Participants seemed to have no difficulty in providing us with the information we asked for. The data we were asking about could be collected in 15 to 20 minutes, but with chattier participants the interviews took longer. Because we were seeing people every two months, we wanted to keep the interviews short to reduce respondent burden. Over the course of the interviews we learnt more about the drug market and we would recommend refining the questions we asked as a consequence (see below).

We made one refinement ourselves during the course of the interviews. When we began we simply asked for a description of the purity and availability of each illicit drug. Purity was described with terms like 'strong', 'good', 'reasonably good', 'increased' and 'better', hence it was impossible to make comparisons across respondents or across time with individuals. We then tested an eleven point scale with three anchor points; 0 = 'worst ever', 5 = 'OK' and 10 = "best ever" for the ratings of both purity and availability⁴⁴. No-one had problems with these scales and they seemed to work well. We also tested them in the interviews in our user survey and again they seemed to work well. In the early interviews we also did not pin participants down well enough about the quantities involved when they were describing price; sometimes quantities were not given or were not useful for comparisons.

We believe that the value of the information collected would be improved if participants were also asked for the following information:

- whether or not they had purchased the drugs they were reporting on (and in what quantities⁴⁵) or were giving us information gleaned from others,
- whether or not purchases were from their regular supplier(s)⁴⁶, and information about the place of the supplier in the drug market hierarchy,

⁴³ Ideally we would have continued data collection until such time as a decision about whether or not a trial was feasible was made. However we were defeated by lack of resources and the movement interstate of the interviewer (Ayse Sengoz).

⁴⁴ There will, of course, still be differences between respondents in what they meant by 'worst ever' and 'best ever'.

⁴⁵ The quantity purchased will affect price. The quantity purchased may be affected by, for example, whether or not the person is also dealing and at what level or whether or not they are trying to cut down or stop their own use.

- if what they had obtained was what they expected,
- the characteristics (eg colour⁴⁷) of the drugs available, and
- if there were any changes in their personal circumstances (such as trying to cut down or stop their own use) which might affect their purchasing activities⁴⁸.

We also decided that further investigation was needed to determine what the best time period for reporting was. Although most participants seemed comfortable reporting about the time period since they had last seen us (ie the last two months, approximately), it might improve the reliability of the results to get people to tell us about the state of the market in the last week, although this could be problematic for infrequent users. It would also be worth investigating the usefulness of methods which have been successful in measuring food intake, as this can be seen as an analogous activity.

There need to be enough study participants so that a proportion will always have purchased drugs in their usual way and the data analysis should focus on these 'normal buys'. Unusual circumstances should only be included in analyses when they affect a substantial proportion of the participants⁴⁹.

⁴⁶ Quality can be affected by whether the drug was bought from a long-standing supplier or from a one-off or casual source. The quality tends to be better if the dealer is higher in the hierarchy. Dealers may give their friends slightly larger than normal amounts and quality is better from dealers who are trying to get rid of supplies fast (these may be people who do not regularly deal, for example, people who have won quantities of heroin through illegal gambling).

⁴⁷ We actually collected information about colour, but because of the small amount of useable data overall did not analyse it.

⁴⁸ In the study reported here, participants volunteered this information because they felt it was important for us to know.

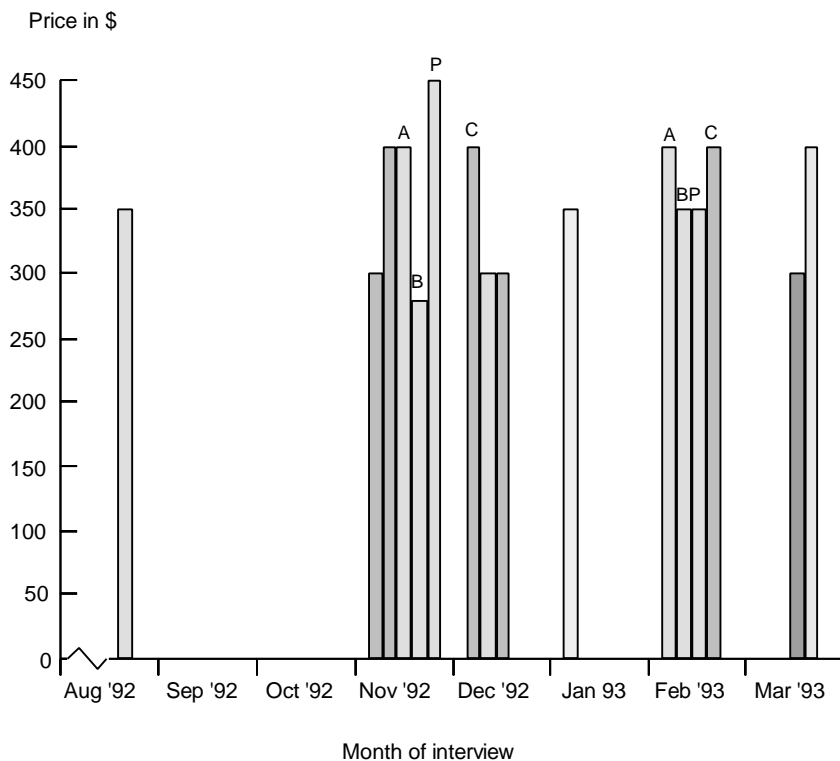
⁴⁹ That is, the focus needs to be on monitoring changes in the market rather than fluctuations in the fortunes of individual participants.

Preliminary results

Price of heroin

Fluctuations in the price of a 'weight' of heroin are presented in Figure 5. Each bar in the histogram represents one person's report of the price in the last one to three months and different shadings represent different participants⁵⁰. If a range of prices was reported, the higher price is graphed and a solid horizontal line in the histogram represents the lower price. It can be seen that in general the price was between \$300 and \$400. Of three people who were interviewed twice at approximately the same times, two said the price remained constant (A and C) and one that it increased (B); this person also reported a lower price than the other two. The police reports (P) about price were somewhat higher than those of other respondents at one of the interviews, but within a similar range at the second. If these results are compared with the information about price for the same time period provided by the Australian Bureau of Criminal Intelligence (see above), it can be seen that the price reported in this study was slightly higher. The first quarter price for a street gram reported by the Australian Bureau of Criminal Intelligence was \$300 and the price for a gram \$350⁵¹. In this study the price of a weight was reported at between \$300 and \$400, with most participants reporting it at between \$350 and \$400.

Figure 5. Changes over time in the price of a weight of heroin

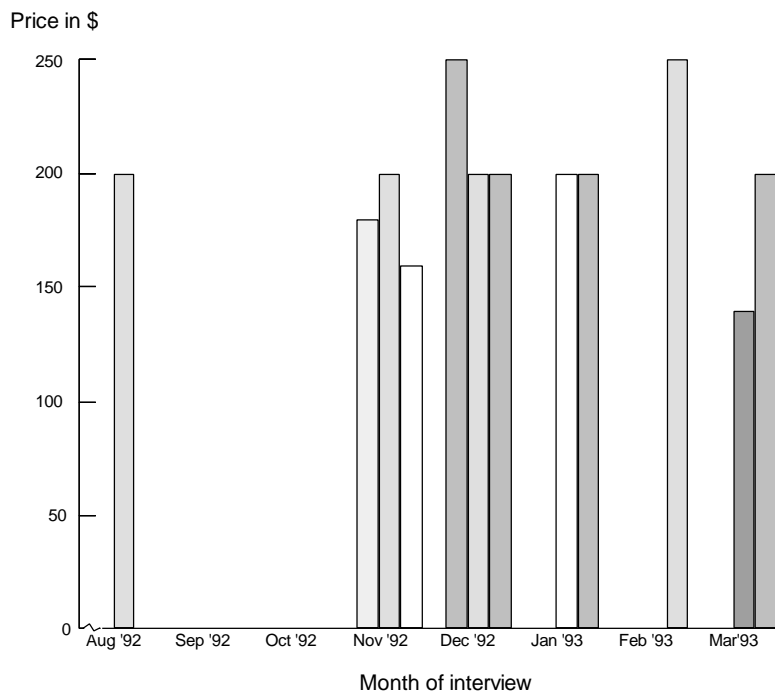


Similar fluctuations in price were reported for a half-weight of heroin (Figure 6).

⁵⁰ Not everyone knew about the price at this level.

⁵¹ A street gram is what users would buy, a gram is the quantity which would be traded by lower level dealers for later resale.

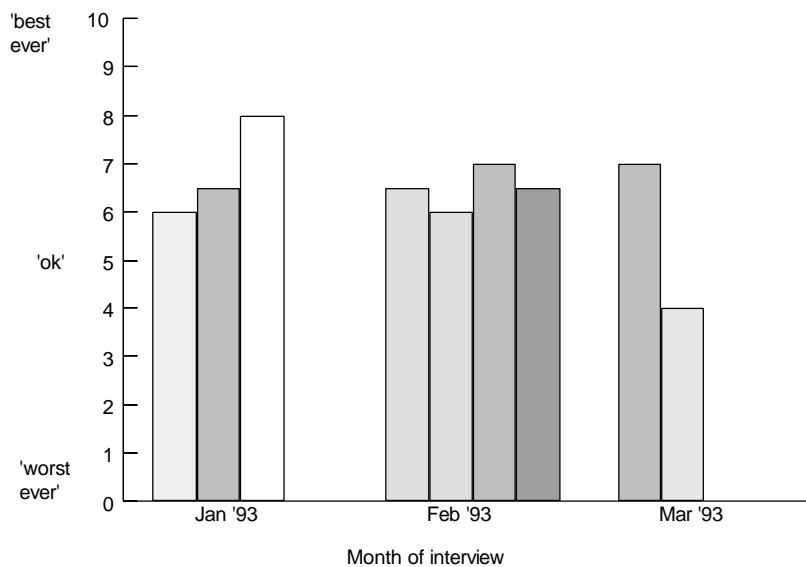
Figure 6. Changes over time in the price of a half-weight of heroin



Purity and Availability of Heroin

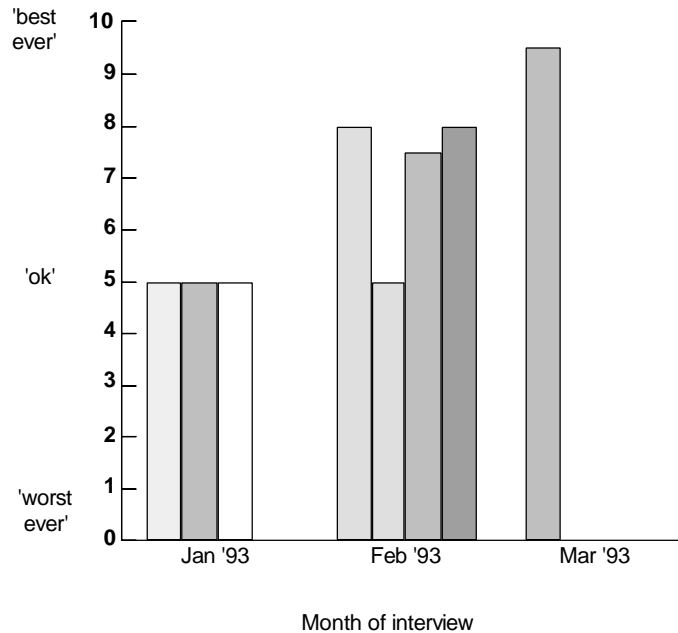
Because of the changed method of data collection, there is even less information available for purity (quality) and availability. Figure 7 shows changes in purity. In general it can be seen that

Figure 7. Changes over time in heroin purity



purity was rated as better than 'OK' and that the ratings were reasonably consistent across the three months. Availability (Figure 8) was rated as OK or better and seemed to have improved dramatically between January and February⁵².

Figure 8. Changes over time in heroin availability



Other Drugs

We chose our interviewees from people with a primary interest in the heroin market and many only had limited information about the market for other drugs⁵³.

a) Cannabis.

All of the interviewees reported seasonal changes for cannabis. From December to March (between crops) there was reported to be a great decrease in the availability and an increase in price for marijuana "heads" and an increase in the availability of "hash". The increase in price was more pronounced in larger quantities. On the street level the price of a standard deal of heads (\$20–30) was likely to remain the same, but the quantity obtained decreased by a third to a half. The police reported that, since there are more hydroponically grown crops, the seasonal troughs did not seem to be as big as in previous years.

There also appeared to be a number of dealers "*who sit on their marijuana*". When marijuana is plentiful and cheap, dealers were thought to hold off selling until the price was driven up by low seasonal availability. The ability of a dealer to hold on to stocks depends on their immediate need for money. For those who sell cannabis to support their own drug use "*it is not in their interest to manipulate the market because they always need a certain amount of people buying dope from them so that they can make enough to use themselves*".

b) Other opioids

Morphine and other opioids became available from time to time, when someone sold their prescription. Availability was limited to those who knew the person and was small and of short duration.

Homebake⁵⁴ was only available to people who knew a "cooker". In general, it was reported that if heroin was readily available and of good quality, homebake was difficult to sell.

⁵² It is interesting to speculate if availability was reduced in January 1993 as a consequence of the cluster of overdoses in late December 1992 which was associated with an increase in police activity. One respondent reported this to be the case. Another explanation could be the reported slow down over Christmas, when some dealers go away on holidays.

⁵³ The information presented reflects the state of the market at the time of the interviews (August 1992 to March 1993) and may now be out of date.

c) Amphetamines, cocaine and ecstasy

Amphetamines were reported to always be available at a consistent price (\$80–100). However the quality seemed to vary with the producer.

Cocaine did not seem to be easily available; if some came to Canberra its availability was generally of short duration (until the dealer's supply ran out). Our respondents differed in their level of interest in cocaine, ranging from no interest to those who used when it was available. It seemed to be more available at Christmas.

Ecstasy was also reported to be available, but was primarily seen as a drug used at dance clubs.

d) "Pills"

"Pills" always seemed to be readily available. Their source was generally doctors' prescriptions. Users either go to doctors directly or buy pills from others with scripts.

Results from the User Survey

We also asked current heroin users about the price, purity and availability of heroin in the last six months in our user survey⁵⁵.

Thirty-six people gave a response on price, with 83% reporting there had been no change, 14% reporting a change and 3% reporting they did not know. Those who reported a change were then asked to give the highest and lowest prices for a quantity which they nominated and for a 'gram'. Of the five people reporting a change, one reported the same values for the lowest and highest prices, so that this result was discounted. Two reported changes in price for a half-weight; one said it varied from \$160 to \$250 and the other from \$250 to \$400. Variations in the price of a gram (which is the quantity some of the respondents nominated) were \$250–350, \$300–500, \$400–1,000 and \$700–1,000.

From this we concluded that the majority of current heroin users in this survey purchased small amounts of heroin, where price would not vary, but quality would (this is consistent with conclusions drawn from responses to other questions; see section on market structure). Although the sample size is small, those with some knowledge of the higher levels of the market seemed to differ in their access to sources and hence in the price they would expect to pay for larger quantities of heroin.

We also asked about changes in purity and availability using a ten-point scale⁵⁶ and the results are shown in Figures 9 and 10.

54 Homebake is an injectable opioid which can be manufactured from codeine tablets. The manufacturing process is usually conducted in a domestic kitchen.

55 The questions asked were:
 How would you rate the availability of heroin in the **last six months**?
 What has been the range in the **last six months**? [worst and best];
 Overall, how would you rate the purity of heroin in the **last six months**?
 What has been the range in the **last six months**? [worst and best]
 (Respondents were shown the scale for each question and asked to use it to quantify their answers.)
 Has the price of heroin varied in the **last six months**?
 How has it varied (over the **last six months**)? a) Range of prices for a quantity nominated by respondent.
 b) What was the range of prices for a gram?

56 Unfortunately the comment 'worst ever' was anchored to the value '1', rather than '0', so that there were more values higher than 'OK' ('5') than below.

Figure 9. Estimates of changes in purity of heroin over the last six months

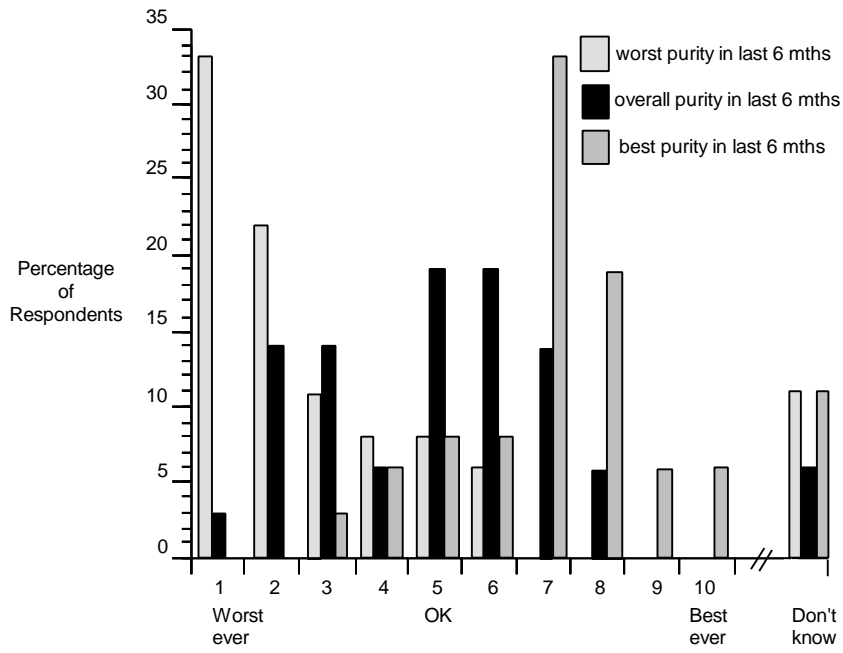
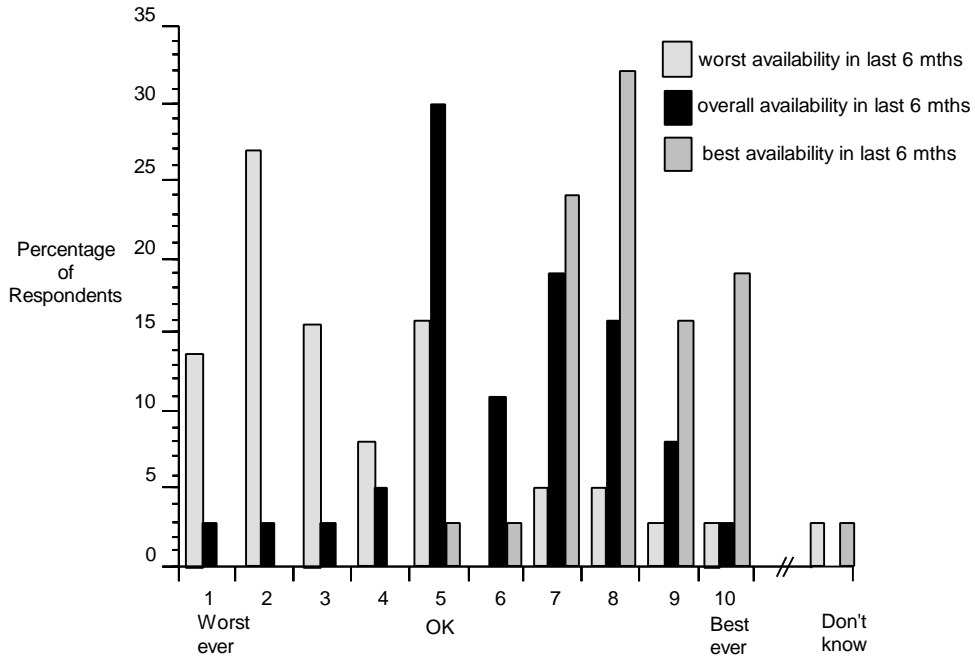


Figure 10. Estimates of changes in availability of heroin over the last six months



Overall purity was rated at a median level of 5 (range 1–8). At its worst in the last six months, purity was rated at a median of 2 (range 1–6). At its best, purity was rated at a median of 7 (range 3–10). This illustrates that

the majority of participants experienced quite dramatic shifts in purity over the last six months. These results would be more meaningful if they could be tied to actual levels of purity⁵⁷.

Overall availability was rated at a median level of 6 (range 1–10). At its worst in the last six months, availability was rated at a median of 3 (range 1–10). At its best, availability was rated at a median of 8 (range 5–10). Thus, as well as experiencing shifts in purity, most participants also experienced shifts in availability over the last six months.

Conclusions

Measurement of fluctuations in the market of purity and availability, and to a lesser extent price, of large quantities of heroin is fraught with difficulties. The method we developed shows some promise for the measurement of changes in the market for heroin and other drugs if a heroin trial eventuates. The most critical factor in this method is the choice of interviewees. For the information gathered to be valid, there needs to be a range of interviewees who all have detailed knowledge of the market for one or more drugs. Ideally the responses of the 'coal-face' participants regarding purity would be anchored by analysing samples of various drugs for their actual drug content. It would also be useful to 'unpack' the concept of availability through further interviews with users. Is it a measure of the ratio of successful to unsuccessful attempts to purchase a drug or is it a surrogate measure for purity, so that low availability means that only drugs of low quality are for sale? The implementation of a reliable method for measuring changes in the markets for a range of illicit drugs is a long-term undertaking which needs a substantial commitment of resources both for the development of reliable indicators and for measuring them over an extended period of time.

57

Because people were interviewed in the period March to July 1993, the six months they were reporting on varied. We examined the results according to month of interview and although there were some tantalising suggestions of differences, the sample sizes were too small and the variances too large for the differences to be meaningful. This was the case for both purity and availability.

CONCLUSIONS

Implications for the Feasibility of a Trial of Controlled Heroin Availability

A major harmful consequence of prohibition has been the huge profits to be made from trafficking in illicit drugs with associated corruption and contempt for the law. An on-going challenge for drug policy is to find ways to reduce the profitability of trafficking and its associated ill effects. The illicit drug market seems to have well-established and effective systems of operation which are both flexible and adaptable. This flexibility and adaptability make law enforcement difficult. Consequently an argument can be made that other ways of decreasing the drug market, for example through controlled availability of currently illicit drugs, might be worth trying.

The question then arises of whether or not the proposed ACT trial of controlled availability of heroin (if it eventuates) should aim to reduce the market for illicit drugs. In particular, should this be an aim given that a trial would be limited in size, location and time?

Because of its very illegality, the structure and functioning of the illicit drug market is not well understood. The study described here had the limitation of being confined to a small number of dependent user/dealers, with no information being gained about the involvement in the market of non-user dealers or non-dependent users. These two groups are the most difficult to access. Non-user dealers are thought to control the availability of heroin. Non-dependent users are thought to be the most numerous purchasers of heroin, and although it is not clear what proportion of the heroin market is involved in supplying non-dependent users, they are likely to be a force that should not be ignored. As they would not be participants in a trial of controlled availability, they are likely to remain a source of demand for illicit heroin. There is also evidence to suggest that the markets for different illicit drugs are becoming less separate at all levels. Thus controlled availability of heroin might have an impact on the market for other drugs as well as heroin.

There is no previous research which can assist in predicting what the effects of a trial of controlled heroin availability on the illicit drug market might be. Not only does the illicit drug market seem to differ in its operations from country to country, but there have been few evaluations of the effects of any drug policy change, let alone the controlled availability of heroin, on the drug market.

One of the longest running modern programs of controlled availability of heroin (and other drugs such as amphetamines and cocaine) is that run by Dr John Marks in Widnes and Warrington in the Mersey region of the United Kingdom (for a description see Bammer et al., 1991). Detective-Constable Mike Lofts, who works with the drug squad policing this program, has reported that:

“It is also true to say that since the clinics opened, the street heroin dealer has slowly but surely abandoned the streets of Warrington and Widnes and convictions for possession of street heroin have dwindled along with him. We still have heroin problems in other parts of the county, where the drug dependency clinics practice predominantly “methadone reduction regimes”” (Lofts, 1992, p. 105).

While such a statement coming from the police is powerful, there has been no independent corroboration of the effectiveness of these prescribing programs. In addition, both programs are quite small, with only 50 or so people receiving scripts for heroin at each clinic⁵⁸. In the whole Mersey region there are thought to be of the order of thousands of dependent heroin users (including those in methadone programs).

In the context of an ACT-based trial, it can be concluded therefore that there might be dangers in perturbing a system which is flexible, probably intertwined with the marketing of other illicit drugs and poorly understood. In addition, any measure which poses a real threat to such a profitable system might be expected to be the target of retaliatory action. As Butler and Neil (1994) have outlined, such action could be economic (such as increasing the purity of supplies) or non-economic (such as trying to undermine the trial).

We conclude that it would be prudent for an ACT-based trial, if it eventuates, to be modest in its aims. Because the prescription of heroin has generally not been evaluated or has been shown to have equivocal benefits compared with oral methadone (Hartnoll et al., 1980), it seems desirable in the first instance to focus on

58

These two clinics have the smallest number of clients of any of the clinics in the Mersey area.

the effects of controlled availability at the level of individual trial participants. If the controlled availability of heroin shows clear advantages at this level, it might then be appropriate to plan an intervention which is aimed at the market itself.

A trial should therefore be structured to have minimal impact on the illicit drug market. In our judgement, the most effective way to do this would be to limit participation in a trial to people currently on the methadone program, as many of them will have severed or be reducing ties with the illicit heroin market⁵⁹.

It can also rightly be asked if the possibility of retaliation by those within the drug market who see the trial as a threat or the possibility of untoward consequences of a trial with regard to its effects on the illicit drug market (eg stimulating the marketing of other drugs) are such that a trial should not proceed. It is impossible to predict how likely such consequences are. Certainly this argument has not been raised up to this point by critics of the trial proposal. We would also argue that perceived threats from criminal elements in society, whether real or not, should not be allowed to influence policy. Overall, it seems unlikely that these dangers are sufficient to warrant concluding that a trial is not feasible. Nevertheless the effects of a trial on the illicit drug market should be monitored.

We have shown that monitoring the effects of a trial on the illicit drug market is likely to be expensive and that many of the measures likely to be useful require further development. We have dealt both with existing data sources and with a new methodology that we have developed.

The main data sources we have examined are information about fatal and non-fatal overdoses. We have shown that fatal overdoses are rare in the ACT and that they do not seem to be good predictors of the state of the heroin market. Non-fatal overdoses may be a more valuable monitoring tool, but the validity of using this measure as a surrogate for heroin purity needs to be verified.

At a workshop held in February 1993 (Bammer, 1993), the potential value of analysing data collected by the police was discussed (Byatt, 1993; Stoll, 1993) and this should be further examined.

In addition we have developed a promising method for measuring changes in the illicit drug market, which involves interviewing people at regular intervals about the price, purity and availability of a range of illicit drugs. The most critical factor in this method is the choice of interviewees. For the information gathered to be valid, there needs to be a range of interviewees who all have detailed knowledge of the market for one or more drugs. Further development of this method requires research into reliable indicators. The implementation of a fully valid and reliable system would require a substantial commitment of resources.

If a trial of controlled availability does eventuate, it is possible that a more economical way of monitoring effects could be developed. We have argued elsewhere (Bammer et al., 1994), that re-establishing the ACT Drug Indicators Project⁶⁰ would be a valuable evaluation tool if a trial took place. Indeed a prime aim of that project was to measure changes in the illicit drug market. The chief data source was people contacting treatment services or arrested by police, and changes in the proportions of people using different drugs as determined by these contacts were used as indicators of changes in the illicit drug market. This measure is likely to be too crude for monitoring effects of a trial on the illicit drug market, but may be able to be easily and inexpensively modified. It would be possible, for example, for new contacts at treatment services to be routinely interviewed about the state of the market in the last six months using questions similar to those asked in the 'user study'.

59 While some people on the methadone program are still heavily involved in the illicit drug market, our research (to be published in a forthcoming working paper) shows that most have severed or greatly weakened their connections. Given that the number of people treated by the ACT methadone program increased dramatically in 1992-3, it would have been interesting to investigate the effects of this expansion on the illicit drug market.

60 The ACT Drug Indicators project was a three year program of research (1987-1989) which aimed to "develop and refine methodologies for estimating the incidence, prevalence and character of illegal drug use, to construct and monitor indicators of relative changes in drug use levels and patterns over time, and to assess how best to integrate information from different agencies and sources to provide a broader and more accurate picture of illegal drug use than is currently available" (Stevens et al., 1989, background information). All major drug treatment and criminal justice agencies in the ACT area collected demographic, drug use, treatment and criminal record information from new contacts according to a standard format. Data from this project were used by Larson (1992) to estimate numbers of heroin users in the ACT.

Periodic interviews with people in the illicit drug market could then be confined to people not in treatment,⁶¹ so that this could be a key group of relatively few individuals⁶².

Monitoring the effects of a trial on the illicit drug market could then take place through four independent measures:

- a re-established and modified Drug Indicators Program, where new contacts at treatment agencies were asked about the illicit drug market,
- periodic interviews with a group of individuals who were not in treatment,
- monitoring changes in non-fatal heroin-related overdoses using data collected by the ACT Ambulance Service, and
- monitoring of police data on arrests and seizures.

Trial participants could also be periodically interviewed about their knowledge of changes in the illicit drug market.

Some further research is needed before a reliable, workable and affordable monitoring system could be established. However, it does seem that it would be feasible to monitor untoward effects of a trial.

It is more difficult to determine what the consequences should be if untoward effects are found. On the one hand, it could be argued that there should be close collaboration with law enforcement agents to act against socially-harmful changes in the drug market. On the other hand, it can also be argued that trial evaluation and law enforcement should be kept separate and that a close collaboration between them would 'muddy the waters'⁶³. This issue will be dealt with in a forthcoming working paper on trial design⁶⁴.

Other Implications for a 'Heroin Trial'

This study of the drug market also raises other issues for a trial of controlled availability of heroin. First, the results indicate that people generally start dealing to finance their own heroin use. It can also be inferred that many people's habits increase when they have more ready access to heroin, so that problematic *'dealer's habits'*

61 If people not in treatment were willing to be interviewed.

62 However the difficulties of interpreting results from too small a group are discussed in the previous section.

63 Research into the drug market is fraught not only with methodological difficulties but also with ethical dilemmas. Dealing in drugs is illegal and is subject to harsh social opprobrium and severe legal penalties. Those involved in this activity are therefore understandably reluctant to participate in research. The allied ethical dilemma is whether or not researchers should ask participants to provide information which could potentially be used against them or other illicit drug users by law enforcement agencies. Even when the information is written up in an aggregate form, not revealing the identity of any individuals, it may provide useful information for law enforcement. There is no way that researchers can anticipate or control the use made of published information by law enforcement agencies or others.

If participants do come forward, researchers need to be able to guarantee confidentiality. This includes protection from being summonsed, or having information they provide subpoenaed, by a court.

In this study we contracted with the interviewees that they would be given the opportunity to comment on the final draft to ensure that no information would be revealed without their approval. This process did not cause major problems, partly because we did not uncover any startlingly new information. However, it may not work in a large scale study. If there is a major investment of resources, it may be difficult to suppress findings, especially given that researchers are rewarded for "discovering" new information.

We were able to deal with the confidentiality issue by having the study gazetted as a prescribed study under the ACT Epidemiological Studies (Confidentiality) Act (1992). This Act obliges those assisting with the study to comply with strict secrecy provisions. It also provides that a person assisting with the study cannot divulge in court:

(i) documents containing information about the affairs of another person acquired during the study; or
 (ii) information about the affairs of another person acquired during the study (s.8).

In addition there is no offence of misprision of felony in the ACT due to the abolition of the distinction between felony and misdemeanour.

64 The interaction between trial staff, trial evaluators and police is an important issue for a trial. It is clear that the drug squad, and probably other members of the police, have a large amount of information about individual dealers and users, which it would be useful for trial staff and trial evaluators to know and vice versa. Police views on this issue were collected in Stage 1 of the feasibility study (Stevens et al., in preparation). Traditionally health providers have had little interaction with police in order to protect client confidentiality and to ensure that the service remains client-friendly. There will need to be clear agreements about the respective roles of trial staff, trial evaluators and police and about communication channels between them for a trial to proceed successfully.

can result⁶⁵. This has implications for the amount of heroin prescribed in a trial of controlled availability. People may not stop dealing unless they receive enough heroin to meet their needs and their demand for heroin may increase as their tolerance increases⁶⁶. The prescribing strategy may therefore affect the outcomes, both in terms of continuing illicit (non-trial) heroin use and in terms of continuing involvement in criminal behaviour. This issue will be explored in depth in a forthcoming working paper on trial design.

There is clearly a lot of money to be made from dealing heroin, even at the level of the participants we interviewed. Our interviewees reported that they stopped dealing when there was a combination of loss of supplier and negative effects resulting from their own dealer's habits. If a trial eliminated the negative effects resulting from having a large habit, at least some people may continue dealing as a source of income (especially given the difficulties of finding legitimate employment). Trial evaluators need to be able to measure this outcome, but for obvious reasons self-report may not be an effective way to do this. Arrests and convictions might be workable measures, but the level of law enforcement itself would influence the likelihood of such dealing and would also need to be monitored as part of any outcome measurement. This will be discussed in more depth in a forthcoming working paper on outcome measures.

Preventing Overdoses

We found that overdoses seem to be an important but greatly under-researched health problem associated with illicit heroin use. More research into this area could be valuable in developing health education strategies. The sorts of questions which need to be addressed are: are there sex and age-related differences in overdoses? If so, why? What is the prevalence of overdosing among people on methadone programs and what are the circumstances under which such overdoses occur? What proportion of overdoses are caused by the use of heroin in combination with other drugs? Are users aware that some drug combinations may be riskier than others? What is the level of knowledge among drug users about methods to protect themselves and to revive others?

There may also be value in providing workers from organisations which have close contact with illicit drug users with epidemiological training and back-up, so that they can investigate 'outbreaks' of fatal or non-fatal overdoses. An epidemiologist would have investigated the cluster of overdoses which occurred in December 1992 along the following lines. They would have taken action as soon as they heard about the cluster and attempted to make contact with anyone present when the overdoses occurred and with people close to the deceased⁶⁷. They would have encouraged the interviewees to have talked fairly generally, but would also have had a checklist of issues to be covered or a list of specific questions. For example, interviewees would be asked if they had used heroin from the same batch and what their symptoms had been; they would be asked similar questions about anyone else present at the time of the overdose. They would be asked if they had purchased the heroin from a new dealer, if the dealer had reported receiving a new batch of heroin, if other drugs had been used at the same time and in what quantities. They would also be asked about the deceased's general state of health and state of mind. And so on. The aim would be to determine if the overdose had been accidental or deliberate and what the causes had been, so that, if necessary others could be warned.

65 Dance (personal communication, 1994) has also found this in her study of ACT illicit drug users.

66 As indicated earlier, if trial eligibility was restricted to methadone program clients, many participants would no longer have strong ties with the illicit drug market. However, these concerns about dealing would still hold for some participants. While we did not cover issues involved in stopping dealing to any great extent in our interviews, stopping dealing does bring about important changes in the dealer's life and there are pressures on them from both their former customers and former supplier(s).

67 This is where workers from user organisations would be particularly useful - they would probably be the best people to make contact and conduct the interviews.

APPENDIX A: QUESTIONNAIRE FOR STRUCTURE AND FUNCTIONING OF ACT ILLEGAL DRUG MARKET

What sort of things affect the market? That is influences the types and quantities of drugs available on the market?

- changes in who is importing
- seasonal changes
- effects of law enforcement
- changes in customer demand
- market manipulation by dealers
- market manipulation by “Mr Bigs” (describe “Mr Big”)
 - define time period
 - define place
 - define drugs
 - why did/does it change
 - extent - localised or city wide

What factors affect the price, purity and availability of drugs?

It is anecdotally known that most users deal at some stage at various levels. Have or are you now dealing in Canberra?

- how long?
 - have you ever stopped, for how long?
- how did/do you first get started?
- what did/do you deal?
 - did/do you ever specialise?
 - did you ever change?
- how many people did/do you sell to?
- what is the age range of your customers, sex (more male or female), employment status?
- how big were sales on average to each person?
- are people buying to resell or for their own use or both?
- did/do you sell only to people you knew or to anyone?
 - what circumstances would change this?
- how many of your customers were regulars? casuals? new?
 - did/do you treat everyone the same?
- how many of your regular customers did/do you know for more than 6 mths / 1 year / 5 years / 10 years?
- think about a typical person that would come to score from you, what are their characteristics?
- and what about a non-typical person, what are their characteristics?
- where did/do your customers come from, ie what areas in Canberra?
 - is there more than one market in Canberra?
- have you been involved in dealing in other states of Australia?

I'd like to know where you are situated in the market?**Did/do you sell to make profit or to support own use or both?**

- what would have been your average daily/weekly turnover of drugs and money?
 what factors would affect this?
- if you have a partner do you give drugs to him/her?

Tell me how you would set up a deal with a customer?

- do/did you work with a partner?
- who makes contact?
- was the deal dropped off somewhere?
- was the exchange of money for drugs conducted in your home?
- is it different for people you know?
- did/do you allow credit, under what circumstances, what if they don't pay?
- did/do you allow bargaining?

Tell me how you would set up the deal with your own supplier?

- introduction to supplier?
- contacting suppliers?
- collecting supplies / payment for supplies?
- how did/do you test what you buy from your supplier?
- how did/do you decide how much to cut?
 what is involved in the packaging, who weighs etc, how carefully?
 where are the deals stored?
- how many suppliers did/do you have?
 is there any competition between suppliers or is there a monopoly?
- were you ever ripped off by a supplier?
 what did they do?
 what did you do as a consequence?

Did/do you employ anyone to work for you?

- did/do you need to employ a body guard for protection?
- what about a runner or lackey?

I'd like to ask about any violence involved in drug dealing

- have you ever been involved in incidents where drugs have taken from you with violence?
- have you ever been violent to someone who hasn't paid?
- has anyone been violent towards you because you haven't paid?

Is there competition between dealers?

- in cost cutting, access, dropping off as opposed to having customer come to them
- do dealers help each other out?
 with credit or supplies?

Did/do the police know about you?

did/do they hassle you?

did/do they take bribes?

Have you ever needed to shut up shop?

for how long?

why?

what did you do about your customers that wanted to score from you?

How did the market change when you were dealing?

- price, purity and availability of drugs
- number of dealers; increase or decrease
- introduction of new/different drugs

What would you have done if while you were dealing, drugs became legal?

- alternative incomes
- what if only heroin became legal

What do you know about the proposal for a heroin trial in the ACT?

- what effect do you think it will have on the illicit drug market?
- do you think it is a good idea?

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FEASIBILITY RESEARCH INTO THE CONTROLLED AVAILABILITY OF OPIOIDS

The Feasibility Research into the Controlled Availability of Opioids arose from a request to the National Centre for Epidemiology and Population Health (NCEPH) from the Select Committee on HIV, Illegal Drugs and Prostitution established by the Australian Capital Territory (ACT) Legislative Assembly.

A first stage of research, conducted in collaboration with the Australian Institute of Criminology (AIC), found that a trial to provide opioids, including heroin, to dependent users was feasible in principle. It was recommended that a second stage of feasibility investigations to examine logistic issues be conducted.

The first stage investigations examined illegal drug use in the ACT, the arguments for and against the controlled availability of opioids as reviewed in the literature, the current Australian political context for a trial, the role of interest groups in social controversies, legal issues, possible options for a trial, ethical issues, attitudes to a trial in the general community and among key interest groups (police, service providers, and illegal drug users and ex-users), and evaluation by a randomised controlled trial.

In addition, a proposal for a trial was developed as the starting point for the Stage 2 investigations.

The research which needs to be conducted to determine Stage 2 logistic feasibility can be divided into five areas:

- core information (for example, estimating numbers of users, determining relevant characteristics of ACT-based users, documenting the known information about the psychopharmacological and toxicological effects of opioids);
- information relevant to trial design and evaluation;
- information relevant to service provision;
- information about relevant legal, law enforcement and criminological matters;
- community and key stakeholder acceptability of a specific trial proposal.

The Stage 2 research is also governed by the following principles:

- the research should have intrinsic value so that, regardless of whether or not a trial goes ahead, the research should be of value to treatment services or to drug policy generally;
- research should be conducted in all relevant disciplines and the disciplinary findings should be integrated to address the central problem;
- the process should involve to the greatest extent possible the key interest groups— illicit drug users, ex-users, service providers, police, policy makers and the community.

Stage 2 of the feasibility research into the controlled availability of opioids has many components. As significant advances are made in each particular substudy, we publish the results as a working paper, so that the information is available for discussion in the public arena.

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Newsletters

- # Newsletters reporting project results are also published from time to time.

These publications are available free from:
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