

**TRANSITIONS BETWEEN ROUTES OF
ADMINISTRATION AMONG CAUCASIAN
AND INDOCHINESE HEROIN USERS IN
SOUTH-WEST SYDNEY**

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EXECUTIVE SUMMARY

This report presents the findings of the first study of routes of heroin use in Australia, and the first detailed survey investigating heroin use among Indochinese users in NSW. A total of 200 heroin users in South West Sydney were interviewed for the study. The sample was equally split between Caucasian and Indochinese heroin users and those in methadone maintenance treatment and those not in treatment. The study aimed to gather data on the patterns and correlates of heroin use in the two groups, and, in particular, on routes of administration, social and cultural contexts of use, health, crime and use of treatment and other services.

The study documents the use of heroin by smoking or inhalation ("chasing the dragon"), as well as injecting. Prior to this research, it was believed that non-injecting routes of heroin administration were rare: our findings indicate that smoking is a popular route of administration among both Caucasian and Indochinese heroin users. Smoking was much more common among Indochinese heroin users, although many had made a transition to injecting. Many smokers often expressed a fear of injecting, and/or the belief that injecting was more addictive than smoking. Those who favoured injecting believed it provided a better "rush", and was more cost-effective than smoking. Indochinese users were more likely to associate negative identities with the term "junkie" than Caucasian users. Smoking appeared to be more culturally acceptable than injecting among Indochinese users.

Data on risk-taking behaviours, specifically the sharing of injecting equipment, revealed a small but significant risk for the transmission of blood-borne diseases, such as Hepatitis and HIV. This risk appeared greater for the Indochinese group, those who were not in treatment, and those who were more dependent on heroin. Our results also confirm the emergence of a street-based injecting culture in the Cabramatta area: more than half of those interviewed reported injecting in public places, including on the streets, in the stairwells and garages of local flats, public toilets and trains. Although Caucasian users were more likely to have experienced an overdose, this was primarily explained by their use of a greater number of drug classes than the Indochinese sample. Poly drug use and age were positively associated with having experienced a non-fatal overdose. Consistent with other Australian and overseas research, the Caucasian sample were also more likely to have consumed alcohol and/or benzodiazepines prior to non-fatal overdoses.

Our results indicate that Indochinese users were much less likely to have had contact with treatment services, and made less use of community services. The study also found that they were more socially isolated and more immersed in the heroin scene than their Caucasian counterparts. The Indochinese were also much more likely to use illicit methadone to attempt to moderate or detoxify from heroin use than Caucasians, who used it to become intoxicated or because they were "hanging out". It is however, important to note that apparent ethnic differences may be associated with social and ecological factors. For example, elevated risk-taking among the Indochinese may be associated with the situations in which they inject. Nonetheless, there are important cultural differences between the groups which may have implications for service provision. Currently, apart from methadone maintenance, there are limited services for heroin users in this area and there appear to be significant barriers to Indochinese users accessing existing services. There is an urgent need to investigate culturally appropriate treatment and outreach services for this group.

1.0 INTRODUCTION

People have been injecting drugs, including opium, for at least 300 years.¹ Injecting drug use has been documented in 120 countries around the world with current estimates of the number of injectors in excess of five million (Mann et al., 1992). Heroin use, in particular, has become synonymous with injecting drug use. While injection is generally considered to be the most efficient means of using heroin - a finding supported by studies reporting lower levels of dependence for chasers compared to injectors (Gossop et al., 1992)² - intravenous use has also been associated with major health risks, primarily overdose and the transmission of blood borne viruses. Heroin can, however, be used in a wide variety of ways. It can be ingested, sniffed, smoked in cigarettes, mixed with marijuana ("snowcones"), inhaled via the vapours released from the heated sublimate ("chasing the dragon") or injected (subcutaneously, intramuscularly or intravenously).

There are signs that heroin is making a comeback as the drug of choice for the 1990s, recovering "its historical preeminence as a leading illicit narcotic" and establishing a new status as a "world drug" (McCoy, 1994:47). During the 1980s global opium production increased from 1,500 tons in 1982 to 4,100 tons in 1989 (McCoy, 1994:44). In the United States, increased purity levels and a sharp decrease in wholesale prices (e.g. from \$100,000 per kilo to \$60,000 in New York) (United States General Accounting Office, 1992; Neaigus, 1996) appear to have reduced the barriers to initiating use and increased the pool of potential consumers, reflected in growing numbers of heroin-related hospital admissions and heroin-related deaths (e.g. Hunt and Rhodes, 1993; Hartnoll, 1994; McCoy, 1994; Hamid and Curtis, 1995).

The emergence of relatively cheap, high quality heroin, in a period of increased production and the "globalization" of use, has been accompanied by the resurrection of heroin as a potent symbolic good by a new generation of aesthetically conscious, but socially alienated young people. The reincarnation of heroin as a "style statement" has been most apparent in the United States, where, according to McCoy, heroin has become "the badge of the hip American nihilist":

In Los Angeles, films such as "Drug Store Cowboy" and "My Private Idaho" have mythologised the drug, adding an allure to addiction for the city's edge actors. In San Francisco, brands like "Pale Horse" and "Morphine" celebrate the drug, making its trademark dragon iconography a fashionable logo for club-cruising gear, stylish caps and T-shirts. Seattle's grunge movement is wrapping the drug in an ambiguous embrace, and the heroin-related deaths of

¹Although intravenous administration dates from at least the seventeenth century, it was not until the advent of the hypodermic method in the late nineteenth century that injecting became a popular route of administration (Berridge and Edwards, 1987:139-149).

² Research indicates that chasing or smoking is only slightly less efficient in terms of bioavailability or drug recovery (Huizer, 1987; Jenkins et al., 1994). The most recent study (Jenkins et al., 1994) involved administering heroin to human volunteers via a computer controlled smoking device and comparing the effects to those produced by intravenous doses. While the effects of smoking compared to injecting were not identical (i.e. equal on a gram to gram basis), they were very similar (Jenkins et al., 1994).

local rock icons Andrew Love and Kurt Cobain give it a cultish degeneracy ... On the East Coast, heroin is back as an old friend, a simple respite from the roller-coaster rip of crack cocaine and all its craziness (1994:48).

Following anecdotal and ethnographic reports of heroin smoking in South West Sydney, among Indochinese heroin users in particular, the current study was designed to examine routes of heroin administration in the area. The research aimed to document current patterns of heroin use and to compare our findings with those reported in the United Kingdom, Europe and North America. We also aimed to explore the influence of cultural factors on the choice of route. Further, this research aimed to fill significant gaps in our knowledge of the use patterns, risk-taking behaviours and treatment expectations of Indochinese heroin users in South West Sydney.

1.1 Review of the literature

A brief history of routes of opiate administration

Opium is one of the oldest and most respected substances in formal and folk pharmacopoeia. Its history as a global commodity and commercial euphoric illustrates complex and little understood social, cultural, and economic processes. In particular, scant attention has been paid to the influence of route of administration in determining the market dynamics of this major global commodity and, conversely, the impact of market and extra-market forces (including government control and eradication efforts) on patterns of consumption and routes of administration.

Opiates have a long history of non-injecting routes of administration. Opium was first introduced to Asia by Arab traders in the eighth century AD. It was commonly consumed in the form of a beverage made from the seeds of the opium poppy (Machado, 1994) and was readily incorporated in the Chinese *materia medica* (Courtwright, 1982). By the tenth century A.D. opium cultivation and ingestion had spread throughout central and eastern Asia and there were reports in the fifteenth century of opium being consumed in the form of pills (Berridge and Edwards, 1987; Machado, 1994).

By the sixteenth century opium was well established in Western European medicine (Berridge and Edwards, 1987). During the seventeenth century, the Dutch East India Company was responsible for the diffusion of opium smoking throughout Asia, acting as a supplier of both opium and tobacco. The enormous profits to be had from this mercantile trade in low-weight, high-value goods provided the incentive for the commercialization of opium cultivation and production. By the end of the 18th century, opium had become a major trade commodity (McCoy, 1994). With the gradual improvement in methods for refining opium, tobacco was left out of the mixture and opium was smoked alone (Spencer and Navaratnam, 1981). China, in particular, displayed a voracious demand for smokeable Indian opium. Despite Imperial decrees in 1729 and 1799 banning opium smoking and importation, Chinese consumption continued to rise throughout the nineteenth century (McCoy, 1994).

The influence of consumers in determining the form in which opiates are available has a long history. In 1836 a former opium examiner wrote that 'The great object of the Bengal opium agencies is to furnish an article suitable to the peculiar tastes of the population of

China' (Butler, 1836 cited in Spencer and Navaratnam, 1981:11). The article eventually furnished for the Chinese market was a smokeable form known as *chandu* which was clearly superior to the less powerful *madak* which had a low morphia content.³ Merchants began to supply opium to the Chinese in cake form which was sufficiently moist to enable the preparation of *chandu*. In contrast to Chinese consumers, who demanded a potent refined form of opium suited to smoking, in India most consumers were content with oral ingestion of the crude form.⁴

Following the loss of the British East India Company's monopoly on the opium trade in 1834, Chinese imports increased tenfold from 270 tons in 1820 to 2,558 tons in 1840. During this period, opium smoking spread rapidly in China, reaching an estimated three million smokers by the 1830s (McCoy, 1994:13). In the fifteen years following the First Opium War in 1842, Chinese imports of Indian opium almost doubled before China legalized the trade after the Second Opium War in 1858. Legalization saw the spread of local cultivation and production and a sharp increase in consumption. Imports of Indian opium rose from 4,800 tons in 1859 to a high of 6,700 tons in 1879. During the 1880s, domestic production was estimated at 10,000 tons per annum. By 1906, it was estimated that China had 13.5 million opium smokers consuming 39,000 tons of opium. As McCoy has pointed out, with an estimated 27 percent of adult males "addicted" to opium, China had "a level of mass addiction never equaled by any nation before or since" (1994:19).

During the nineteenth century opium use also increased steadily in Europe and the United Kingdom where it was typically ingested in the form of oral preparations and patent remedies. Among the best known and widely used forms were laudanum, otherwise known as tincture of opium,⁵ paregoric (camphorated tincture of opium) and various sedative solutions, including a full range of children's opiates with names such as *Mrs. Winslow's Soothing Syrup* and *Street's Infants Quietness* (Berridge and Edwards, 1987:xix)

Most of the opium consumed in England came from Turkey and until 1868, there were no restrictions on its importation and sale. Opium was freely available and its use was culturally sanctioned. Pharmacists, apothecaries, grocers and small shopkeepers all sold various opium preparations over the counter. In addition to oral preparations, opium could be purchased in the form of pills, lozenges, compound powder, confectionery, plasters, ointments, suppositories, liniments,

³Madak was prepared by heating a mixture of raw opium and water until a thick suspension formed. The suspension was strained and mixed with a powder of charred leaves to form a paste which was then rolled into pills. Chandu was a much stronger smokeable extract prepared by boiling the strained solution of opium in water to reach a thick consistency with the appearance of coal tar (Machado, 1994:26).

⁴ Recent ethnographic research by Ganguly et al. (1995) indicates that oral consumption of a water-based extract known as *amal* was the most common route of administration in their study of opium use in three villages in Rajasthan in North West India. Where opium was smoked, it was administered in the form of a powder preparation known as *doda* mixed with cow or camel dung and smoked in a *cheelam* or clay pipe (Ganguly et al., 1995:10).

⁵This alcoholic tincture was developed by an English physician in the 1660s (Berridge and Edwards, 1987: xxiv)

vinegars and wines (Berridge and Edwards, 1987:24-25).

The detailed historical work of Virginia Berridge reveals that opium played a positive role in working class life in England during the nineteenth century. She also shows how more restrictive attitudes and practices emerged later in the century in parallel with the consolidation of the medical profession. It was only a short step to the disease model whereby “doctors became the custodians of a problem they helped to define” (Berridge and Edwards, 1987: 76). By the turn of the century, opiate users had been labelled as “deviant” and opium had been classified as a “problem drug”(Berridge and Edwards, 1987).

In the United States, opium smoking was common during the late 1800s. Smokeable opium was readily available in cities with large Chinese populations and was the first form of drug abuse to gain widespread public notoriety as its use spread from Chinese immigrants to whites (Morgan, 1974). Lacking the therapeutic veneer of opium and morphine addiction, smoking was seen as “alien and offensive” and “a ruinous vice, practiced by the irresponsible and the wicked” (Courtwright, 1982: 62-63). From the 1870s, medical opinion in both the US and Britain began to shift away from the mass prescription of opiates. The extent of opiate addiction declined from 313,000 in 1896 to 200,000 in 1924, dropping to an estimated 20,000 by the end of World War Two (McCoy, 1994:26-30).

During this period efforts to suppress opium smoking may have had counterproductive effects. In 1885 a noted physician wrote that “While the drug is used less frequently by the hypodermic method than by the mouth, the former method is gaining ground (Hull, 1885, in Morgan, 1974:36). The shift to injecting in the United States was cemented in 1909 with the passing of a federal law which effectively restricted the availability of smoking opium; many former smokers commenced injecting morphine or heroin (Courtwright, 1982). Half a century later, the introduction of anti-opiate laws in Hong Kong (1949), Thailand (1959) and Laos (1971) also saw opium smoking superseded by heroin smoking and injecting: these so-called ‘pro-heroin effects of anti-opium laws’ have been well documented in Asia (Westermeyer, 1976).⁶

Opiate use in Australia

Opium use has a long history in Australia, being used by the Chinese, Caucasian and indigenous populations since the mid 1800s. Opium is believed to have been introduced to Australia by the Chinese who came seeking their fortunes on the goldfields during the middle of the nineteenth century. According to Manderson (1993) the Chinese usually smoked the drug in specially outfitted opium “dens”. Caucasians, on the other hand, were believed to have taken the drug orally, in draught or subcutaneously. Among the Chinese, opium smoking appears to have occupied a position as a recreation, not unlike that of alcohol in contemporary Western societies.

⁶ As Berridge and Edwards have cautioned, expounding a direct cause-effect relationship between the prohibition of opium use and subsequent increase in heroin use is simplistic and ignores the impact of other factors. There are few doubts however, that “the sudden insult to old balances often contributed to bringing about a worse situation than the original” (Berridge and Edwards, 1987:267).

Opium dens were established in areas of Chinese settlement, and estimates of the extent of opium use vary widely depending on the location and source of information. For example, Gittins (1981) cites the widespread belief that 50-90% of Chinese goldminers were addicted to opium in the late 1850s and early 1860s, while Rolls (1992) cites a prevalence of up to 90%. Nevertheless, the practice was considered common in the literature (e.g., see Manderson, 1993). Attitudes towards the use of opium during this period are difficult to separate from prevailing racist sentiments directed against Chinese immigrants.

It is clear that some Chinese did develop problems with the drug, with a number being admitted to local asylums (Ryan, 1995). However, the perceived threat presented by “evil” Chinese immigrants luring unsuspecting young [Anglo]Australians into these “dens” and subsequently enslaving them into opium addiction, clearly over-rode concerns for the welfare of the Chinese community. While these reports are probably exaggerated, there is evidence of a minor diffusion of opium smoking to the European population, although the extent of use in either community remains unknown. While some reports claim that there were more European smokers than Chinese (e.g., see Lonie, 1979; McCoy, 1980), the reality is likely to be that in areas of Chinese settlement, a certain proportion of the local population engaged in the practice, with the Chinese constituting the majority of smokers (Lonie, 1979).

One interesting occurrence was the development of an opium smoking problem among the indigenous population, particularly in areas of Queensland and the Northern Territory, where there were concentrations of Chinese immigrants. Aboriginal labourers were paid in opium and the drug was commonly used as barter (Lonie, 1979; Manderson, 1993). Attempts were made to restrict opium use through legal regulation, and eventually legislation was passed which segregated the Aboriginal population in missions, removed their children, and banned them from using opium and alcohol.

A double standard evolved whereby heavy use of opium among the Caucasian population was sanctioned as “medicinal use” while Chinese and Aboriginal communities were subjected to more punitive measures, among them our earliest attempts at prohibition. The xenophobic underpinnings of Australia’s drug laws are evident in these late nineteenth century regulations which banned the importation of smoking opium but left the importation of other forms unregulated (Lonie, 1979). Many Chinese supported the new regulations in the belief that they would curb opium smoking within their community. However, Manderson (1993) eloquently summarised the prevailing view:

From being seen as a dirty habit in a dirty people, opium smoking came to be seen as an immoral habit in a hated people. It was a small step readily taken: from a symbol of depravity, opium became a cause of it; from a sign of evil, it became an active agent of it ... Clearly, the physical harm suffered by Chinese opium smokers was merely a side issue" (1993:24).

Opium smoking gradually declined throughout the twentieth century, although there were still reports of pockets of older Chinese smokers, particularly in the Chinatowns of major

Australian cities, until the 1970s (Delaney, 1979; Rolls, 1992). After World War Two, many of these ageing Chinese smokers in NSW were legally maintained on tincture of opium (Manderson, 1993).

The development of a heroin-using culture in Australia began in the early part of this century, where it was commonly included in patent medicines, and regularly used with (non-smokable) opium and morphine for "therapeutic reasons". By 1931 Australia was second only to New Zealand in terms of Western world heroin consumption (Lonie, 1979). Later in the same decade it was estimated that Australia consumed some 7.5% of the world's heroin (Manderson, 1993). While there had always been some diversion of the legal supply, following concerns over the development of a black market in the drug and a perceived heroin problem among youth in the early 1950s, heroin was unconditionally banned in Australia in 1954.

While illegal heroin had always been available, a major illicit market developed in the decade following prohibition. According to Davies (1986) and McCoy (1980), non-medical heroin use centred on the Chinese community in Sydney. The Chinese were also reportedly involved in the importation of heroin from Hong Kong, which was easier to conceal and cheaper than opium (Rolls, 1992). The increase in heroin use in the general Australian population in the late 1960s and early 1970s is commonly ascribed to the influx of US servicemen on rest and recreation leave, who brought their penchant for injecting heroin and smoking cannabis with them, and happily shared them with interested locals. While the market for injectable heroin was in all probability initially established to service their needs, recruits from the local population ensured its expansion by maintaining the demand for heroin after the Americans departed, particularly in the Kings Cross area of Sydney (Rolls, 1992).

Factors influencing routes of administration

History indicates that patterns of use and routes of administration are clearly sensitive to cultural, social, economic and law enforcement factors (Westermeyer, 1976). While 'traditional' patterns of drug use appear to be rapidly disappearing in some parts of South East Asia, in areas where it remains embedded in the socio-cultural fabric of local communities, opium use has been shown to be relatively benign (Ganguly et al., 1995). The respective popularity of particular modes of administration is then both culturally and historically specific; as is the harm or potentially adverse consequences associated with patterns of use. Rather than being determined by the inherent properties of particular substances, the rise and fall of preferred routes among particular populations is influenced by a matrix of social, cultural, economic and political variables.

Although there is a dearth of reliable epidemiological data on heroin use, recent research indicates a growing diversity of patterns of use in the developed world and several studies have sought to document what appears to be a diffusion of non-injecting routes of administration. Over the past decade increases in non-injecting use have been documented in the UK (Parker et al., 1988; Pearson et al., 1986; Griffiths et al., 1992), The Netherlands (Buning, 1990; Hartgers et al., 1991; Grund and Blanken, 1993; van Ameijden et al., 1994), Spain (de la Fuente et al., 1996), Switzerland (Haemmig, 1995), and the United States (Des Jarlais et al., 1992; Frank et al., 1992; Ouellet et al., 1995).

Ethnographic and qualitative studies have identified a number of socio-cultural factors which may influence the adoption of non-injecting routes of heroin administration. These include the social meaning of the chasing ritual, cultural proscriptions against injecting drug use and the fear of HIV infection (French and Safford, 1989; Des Jarlais et al., 1992; Grund and Blanken, 1993; Ouellet et al., 1995). While there is some evidence to suggest that, in the developed world, anti-injecting sentiment may be culturally specific, with some groups more likely to inject than others, for all groups the likelihood of injecting probably increases over time with continued use (Griffiths et al., 1994; van Ameijden et al., 1994).

The market characteristics of heroin (composition, price, purity, presence of adulterants) may also be important factors in determining the prevalence and patterns of heroin use. In many parts of the developed world, there has been a marked increase in the purity of heroin available for sale at the street level in recent years and a corresponding decrease in price. Although purity levels in the UK have remained relatively constant over the last decade (Strang et al., in press), the United States and Australia have experienced significant increases in purity during this period. In New York City, the average purity of street heroin increased from 7% in 1982 to 48% in 1991 with a decrease in the cost per milligram from \$1.35 to \$0.75 (United States General Accounting Office, 1992; see also Neaigus, 1996).

In Australia, data from the Australian Bureau of Criminal Intelligence (ABCI) indicates that the purity of heroin available at the street-level is rising (ABCI, 1994). Data obtained by NDARC from the NSW Drug Enforcement Agency indicate a mean purity level of around 50% for heroin seized in the state. Information on drug prices in NSW indicates a decrease in the average price paid for heroin during 1995 (O'Brien et al., 1996).⁷ A recent study which examined 322 samples collected by police in Cabramatta over a two year period found a mean purity of 59% (range 13-80%). Almost 80% of these samples had a purity of at least 50% (Weatherburn and Lind, 1995).

The diffusion of non-injecting routes of administration in the UK and Europe

In the UK and The Netherlands, there have been reports of a shift from injecting to chasing the dragon for more than two decades. Ethnographic research by Grund and Blanken (1993) distinguished a number of factors that accounted for the rapid dissemination of heroin chasing in The Netherlands. These included cultural factors, drug market factors, general socio-economic factors and socio-ecological factors. Heroin was introduced to The Netherlands in the early 1970s from the Golden Triangle by Chinese users, who had traditionally smoked the drug. A key feature of this diffusion was the role of young, impoverished, male Surinamese immigrants who began smoking heroin through their Chinese contacts, from whom they took over lower and middle level roles in the heroin distribution system.

While Grund and Blanken identified the importance of a Surinamese cultural taboo against penetration of the body with a foreign object, they also pointed out that the stable availability of base heroin at around 40% purity and a government policy of 'normalisation', encouraged

⁷ These data, obtained from the NSW Drug Enforcement Agency, indicate a drop in the average price of street grams from \$375 to \$325, a decrease in the average price of weighed grams from \$450 to \$375, and reductions from \$9,100 to \$7,850 and \$312,500 to \$175,000 for ounces and kilos respectively (O'Brien et al., 1996).

chasing. Stable patterns of heroin chasing among this population were also influenced by Surinamese isolation from mainstream Dutch culture and intense social control to maintain non-injecting behaviours. Users from other ethnic groups who were introduced to heroin by the Surinamese were virtually all smokers because of Surinamese control over access to the drug and, in particular, through their control of “house addresses” where social learning and peer pressure mechanisms sanctioned and sustained the chasing ritual and resulted in its adoption by other ethnic groups. By the 1990s, chasing was the dominant route of administration in The Netherlands (Grund and Blanken, 1993; see also Grund, 1993).

During the early 1980s, similar signs began to emerge in Britain. In some areas heroin chasing spread rapidly and by 1985, around 95% of the approximately 500 “new” heroin users on the Wirral Peninsula (Merseyside) were chasing the drug (Parker et al., 1988). The spread of chasing was confirmed by other research in the north of England which related regional variations in route of administration to whether pre-existing local drug subcultures favoured injecting or snorting amphetamine (Pearson et al., 1986; Pearson, 1987).

In the late 1980s, a high proportion of chasers were reported among users seen by the Maudsley Community Drug Team in London (Gossop, Griffiths & Strang, 1988). This study raised numerous questions about the establishment of patterns of use and the likelihood of movements between routes of administration. The London Transitions Study (Griffiths et al 1992, 1994a) addressed these issues by interviewing over 400 heroin users, evenly split between treatment and non-treatment sources. On a forced choice question, 54% reported that their primary route of use was injection and 44% reported chasing as their primary route. More than one third had made a transition lasting at least a month. Transitions were more likely among males and were more likely to be from chasing to injecting.

Over half (61%) of users who had initially chased had never made a transition to injecting. This group were younger, had used heroin for a shorter time, were less involved in the heroin subculture and were less likely to have Hepatitis B than their injecting counterparts. While these data support the conclusion that chasing is not merely a precursor to injecting, the longer heroin was used the more likely the user was to make a transition to injecting. Nevertheless, it was noted that many users may actually quit without proceeding to injecting. The authors speculated that reasons for choices of route centred on health factors and concerns about developing dependence.

Diffusion of injecting drug use in Asia

It is ironic that while the developed world appears to be embracing a greater diversity of routes of administration, parts of the less developed world, and South East Asia in particular, have experienced an explosion of injecting drug use (Stimson, 1993; McCoy, 1994; Thomas and Day, 1995). In many Asian cultures where smoking was a traditional means of opium use, this method carried over to the use of heroin (Ch'ien, 1983; Suwanwela and Poshyachinda, 1983). The smoking of heroin pills was documented in Hong Kong as early as the 1920s (Griffiths et al., 1994b). By the 1960s, "chasing the dragon" (which involved heating heroin and a base powder (daai fan) comprised of barbiturates on foil and inhaling the sublimate) and smoking heroin in cigarettes were common practices in Hong Kong (Mo and Way, 1966), Singapore (Leong, 1977) and Thailand (Suwanwela and Poshyachinda, 1983).

Increases in heroin use were documented in several South East Asian countries during the late 1960s and 1970s (Westermeyer, 1976, 1977). As McCoy has demonstrated, multilateral opium suppression efforts have had unpredictable negative consequences. In Thailand, the success of the United Nations Drug Control Program in reducing opium cultivation led to an increase in the price of opium smoking to 80 baht per day, compared to only 10 baht for heroin, thereby encouraging the shift to intravenous heroin use fuelling the current HIV/AIDS epidemic (1994:55).

Although smoking or sniffing opium and increasingly, heroin, remain significant modes of consumption in the Golden Crescent and some neighbouring countries, in many parts of Asia there has been a marked increase in injecting among populations which have traditionally used opiates by other means (Rana, 1996). As early as 1983, Suwanwela and Poshyachinda (1983) noted that in urban areas of Thailand "chasing the dragon" and smoking heroin in cigarettes were being supplanted by injection as users aimed to maximise the effects of the drug. In the far north of Thailand, there has been a rapid shift from smoking opium to injecting heroin among ethnic minority groups or hill tribes such as the Akha (Gray, 1996). Recent increases in injecting drug use have also been reported in Myanmar, Sri Lanka, Vietnam, the North Eastern states of India, Yunnan province in China, Laos, Malaysia and Nepal (Thomas and Day, 1995).

Asia is emerging as an epicentre of HIV infection. HIV and other blood borne diseases have become endemic in many Asian countries as injecting becomes more common (Wodak et al., 1993). Injecting drug users represent 29 percent of HIV cases in the Western Pacific region, the single largest category in the region (World Health Organization, 1995). Poverty, social marginalisation and ethnic minority status are strongly implicated in the spread of HIV infection among IDU in Asia (Thomas and Day, 1995).⁸ Injecting is now the primary route of administration in Hong Kong, Malaysia, Myanmar and Thailand (Thomas and Day, 1995). In some countries, the explosion of injection-related HIV infection occurred virtually overnight. In January 1988, the prevalence of HIV among injecting drug users (IDU) in Thailand was estimated as less than 1%. By September of the same year, prevalence exceeded 30%, with a monthly incidence of 4% (Thomas and Day, 1995; Rana, 1996).

In Vietnam, where the commercial sale of blood is a common means of income generation among IDU, 80% of all cumulative HIV cases and 96% of cumulative AIDS cases are IDU-related (WHO, 1995). Hong (1996) estimates that in 1994 there were 170,000 known drug users in Vietnam and more than 1,000 shooting gallery owners. While heroin is predominantly smoked in North Vietnam, injecting appears to be the dominant route of administration in the South. HIV seroprevalence among IDUs in some parts of the South approaching 50%, compared to less than 0.5% in the North (Hong, 1996).

⁸This is consistent with data from the United States which indicates that IDUs from racially/ethnically subordinated groups are at greater risk of HIV infection (e.g. Friedman et al., 1987, 1990; in press; Koblin et al., 1990; LaBrie et al., 1993). Conditions such as syphilis, tuberculosis, and infant mortality are also disproportionately prevalent among non-IDU members of racially/ethnically subordinated groups, including African Americans and Latinos in the US and Aboriginal and Torres Strait Islander peoples in Australia (Manton et al., 1987; Council on Scientific Affairs, 1991; Australian Institute of Health and Welfare, 1996).

A recent study conducted for the United Nations Drug Control Programme (Power, 1993) found high rates of HIV risk-taking behaviours among Vietnamese IDU. This study, which included ethnographic observations, a small number of in-depth interviews, and 120 questionnaires administered to IDUs in Hanoi and Ho Chi Minh City claims that actual heroin use is rare in Vietnam. Opium was the most commonly injected drug with “blackwater” opium (prepared from the residue of smoked opium) being the favoured preparation.

Illicit pharmaceuticals such as diazepam and phenobarbital were commonly mixed with the opium and injected. Most injecting drug use took place in shooting galleries where the dealer provided the opium solution - which was drawn from a communal pot - and the (glass) syringe, and often performed the injection as well. Sharing of syringes and drug solution was reportedly widespread and most respondents were not aware of the risk of infection through the sharing of injecting paraphernalia other than needles and syringes.

There is also some evidence to suggest that South East Asian refugee populations may be particularly susceptible to substance use (Westermeyer et al., 1989).⁹ Between 1988 and 1994 there was a rapid increase in intravenous heroin use among a population of restricted refugees in Hong Kong (Lulla and Harold, 1996). Almost all men (90%) in this particular detention centre/refugee camp were injecting heroin. Those without serious criminal convictions were reportedly detoxed prior to being sent to Australia and other countries for resettlement (Lulla and Harold, 1996). Anecdotal reports also indicate that some Vietnamese injectors in Hong Kong have dispensed with mixing containers when preparing heroin for injecting: they reportedly plug the end of a syringe with a filter, deposit the heroin, add water, shake and inject (Perry, personal communication, 1996).

The diffusion of non-injecting routes of administration in Australia

In Australia, injection has historically been considered the dominant route of heroin use, in all likelihood due to factors related to source, price and purity (Darke, Cohen, Ross et al, 1994). Nevertheless, in 1989 a study of 2500 injecting drug users in Sydney, Melbourne, Perth and Brisbane (Australian National AIDS and Injecting Drug Use Study, 1989) reported that 39% of the sample had smoked, snorted or swallowed heroin at some time. This figure dropped to 1% for non-intravenous use in the most recent typical using month, suggesting that non-injecting routes did not represent established patterns of consumption. A recent replication of this survey, which specifically asked about routes of administration, found that 80% of heroin users first used the drug intravenously and none reported smoking it on the first use occasion (Loxley et al., 1995).

There are few references to route of heroin use in Australia since the 1960s, although most sources describe injecting use. While there are some reports of Chinese smoking heroin

⁹A study of adolescent Vietnamese refugees in Melbourne (Minas and Klimidis, 1994) found that 10% had family members tortured or killed, 25% had family and friends injured during the war and between 35% and 45% had family and friends jailed or otherwise detained. The high incidence of traumatic events among this population has led researchers to speculate that many of these young people may be at risk of developing depressive illnesses and post-traumatic stress disorder (see also Clarke et al., 1993). These factors may also place them at risk of substance abuse.

during the 1960s (Davies, 1986), there is no published evidence of any previous major episode of heroin smoking in Australia. At best there are a few footnotes. Alfred McCoy (1980) refers to a heroin and cocaine sniffing craze in Sydney in the 1920s, and more recently, Stella Dalton described a 1970s practice of lacing "reefers" with heroin and LSD (McCoy, 1980:261). Hirst (1979) quotes from an interview with a heroin user in Melbourne, who described heroin use among first grade Sydney rugby league players, who would only ever snort or smoke the substance.

Reports of pockets of non-injecting use are consistent with anecdotal accounts from heroin users and clinicians who have been involved in various research projects at NDARC.¹⁰ While many have made mention of episodes and experiences of heroin sniffing or smoking, our ability to understand the beliefs, practices and patterns of heroin use associated with particular routes of administration, the meanings they hold for participants, and the factors influencing transitions between them, has been impeded by a lack of research specifically designed to address these issues.

There are signs that, in some areas and among some populations, things might be changing. Recent ethnographic research conducted among out-of-treatment heroin users in Cabramatta has documented the emergence of heroin smoking as a popular route of administration among young, recent recruits to heroin use (Maher, 1996a). More than half (59%) of this street-based sample¹¹ commenced heroin use by smoking the drug. New injectors were more likely than experienced injectors to report a transition from smoking to intravenous use.¹² More than two thirds (70%) of new injectors reported making this transition, compared to only 28% of more experienced injectors.

Preliminary analyses of these data suggest that a combination of social, cultural and environmental incentives are involved in the diffusion of heroin smoking and the transition to intravenous use. Young people who reported having made a transition to injecting couched their explanations for doing so in terms of drug effect, cultural and economic factors, social network composition, and environmental factors, including the emergence of a street-based injecting culture in the area (Maher, 1996b).

¹⁰ For example, the experience of one of the authors (LM) - based on interviews conducted with heroin users now in their late 30s and 40s in South West Sydney in 1995- indicates the existence of small pockets of heroin smoking associated with surfing cultures during the 1970s on Sydney's Northern Beaches and on the South Coast (Maher, unpublished data).

¹¹ Preliminary analyses (N=143) indicate that women accounted for just under half the sample, the mean age of participants was 21 years and almost two-thirds (64%) were from ethnic or cultural minority groups.

¹² New users (63%) were defined as those who had used heroin for two or less years with experienced users (37%) having used for more than two years. The majority of users (87%) were current injectors.

The literature reviewed here indicates that while there are signs of an increase in non-injecting routes of administration in the developed world, the less developed world may well be experiencing an increase in injecting. These developments are of particular importance in the context of the current debate in relation to non-injecting routes of administration and the feasibility of engineering putatively “healthy transitions” in the name of harm minimisation (e.g. Wodak, 1996; Wood, 1996)¹³. The findings of the present research should inform this debate by providing the first comparative study of Caucasian and Indochinese Australians and by examining the patterns and contexts of heroin use among these populations.

1.2 Rationale of the Study

Cabramatta has the dubious distinction of being Australia’s heroin capital. The thriving open-air drug market specialises in high grade heroin, the bulk of it imported from South East Asia. Recent data from the Australian Government Analytical Laboratories indicate that a heroin type named *Chinese Number 4* has been found to dominate the local market.¹⁴

Located some 30km south west of the Sydney city centre, Cabramatta is an area notable for a high population of migrants from several South East Asian countries, most notably, Vietnam.¹⁵ Cabramatta is part of the Fairfield Local Government Area (LGA) which has the highest number of overseas migrants and the most diverse ethnic community of any local government area in Australia (Fairfield City Council, 1995). More than half the population in the Fairfield LGA were born overseas (52%) with 48% from non-English speaking backgrounds. The area also has the largest concentration of young people aged 12-24 in any statistical division in New South Wales (Australian Bureau of Statistics, 1991). Almost two-thirds of these young people speak a language other than English and 46% were born overseas, compared to a state average of 17% (ABS, 1991). The unemployment rate in the Fairfield LGA (22%) is substantially higher than other local government areas in the South Western Sydney Area Health Service (SWSAHS) and almost twice the state average. In some age and ethnic groups - most notably among young people, and in the Vietnamese, Lebanese, Cambodian, Chinese and Aboriginal and Torres Strait Islander (ATSI)

¹³ However, heroin smoking may not be totally benign. A recent article in the New York Times (Wren, 1996) discusses the potential link between heroin chasing and a degenerative condition called leukoencephalopathy, which affects the brain's control of motor skills. Following two cases among New York smokers, and earlier cases in the Netherlands (e.g., see Ta et al., 1994), Italy, Norway and Spain, a number of theories are being advanced. These include the heroin becoming toxic when heated after being contaminated by the foil, or the toxic nature of dilutants added for sale.

¹⁴While the development of sophisticated ‘fingerprinting’ techniques utilising gas-chromatography and mass spectrometry have made it possible to identify the geographic origin of heroin, to date little attention has focussed on the composition or form of heroin. Neither police, clinicians nor drug users seem to be aware of these distinctions or their significance in terms of route of administration. The National Drug and Alcohol Research Centre has recently received funding from the NSW Drug and Alcohol Directorate to investigate heroin composition, purity and smoking efficiency using samples drawn from street-level seizures in South West Sydney.

¹⁵The Vietnamese community is the fourth largest non-English speaking background community in Australia (Klimidis and Minas, 1995).

communities - unemployment is endemic, with rates of four times the state average (Sullivan et al., 1995).

In terms of population health,¹⁶ data from the SWSAHS indicate that in 1993 the area had the highest rate of reported notifiable diseases in the state (477/100,000 compared to the state rate of 372/100,000). This was largely due to high rates of Hepatitis B (HBV) and Hepatitis C (HCV) notifications (1103 and 729 respectively). SWSAHS recorded the highest number of HBV notifications in the state in 1993. While HCV notifications increased dramatically from 332 in 1992 to 729 in 1993, Sullivan et al. (1995) note that this increase mirrors a statewide increase in notifications since testing was introduced in 1990. A total of 17 cases of AIDS and 22 cases of HIV infection were reported in 1993, which was below the state average. The number of AIDS-defining illnesses (CDC4-AIDS) in the region increased from 15 in November 1992 to 38 in August 1993. In 1992 and 1993 SWSAHS also had the highest number of TB notifications for any area or region in the state (Sullivan et al., 1995).

Despite ongoing publicity over drug use and crime in South West Sydney, and claims that "drug addicts and alcoholics in Cabramatta and Fairfield have no chance of rehabilitating themselves"¹⁷, there has been little research on the patterns and context of heroin use among the large Indochinese population in the area. Nor have attempts been made to investigate their treatment needs or expectations.

Non-English speaking communities are under-represented in existing research, and tend to under-utilise services (Jackson & Flaherty, 1994). Little is known about their treatment expectations and other health needs. These gaps in knowledge must be addressed before equity in service provision can be established. Given that eight percent of immigrants since 1991 have been Vietnamese (Castles, 1994), it is important that research is made more representative of the ethnic mix in Australia. While knowledge and use of alcohol and other drugs in the Vietnamese community has been examined, the low prevalence of illicit drug use uncovered by community surveys provides few insights into actual patterns of use (Bertram, Flaherty and Everingham, 1996).

A survey of "street frequenting" Vietnamese youth conducted by a drug and alcohol worker in Cabramatta in 1993 suggests a high prevalence of heroin and benzodiazepine use among street-frequenting Indochinese youth (Pham, unpublished data). More than half of these young people reported having tried heroin and 43 percent reported current use (defined as using it at least once in the three months prior to interview). Of this group, 60 percent used heroin at least once a day. Smoking was the dominant route of administration (70%) with only 25 percent of young people reporting that they "typically" injected the drug. More than half (53%) of those who reported current heroin use said that they had tried injecting with one-third of those who had ever injected indicating that they had shared needles "occasionally" and a further third reporting that they had shared needles once. A significant

¹⁶ The following data are taken from the excellent epidemiological profile of health in South Western Sydney prepared by Sullivan et al. (1995).

¹⁷ "No hope for addicts". Sun Herald, October 9, 1994. (Quoting Bob Carr, then Leader of the NSW Opposition)

minority (38%) also reported current use of benzodiazepines. At least one third (39%) of this group used benzodiazepines at least once a week and 13 percent reported daily use.

Ethnographic research (Maher 1996c) has documented similar patterns of drug use among young Indochinese heroin users in South West Sydney but with injection as the dominant route of administration.¹⁸ This study, based on 18 months of intensive fieldwork, repeated interviews and observations with street-based heroin users, found evidence of a strong negative stigma attached to injecting drug use in the Vietnamese community. Many young Vietnamese injectors strove to conceal the fact that they were using needles and many felt considerable confusion and guilt about their injecting use. These sentiments were supported by a cultural sensibility that young people described as the importance of 'face' in many South East Asian cultures. Young Vietnamese injectors also experienced higher levels of social isolation than their Caucasian counterparts. Young Vietnamese women were particularly likely to be estranged from both their families of origin and their non-injecting peers if they were identified as injectors.

A recent survey of drug use was conducted among a random sample of 246 students aged 12 to 21 years, attending a secondary school in South West Sydney (Liebman, 1996). The majority of students (93%) came from non-English-speaking backgrounds, predominantly Vietnamese and Chinese. While the prevalence of other drug use was lower than that reported in the 1993 NSW secondary schools drug use survey, approximately ten percent of male and three percent of female students had used heroin at some time, with 11 percent of 13 year old males reporting heroin use in the past year. The prevalence of male heroin use was twice that reported in the 1993 school survey. Smoking was the dominant route of heroin administration, with only six percent claiming to inject.

Finally, a recent study used peer-interviewers to interview 100 Vietnamese injecting drug users in Melbourne (Louie et al. 1996). Ninety-eight percent of this sample were male with a mean age of 29 years, and the majority (97%) were primary heroin users. Heroin was the first drug ever injected for 83 percent of the sample; the majority of whom reported first having used the drug by a non-injecting route of administration. Sixty-one percent had previously sought treatment for their drug use, with respondents having sought treatment an average of 4.5 times and the most frequent treatment experience being methadone maintenance (88%). However, services markedly under-utilised by this group included Needle and Syringe Exchange Programs (NSEPs) with 69 percent reporting that they never used NSEPs. While only 32 percent of the sample provided finger-prick blood specimens, all samples were found to be positive for HCV and 32 percent were found to be positive for HBV. None of the blood spots tested positive for HIV. This study found that overall, about 70 percent of the sample had a fair degree of knowledge and awareness about HIV/AIDS, its methods of transmission, and prevention measures (Louie et al., 1996).

1.3 Aims of the Study

¹⁸This difference may reflect an increase in intravenous heroin use amongst this group or, more likely, differences in sample selection techniques. Ethnographic informants were selected on the basis of their participation in open street-based scenes (for further details see Maher, 1996a).

This project was initiated in response to anecdotal reports of heroin smoking among clients, particularly Indochinese, at methadone maintenance clinics in South West Sydney. While heroin smoking or chasing is a common route of administration in The Netherlands and Britain, heroin users in Australia have almost exclusively injected. This observation raised the issue of potential differences in patterns of use between Caucasian and Indochinese heroin users in Sydney. If smoking was a widespread and well-established practice among Indochinese users, the potential for diffusion of smoking from this population to the wider Caucasian community, or conversely, the spread of injecting among Indochinese users, would provide comparative information to that emerging from the United Kingdom, Europe and North America.

Specifically, the study aimed to:

- (I) investigate patterns of heroin and associated drug use, including routes of administration of heroin and transitions between routes, among (a) Indochinese and Caucasian heroin users, who were (b) receiving methadone maintenance treatment or not in contact with treatment agencies;
- (ii) investigate the cultural and social context of heroin use, including beliefs about injecting and the cultural norms surrounding heroin use, with the view to estimating the likelihood of diffusion of injecting and non-injecting routes of use across distinct subgroups of users; and
- (iii) assess the treatment expectations and experiences of both groups, including the use of street methadone and experiences of managing and/or moderating heroin use without formal assistance.

2.0 METHODS

2.1 Procedure

The study involved interviewing 200 heroin users who were residents of South West Sydney. The sample comprised equal proportions of Caucasian and Indochinese heroin users; half the sample were currently in methadone maintenance treatment and half were not. All interviews were conducted by two interviewers: a Caucasian interviewer interviewed the Caucasian sample, and a bilingual Vietnamese interviewer conducted the Indochinese interviews.

All respondents were volunteers who were recruited by a variety of methods. The treatment sample (50 Caucasian and 50 Vietnamese) were primarily recruited from three methadone clinics in South West Sydney (one public and two private clinics). Recruitment in clinics was achieved by placing advertisements for the study in the clinic, and with the cooperation of staff, who maintained lists of interested clients and also asked clients if they wished to participate. As some of the Indochinese respondents felt uncomfortable about being interviewed in the clinic environment, many were recruited and interviewed in a non-treatment setting, after ensuring that they were receiving methadone. One (Caucasian) client was recruited from the psychiatric ward of Liverpool Hospital, where she was undergoing detoxification.

While the Caucasian interviewer worked in a treatment setting, the Indochinese interviewer was a youth/outreach worker and had extensive contacts with out-of-treatment Indochinese heroin users. Thus, it was decided to make use of the strengths of the interviewers, while attempting to recruit in as similar a way as possible. Therefore, recruitment was obtained through community services (e.g., an agency providing services and programs for young people and a secondary outlet for needle and syringe exchange), street intercepts, and snowballing through personal and ethnographic contacts. Interviews were conducted in a variety of settings, including restaurants, coffee shops, shopping malls, and street settings.

Respondents were assured of the anonymity and confidentiality of all data collected. The interviews took between 30 and 45 minutes to complete. Respondents were reimbursed \$20 for out of pocket expenses involved in the interview.

Some Indochinese respondents easily grew bored with the interview, and were more likely than their Caucasian counterparts to refuse to answer certain sections, such as the questions on crime, health and the qualitative component of the interview.

2.2 Survey Instrument

The interview consisted of a structured questionnaire based on the transitions questionnaire used in the Sydney Amphetamine Transitions Study (Darke, Cohen, Ross et al, 1994), which itself was a modification of that used in the London heroin transitions study (Griffiths et al, 1994a). Modifications were made and additional items included following discussions within the project team and after consultation with two Vietnamese drug and alcohol workers. The format was primarily quantitative, with a section of qualitative, exploratory questions

included at the end of the interview. The areas addressed by the interview were:

SECTION 1: QUANTITATIVE

Demographics: recruitment source, gender, age, country of birth, parents' country of birth, length of residence in Australia, postcode of residence, years of school completed, post-school qualifications, employment status, main income source, number of children, utilisation of community services and English fluency.

Drug Use History: Drugs ever used, first drug injected, age first injected, context of first injection.

Heroin Use: Age and route of first heroin use, age began regular (weekly) heroin use, age of first heroin injection, most common route of use. Information was obtained on whether respondents had ever made a transition (defined in accordance with the London heroin transition study as a change in route for 1 month or more) between routes of heroin use, and the number of transitions made. Information was also obtained on reasons for use patterns, route of use in the last six months, and likelihood of changing route of administration.

Current Drug Use: Information on drug use in the last month was obtained using the drug section of the Opiate Treatment Index (OTI) (Darke et al, 1992). Thus, information was elicited on the use of heroin, other opiates, alcohol, cannabis, amphetamine, cocaine, benzodiazepines, barbiturates, hallucinogens, inhalants and nicotine.

HIV Risk-taking Behaviour: The HIV Risk-taking Behaviour Scale (HRBS) (Darke et al 1991), a module of the OTI, was used to measure risk involved in needle use in the last month. Specifically, this asked questions about frequency of injecting use, borrowing and lending of injecting equipment, and cleaning of injecting equipment before re-use, including the use of bleach.

Heroin Dependence: Dependence was measured in the last year using the five item Severity of Dependence Scale (SDS) (Gossop et al, 1992). This instrument asks respondents to rate how much they were bothered about various aspects of their heroin use. Scores range from 0 to 15, with higher scores indicating greater severity of dependence. The SDS has been shown to have good psychometric properties in a variety of studies with different illicit drug-using populations (Gossop, Darke, Griffiths, et al., 1995).

Social Context: This was measured using the social subscale of the OTI, and investigated level of heroin involvement, and where heroin was used.

Crime: Criminal activity was measured in the last month using the crime subscale of the OTI. This measures involvement in property crime, dealing, fraud and crimes involving violence, as well as charges currently being faced. Respondents are asked to rate their frequency of involvement in each of the categories in the last month.

Health: Health in the last month was measured using the health subscale of the OTI. Respondents are asked to state if they had experienced any problems in a number of areas: general health, injection-related symptoms, cardio/respiratory, genito-urinary, gynaecological (women only), musculo-skeletal, neurological and gastro-intestinal. A total score was

calculated by summing the total for each of the health subscales. Additional questions on heroin overdose were asked in light of recent research on the frequency and context of this problem (Darke et al., 1996a; Zador et al., 1996; for a review of this issue see Darke and Zador, 1996) and to investigate the relationship between route of administration and overdose risk.

Treatment History: Respondents were asked what program they were currently attending, if any, and what types of programs they had previously attended.

SECTION 2: QUALITATIVE

Heroin Smoking: A series of exploratory questions were asked to investigate the contexts of heroin smoking. Thus, questions investigated the ethnicity of heroin smokers known to the respondents, the respondent's first smoking experience, terms used to describe heroin smoking, methods used by other heroin smokers, reasons for ways of smoking, and perceived differences between smokers and injectors.

Street Methadone: As little is known about drug use in the Indochinese community, respondents were asked to discuss their use of street methadone, in order to investigate whether its use was as prevalent as in the Caucasian community. Questions investigated whether the respondent had ever used it, how much it cost and how easy it was to get, the reason for use, route of use, and reason for route of use.

Moderating Use: As little is known of attempts to moderate use among Indochinese heroin users, respondents were asked if they had ever tried to stop or cut down their heroin use without the aid of a treatment service, the way they tried to do this, and how successful they were. As a home detox service was being established in the area, respondents were asked if they had ever heard of such a technique, and if they would be interested in trying it.

2.3 Translation

The interview was translated into Vietnamese, and then back-translated to English by separate Vietnamese translators, accredited by the NSW Health Department. Names of drugs and slang terms were checked during the back-translation process, and by the interviewer. The translated interview was pilot-tested on six Indochinese heroin users. The Vietnamese interviewer was provided with instructions for explaining any difficult terms arising from the translation. Some concepts, such as "overdose", for which there appears to be no Vietnamese equivalent, were commonly used and understood in English, making translation unnecessary.

2.4 Statistical Analyses

Descriptive analyses are presented for all major variables. Percentages are reported for categorical variables; means and medians are reported for normally distributed and skewed continuous variables, respectively. A number of univariate comparisons of major variables of interest are reported: unadjusted odds ratios (OR) and their corresponding 95% confidence

intervals (95% CI) for categorical data, and t-tests or Pearson's product moment correlations (or the non-parametric equivalent for skewed data) for continuous variables.

A limited number of multivariate analyses (multiple linear regressions for continuous and logistic regressions for categorical outcome variables) were conducted to investigate major questions of interest. These analyses examined: demographic and drug use variables associated with ethnicity; and predictors of dependence, HIV risk-taking and overdose. Due to the relatively small sample size, analyses were limited to an examination of potential confounders identified from the previous literature and univariate analyses. The logistic regression models used backward elimination of variables according to the Likelihood Ratio Test (Hosmer and Lemeshow, 1989). Analyses of the residuals of the multiple linear regressions were conducted to test for assumptions of normality.

A principal components analysis (PCA) was also performed to examine the factor structure and psychometric properties of the SDS in this sample of heroin users. All analyses were conducted using SPSS for Windows (Release 6.0).

3.0 RESULTS

3.1 Sample characteristics

3.1.1 Demographics

Subjects were recruited from the South Western suburbs of Sydney, primarily Liverpool, Cabramatta, and adjacent suburbs.

The sample comprised 200 heroin users, equally divided among respondents of Caucasian (n=100) and Indochinese (n=100) ethnicity (see Table 1). The mean age of the sample was 26 years; the Indochinese were significantly younger than the Caucasian respondents (23 vs 29yrs; $t_{177}=6.1$, $p<0.0001$). The majority of the sample was male (72%), with little difference between the two groups in the proportion of females interviewed.

Just under one half of the sample (45%) was born in Australia. While the majority of Caucasian respondents (87%) were born here, 99 percent of the Indochinese sample were born overseas, predominantly in Vietnam (95%), with the remainder from Laos (3%) and Cambodia (1%). Overseas-born Caucasian respondents were generally born in New Zealand, the United Kingdom or European countries. The average length of residence in Australia for overseas-born respondents was 12 years, with the Caucasian sample having been resident for significantly longer than the Indochinese (27 years versus 10 years; $t_{12}=6.2$, $p<0.001$). All of the Indochinese sample's parents were born overseas, while the majority of the Caucasian group's parents were Australian born (68%).

While all but one of the Caucasian sample spoke fluent English, this was the case for only 16 percent of the Indochinese group. Nevertheless, all of the latter group spoke some English, with 40 percent speaking it quite well, and 44 percent speaking a little. Subsequently, the interview was conducted in English and/or Vietnamese. While all the Caucasian group were interviewed in English, the Indochinese group were interviewed in English only (11%), Vietnamese only (55%) or a mixture of the two (34%).

Respondents had completed an average of 10 years of schooling, with 39 percent having completed 10 years and 13% having completed 12 years. While few (21%) had completed qualifications since leaving school, the Caucasian sample were significantly more likely to possess such qualifications than the Indochinese (37% vs 4%; unadjusted OR=14.3, 95%CI=4.8, 57.3; $\chi^2_1=33.87$, $p<0.0001$). Most commonly, this qualification was trade/technical in nature (19%); only two percent of the sample had a university or college qualification.

Table 1: Demographic characteristics of 200 heroin users (100 Caucasian and 100 Indochinese).

N	Total	Caucasian 100	Indochinese 100
	200		
Age in Years (mean)	26	29	23
Gender (% male)	72	69	74
Country of Birth (%)			
Australia	45	87	1
Vietnam	46	0	95
Months of residence (overseas-born; mean)	148	328	126
Years of school completed (mean)	10.0	9	10
Qualifications (%)			
school only	79	63	96
trade/technical	19	35	2
university/college	2	2	2
Current Employment Status (%)			
unemployed	83	76	90
fulltime employment	6	5	6
pt/casual employment	5	7	2
student	3	3	2
home duties	5	9	0
Main source of income (%)			
employment	7	7	7
unemployment benefits	69	57	81
other govt. benefit	14	25	2
crime	3	5	0
family	3	5	0
no income	6	1	10
% in a relationship	46	57	33
% with children	36	60	11
English proficiency (%)			
very well/fluent	58	99	16
quite well	20	0	40
only a little/not well	23	1	44
not at all	0	0	0

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The majority of the sample was unemployed (83%), and income was most commonly from government benefits (83%). Most Indochinese received their income from unemployment benefits (81% vs 57% of Caucasians), while the Caucasians were more likely to be in receipt of other government benefits (25%).

Nearly half the sample (46%) were in a relationship, with the Caucasian sample significantly more likely to have a partner than the Indochinese (57% vs 33%; unadjusted OR=2.5, 95%CI=1.4, 4.7; $\chi^2_1=10.3$, $p=0.001$). Approximately one third (36%) had children, and this was much more common among the Caucasian respondents (60% vs 11%; unadjusted OR=12.1, 95%CI=5.5, 27.5; $\chi^2_1=52.4$, $p<0.0001$).

3.1.2 Treatment history/Service utilisation

Fifty percent of the sample was currently in a treatment program (methadone maintenance for all but one person) (see Table 2). Just under half (43%) had no previous treatment experience; the Caucasian sample were significantly more likely to have a treatment history than the Indochinese (74% vs 40%; unadjusted OR=4.3, 95%CI=2.3, 8.3; $\chi^2_1=23.6$, $p<0.0001$). The treatment services most frequently attended previously were detoxification (35%), methadone programs (34%) and 12-step programs (Narcotics Anonymous) (26%). The Indochinese were less likely to have previous treatment experience and they had also been to fewer types of programs, primarily detoxification and methadone programs. Of those not currently in treatment ($n=100$), 35 percent had no treatment experience at all, and again, this was much more common among the Indochinese (54% vs 16% of Caucasian). These figures compare to the findings of Louie et al. (1996), who found that 61 percent of the Vietnamese injecting drug users they studied had previously sought treatment for their drug use.

The Indochinese had less contact with services in general. In the last year more than half of both groups had contact with a doctor and the Commonwealth Employment Service (CES). However, the Caucasian group were more likely to have utilised most services, except for religious services, social workers, the CES and migrant services. There was a significant difference between the groups in total number of services utilised (mean of 3.4 vs 2.6; $t_{198}=3.5$, $p=0.001$).

Table 2: Treatment history and service utilisation of Caucasian (n=100) and Indochinese (n=100) heroin users

	Total	Caucasian	Indochinese
N	200	100	100
Previous treatment (%)	57	74	40
detoxification	35	49	21
methadone	34	43	24
residential	15	28	1
outpatient counselling	14	25	2
12 step	26	49	2
In last year, contact with... (%)			
doctor	81	87	74
community health	17	24	9
hospital	39	45	32
phone counselling	2	3	0
church	27	24	30
social worker	29	26	31
psychologist	31	55	7
CES	67	61	72
community services	11	17	5
migrant service	2	0	3
Number of services contacted (mean)	3	3.4	2.6

3.2 Heroin use

The mean age of first heroin use was 19 years, with regular (monthly) use commencing at 21 years (see Table 3). There was no difference between the groups in average age of first heroin use ($t_{198} = -1.2$, $p = 0.23$) or regular heroin use ($t_{198} = 1.2$, $p = 0.23$).

Differences emerged in the route of first and typical heroin administration. One half of the sample (51%) had injected heroin at first use, and this was more common among the Caucasian group (73% versus 28%; unadjusted OR=7.0, 95%CI=3.6, 13.6; $\chi^2_1 = 40.5$, $p < 0.0001$). The remainder had used non-injectable routes - 36 percent smoking/chasing, 11 percent "snowcones" (heroin mixed with marijuana) and 3 percent snorting.

Table 3: Heroin use history of 200 heroin users.

	Total	Caucasian	Indochinese
N	200	100	100
Age first heroin use (mean)	19	19	20
Age weekly heroin use (mean)	21	21	20
Route of first heroin use (%)			
injected	51	73	28
smoked/chased	36	14	58
"snowcones"	11	9	13
snorted	3	4	1
Most common route (%)			
injected everytime	39	52	26
injected most times	39	44	34
injected half the time	1	0	1
smoked most times	3	2	4
smoked everytime	19	2	36
Age first heroin injection (mean)	19	19	20

While injecting was the most common route of administration for both samples, a greater proportion of the Indochinese sample had smoked heroin, and they were more likely to smoke on a regular or exclusive basis. Thus, while 96 percent of the Caucasians were exclusively or predominantly injectors, this was the case for only 59 percent of the Indochinese sample. In comparison, 40 percent of the Indochinese respondents were predominantly or exclusively smokers. One person claimed to use both routes equally often.

Approximately one quarter of the sample (29%) had made a transition between routes of administration, primarily from smoking to injecting. It was more common for this transition to have been made among the Indochinese than Caucasian, largely because many more Indochinese commenced their heroin use by smoking; but this difference was not significant (34% vs 24%; unadjusted OR=1.6, 95%CI=0.8, 3.2; $\chi^2_{1}=2.40$, $p=0.12$). In general, people who had made a transition had made only one transition from chasing to injecting.

The average age of first injection of any drug and of heroin was 19 years. Heroin was the drug most commonly injected first. While all Indochinese injectors had commenced injecting with heroin, 28% of the Caucasian injectors had commenced with amphetamine. While there was no significant difference between the two groups at age of first injection, those who had commenced injecting with amphetamine had commenced injecting at a significantly younger age than those who had not (mean of 17 vs 19 yrs; $t_{122}=3.2$, $p=0.002$).

The majority of the sample (88%) were injected by somebody else the first time (see Table

4). More than half the sample felt uncomfortable (38%) or very uncomfortable (28%) during this experience. The Indochinese group were nearly twice as likely to claim they felt comfortable or very comfortable during this experience than were the Caucasian group (50% vs 26%). However, it may be that the Indochinese respondents' understanding of the word "comfortable" may be different from the Caucasian sample: for example, "comfortable" may have been associated with or interpreted as "drug effect" by the Indochinese.

Table 4: Characteristics of first injection of those who had ever injected (n=163)

	Total	Caucasian	Indochinese
N	163	98	65
First drug injected (%)			
amphetamines	28	46	0
opiates	71	52	100
other	1	2	0
Age first injection (mean)	19	18	20
Who first injected (%)			
self	12	10	16
others	88	90	84
Feelings about injection (%)			
very comfortable	5	4	5
comfortable	30	21	45
uncomfortable	38	37	39
very uncomfortable	28	38	11
Who taught injection (%)			
friend/peer	57	33	98
partner	7	10	2
older/experienced user	24	37	0
other	12	20	0

The injecting technique was most frequently taught by a friend or peer (57%) or by an older, more experienced user (24%). The Indochinese had learnt almost exclusively from a friend or peer (98%), while the Caucasian group had a wider range of instructors.

3.3 Routes of use

Information on route of administration is presented in Table 5.

3.3.1 Exclusive smoking/injecting

Approximately 19 percent of the sample had only ever smoked or chased heroin, with all but two being Indochinese. The two main reasons provided for exclusive smoking were dislike or fear of injecting, including a perceived lack of hygiene (87%), and the belief that smoking was less addictive and that heroin would be harder to quit if it was injected (35%). One in ten exclusive smokers expressed a fear of overdose (11%).

Approximately a third (39%) of the sample had only ever injected heroin, with this route most common among the Caucasian group. The main reason given for the choice of this route was that injecting was more efficient, provided a quicker and better effect ("rush"), and it was more cost effective (49%). Approximately one third of this group (36%) also said that they did not know of other methods, or that injecting was the norm, while one quarter (28%) felt other ways were a waste and too expensive. The Indochinese injectors reported that they liked the effect of injecting (75% of exclusive Indochinese injectors) or that they did not know any other way (46%), while the Caucasian injectors provided a greater variety of reasons for injecting.

3.3.2 Transition from smoking to injecting/injecting to smoking

One quarter of respondents had made a transition from smoking to injecting (29%), with this occurrence marginally more common among the Indochinese (34% versus 23% of the Caucasian sample). Very few Indochinese gave a reason for their transition. Among the Caucasian sample, reasons for a transition were predominantly the claim that injecting produced a better drug effect (61% of those who had made a transition), and the desire to experiment (17%). Several "other" reasons were provided (22%), such as injecting being the route of administration of partners and peers, the belief that they were (already) addicted and the belief that injecting may turn them off heroin. Of the nine Indochinese that provided a reason, the majority made a transition because of the perceived superior effects obtained from injecting.

Only three percent of respondents had made a transition from injecting to smoking, and these were all Caucasian respondents. The reasons provided were primarily situational factors, including availability of smokeable heroin (for instance, overseas), being with smoking peers, or a lack of opportunity to inject (for example, where there were no implements, such as in gaol).

3.3.3 Other routes

Just over one in ten respondents (14%) claimed they mainly injected heroin, but occasionally smoked it. Caucasian respondents were twice as likely as Indochinese to report this behaviour (19% versus 8%). The reasons provided were primarily situational, such as being with smokers, availability of free heroin, absence of injecting equipment or the desire for experimentation. Most respondents claimed they only did so occasionally because injecting provided a better "rush" and was perceived to be more cost-effective. Few were predominantly smokers who engaged in an occasional injection (3%). This pattern of use was equally unlikely among both groups.

3.3.4 Route of use in last 6 months

As noted previously, only 6 percent of the sample had not used heroin in the past six months. The most common route of use during this time was injecting (65%), particularly among Caucasian users (74% versus 55%). One third of the Indochinese (38%) had exclusively smoked, compared to only 2% of Caucasians. Ten percent of the sample had used both routes, with this marginally more common among the Caucasian users (13% vs 7%).

Only 3 percent of the sample (6 people) felt they were quite likely or very likely to change to exclusively smoking heroin, while 76 percent said such a change was unlikely (the remainder were already exclusively smoking). The major reasons provided for wanting to make such a change were: that it would be safer because of a decreased risk of contracting infectious disease, or because it did not involve puncturing the skin.

Five percent of the sample said they would be likely to change to injecting heroin exclusively (10 people), with 22 percent saying this was unlikely (the remainder were already exclusively injecting). The major reasons for wanting to change to injecting were primarily associated with the rush and the increased effect.

Table 5: Transitions between route of heroin administration of 200 heroin users (%).

	Total	Caucasian	Indochinese
N	200	100	100
Transition between routes	29	24	34
Smoked only	19	2	36
Reason (n=37)			
afraid/ injecting dangerous	87	50	86
don't want to OD	11	50	6
less addictive/easier to quit	35	0	37
other	11	0	2
Injected only	39	52	26
Reason (n=76)			
otherwise waste/too expensive	28	35	13
immediate effect/rush/efficient	49	37	75
needle addiction	7	10	0
only way I know/the norm	36	31	46
other ways aversive	7	10	0
quick/convenient	3	2	4
other	9	14	0
Transition to injecting	29	23	34
Reason (n=32)			
better rush/stone/cost-effective	63	61	--
quicker/easier/convenient	6	9	--
curiosity/experiment	13	17	--
tolerance to smoking	9	9	--
situational factors	6	9	--
other	31	22	--
Transition to smoking	3	5	0
Route in last Six Months			
injected only	65	74	55
smoked only	20	2	38
injected and smoked	10	13	7
no use	6	11	0

3.4 HIV risk-taking

The average score on the injecting drug use subscale of the HRBS was 4.3 (see Table 6). A number of comparisons were made based on the previous literature. There were no significant differences in mean score by ethnicity ($t_{191}=0.9$, $p=0.4$) or gender ($t_{191}=-0.2$, $p=0.9$). Significantly higher scores were obtained by those not currently in treatment (5 vs 3.7, $t_{191}=2.13$, $p=0.04$), while higher dependence scores on the SDS were associated with higher injecting risk ($r=0.3$, $p<0.005$).

Approximately half the injectors (47%) were injecting less than daily, with the remainder injecting at least once a day. A greater proportion of the Indochinese injectors were injecting heroin at least daily (71% vs 39% of Caucasian injectors).

One in ten injectors (11%) had used a needle after someone else in the last month, primarily no more than once or twice, or after more than one person. These were either close friends (67%) or sexual partners (33%).

It was more common for the respondent to have lent their needle to someone else to use (19%), usually once or twice. These people were primarily close friends (58%), sexual partners (21%) or acquaintances (13%).

Just under half the sample (45%) claimed not to re-use their needles, while 42 percent said they cleaned their equipment everytime before re-use. Only 1% said they never cleaned their needles in this situation. There was more variability in the answers provided by Indochinese injectors, who seemed less likely to clean and did so less frequently. Bleach was not widely used to clean needles, with 23 percent claiming that they never used it, and only 16 percent reporting that they used it everytime.

A multiple linear regression of total injecting risk score among those who had injected in the last six months was conducted, using predictor variables of age, gender, years of school completed, number of drug classes ever used, ethnicity, dependence score and treatment status. The final model ($F_{4,134}=11.8$ $p<0.0005$) accounted for approximately one quarter of total variance (26%). Number of drug classes ever used ($B=0.8$, $p<0.0005$), ethnicity ($B=4.7$, $p<0.0005$), treatment status ($B=-1.8$, $p=0.004$) and dependence score ($B=0.3$, $p=0.008$) were independently associated with injecting risk score after adjusting for all other variables. Thus, injecting risk-taking scores were higher among Indochinese respondents, those who were not in treatment, those who had used a greater number of drug classes, and those who had higher dependence scores.

Table 6: Injecting practices and HIV risk-taking in the month prior to interview among current injectors (n=140) (%).

Variable	Total	Caucasian	Indochinese
N	140	81	59
Frequency of injecting			
weekly or less	21	31	7
weekly to <daily	26	30	22
once a day	14	15	12
2-3 times a day	26	16	39
>3 times a day	14	9	20
Times used a needle after someone else			
no times	89	89	90
once	4	4	5
twice	3	4	2
3-5 times	1	1	2
6-10 times	1	3	0
>10 times	1	0	2
Number of people who used a needle before subject			
none	89	89	90
1 person	10	11	9
2 people	1	0	2
Times someone used a needle after subject			
no times	81	82	81
once	9	7	10
twice	6	7	5
3-5 times	2	3	2
6-10 times	1	1	2

3.5 Severity of dependence

The mean SDS score was nine (9) (see Table 7). The Indochinese had significantly higher scores than the Caucasian respondents (9 vs 8, $t_{159}=-2.2$, $p=0.03$), while those not in treatment scored more highly than those on methadone (10 vs 8, $t_{196}=3.2$, $p=0.002$).

Using the suggested cutoff of 4 (Hando and Hall, 1994), where those scoring above 4 are classified as dependent, the majority (88%) of the sample met dependence criteria. The Indochinese group were significantly more likely to be classified as heroin dependent (unadjusted OR=13.5, 95%CI=3.1, 121.1; $\chi^2=18.5$, $p<0.0001$), as indicated by their

significantly higher scores, although because only two of the Indochinese group did not meet dependence criteria, the confidence intervals are extremely wide. Despite higher dependence scores, those who were not currently in treatment were no more likely than methadone clients to be classified as dependent. However, as the upper bound of the confidence interval was large, it would be unwise to categorically exclude the role of treatment status (unadjusted OR=2.7, 95%CI=1.0, 7.5; $\chi^2=4.5$, $p=0.03$).

There was also no significant effect of route of use, with those who had smoked in the last 6 months no more or less likely to be classified as dependent than those who had not (unadjusted OR=1.3, 95%CI=0.4, 5.6; $\chi^2=0.1$, $p=0.72$). This is also reflected in the lack of difference in average SDS score ($t_{183}=-0.05$, $p=0.96$), although again it is unwise to exclude the effect of route of use given the small sample size and the size of the upper bound of the confidence interval.

A limited set of variables were entered into a multiple linear regression to predict severity of dependence, as indicated by the total SDS score. These were: age, gender, years of school completed, number of drug classes ever used, ethnicity, treatment status, whether heroin had been smoked in the past 6 months, and age of commencing regular heroin use. The final model ($F_{5,180}=8.5$, $p<0.0005$) accounted for 19 percent of the total variance in outcome. Total SDS score was independently associated with being female ($B=-1.7$, $p=0.002$), having completed more years of school ($B=0.5$, $p=0.002$), having used a greater number of drug classes ($B=0.4$, $p=0.005$), being Indochinese ($B=2.4$, $p=0.002$) and not being in treatment ($B=-1.9$, $p=0.0002$).

A principal components analysis was performed on the five items comprising the SDS to investigate its factor structure in this population. The analysis produced one factor, as expected, which accounted for 54.7 percent of the variance. Factor loadings on items ranged from 0.65 (for item 5) to 0.81 (for item 1). Factor loadings decreased from items 1 to 5. Cronbach's alpha was 0.79. These findings indicate the SDS had good psychometric properties in this sample.

Table 7: Dependence in the last year as measured by the SDS (n=200) (%).

	Total	Caucasian	Indochinese
N	200	100	100
Felt heroin use out of control			
never/almost never	18	28	8
sometimes	31	25	38
often	26	12	41
always/nearly always	24	35	13
Anxious at missing smoke/shot			
never/almost never	16	30	2
sometimes	24	26	21
often	31	11	52
always/nearly always	29	33	25
Worry about heroin use			
not at all	9	14	3
a little	25	24	27
quite a lot	44	34	56
a great deal	22	28	15
Wished could stop			
never/almost never	8	15	0
sometimes	17	13	21
often	35	20	50
always/nearly always	40	52	29
Difficulty stopping/going without			
not difficult	17	27	7
quite difficult	24	28	20
very difficult	49	35	63
impossible	10	10	9
Dependent (score of 5 or more)	88	78	98
Total SDS Score (mean)	9	8	9

3.6 Other drug use

Polydrug use was common among this sample of heroin users, although it was more common among the Caucasian group (see Table 8). More than 50% of both samples had ever used alcohol, cannabis, and tobacco, while at least this proportion of the Caucasian group had also used the majority of other drug classes. The only additional drugs used by at least one third of the Indochinese group were opiates other than heroin (street methadone) and benzodiazepines. Including heroin, the sample had ever used a mean of 6 drugs; the Caucasian group having used twice as many drug types as the Indochinese group (mean of 8 vs 4 drug classes; $t_{187}=16.2$, $p<0.0001$).

An average of three drugs (including heroin) had been used in the last month, again, with polydrug use more common among the Caucasian group (mean of 4 vs 3 drug classes; $t_{156}=6.8$, $p<0.0001$). Only 6% of the sample had not used any heroin in the last 6 months - these were all Caucasian methadone clients.

3.7 Correlates of ethnicity

A logistic regression was conducted to examine whether differences in drug use between the Caucasian and Indochinese samples could be explained in terms of basic demographic or drug use variables. For example, could these differences be largely attributed to the fact that the Indochinese sample were significantly younger than the Caucasian sample? In other words, could ethnicity be confounded by variables such as age?

The following variables were examined: age, gender, years of school completed, whether ever smoked heroin, number of drug classes ever used, and number of previous treatment experiences. The final model ($\chi^2=166.6$, 4df, $p<0.0005$) revealed that differences could not simply be attributed to age, with the following variables independently associated with ethnicity: age ($\chi^2_{\text{WALD}}=11.2$, 1df, $p<0.001$), gender ($\chi^2_{\text{WALD}}=6.2$, 1df, $p=0.01$), years of education ($\chi^2_{\text{WALD}}=4.2$, 1df, $p=0.04$) and number of drug classes ever used ($\chi^2_{\text{WALD}}=41.6$, 1df, $p<0.0005$). Thus, after adjusting for all other variables, the Indochinese were significantly younger (adjusted OR=0.8), less likely to be female (adjusted OR=0.4), had completed significantly more years of school (adjusted OR=1.5) and had used significantly fewer drug classes (adjusted OR=0.3) than the Caucasian sample.

Table 8: Use of other drugs in lifetime and month prior to interview among 200 heroin users (%)

	Total	Caucasian	Indochinese
N	200	100	100
Opiates			
ever use	54	63	44
last month	10	14	6
Alcohol			
ever use	78	97	59
last month	32	51	12
Cannabis			
ever use	82	97	67
last month	51	68	33
Amphetamine			
ever use	51	93	7
last month	4	7	0
Cocaine			
ever use	34	63	5
last month	4	7	0
Benzodiazepines			
ever use	58	77	39
last month	20	34	6
Barbiturates			
ever use	16	20	12
last month	1	0	1
Hallucinogens			
ever use	42	76	6
last month	1	1	0
Inhalants			
ever use	20	40	0
last month	1	1	0
Tobacco			
ever use	97	97	96
last month	92	94	90
No. of drugs ever used (mean)	6	8	4
Drugs used last month (mean)	3	4	3

3.8 Social context

In general, the Indochinese seemed to be more heavily involved in a social scene which included heroin use (see Table 9).

The majority of respondents (94%) associated with people who used heroin, or if in a relationship, had a heroin-using partner (74% of partners). Although injecting was the most common route of use among friends (98% of heroin-using friends) and partners (62% were exclusive injectors), the Indochinese were more likely to report heroin smoking by their partner and less frequent injecting among their friends.

All but one of the Indochinese spent at least some of their free time with other heroin users (99% vs 71% of Caucasians), with twice as many Indochinese spending all of their time with other heroin users (19% vs 7%). However, a greater proportion of Indochinese had used alone at least half the time in the last 6 months than their Caucasian counterparts (68% vs 43%). More than one quarter of the Caucasian sample (29%) had always used heroin in company (as against none of the Indochinese).

The most frequent locations of heroin use in the last six months were at home (80%) or a friend's place (48%). However, use in a car (36%) or public place (45%) was also very common. Public places included the stairwells of blocks of flats, telephone booths, the street, trains and public toilets. When asked where they mainly used heroin, 63% reported using at home, with public places the next most common location (25%). A greater proportion of Caucasian respondents had used in public places in the last six months, or claimed that they mainly used in public.

Table 9: Social context of heroin use among 200 heroin users (%)

	Total	Caucasian	Indochinese
N	200	100	100
Regular partner's use			
injects	28	46	10
smokes	5	0	9
both	1	0	2
doesn't use	12	11	13
no reg. partner	54	43	66
Friends' heroin use			
none	6	11	1
less than half	30	41	19
about a half	17	22	11
more than half	27	17	36
all of them	21	8	33
Heroin-using friends' injecting			
none	2	1	2
less than half	8	2	13
about a half	10	6	13
more than half	33	5	59
all of them	47	86	13
Time spent with heroin users			
all free time	13	7	19
most free time	18	13	23
about half	20	11	28
some free time	35	40	29
no free time	15	29	1
Used heroin alone in last 6 months			
all the time	17	10	23
most times	19	20	19
half the time	20	13	26
sometimes	30	29	32
no times	14	29	0
Places used in last 6 months			
at home	80	83	77
friend's place	48	50	45
parties	4	5	3
public places	45	51	38
car	36	57	15
elsewhere	5	5	4

3.9 Crime

Criminal activity in the month preceding interview was measured using the Crime subscale of the OTI (see Table 10). Substantially fewer of the Indochinese sample (67%) answered these questions compared to the Caucasian sample (100%), thus the following data may not necessarily reflect the activities of the entire Indochinese sample. Approximately half (55%) of those who answered the crime questions had been criminally involved in the last month, most frequently with drug dealing (41%) and property crime (20%). A small proportion had been involved in fraud and violent crime (each 5%). While fraud and violent crime were usually committed on a less than weekly basis, property crime and dealing were frequently engaged in at least weekly. The Indochinese sample contained a greater proportion of dealers (65% vs 24% of Caucasians), while the Caucasian sample were more likely to engage in other criminal activities. Nearly one third of the sample (30%) were currently facing criminal charges.

The average score on the crime subscale was 1.7. The Indochinese sample had significantly higher total crime scores than the Caucasian sample (2.2 vs 1.3, $t_{165}=-3.2$, $p=0.002$). Higher crime scores were also obtained among those who were not in treatment compared to those who were (2.4 vs 1.0, $t_{160}=5.1$, $p<0.0001$), and among those who had exclusively injected compared to those who had smoked at least sometimes in the last 6 months (2.4 vs 1.5, $t_{152}=-2.94$, $p=0.004$). However, caution must be exercised in interpreting these results, as any difference may be confounded by the missing data from the Indochinese sample, and by potential sampling bias. Further, unless multivariate analysis is conducted, it is not clear which is the major factor associated with this difference.

Table 10: Criminal activity of 167 heroin users in the month prior to interview

	Total	Caucasian	Indochinese
N	167	100	67
Crime in last month (%)	55		
property dealing	20	30	6
fraud	41	24	65
violent crime	5	9	0
	5	9	0
Crime score (mean)	1.7	2.2	1.3
Currently facing charges (%)	30	29	32

3.10 Health

Health status in the last month was measured using the Health subscale of the OTI. There were no significant differences between the Indochinese and Caucasian samples on the average total health score ($t_{192}=1.2$, $p=0.23$), or between exclusive injectors and those who had smoked in the last 6 months ($t_{179}=0.02$, $p=0.99$). However, significantly higher scores were obtained among the non-treatment sample (16.1 vs 12.9, $t_{176}=3.1$, $p=0.003$). Both groups scored an average of one injection-related problem in the month prior to interview.

Just under half the sample (43%) had overdosed at some time in their lives; those who had overdosed had done so a median of two times (see Table 11). Overdose was significantly more common among the Caucasian sample (59% vs 26% of Indochinese; unadjusted OR=4.0, 95%CI=2.1, 7.7; $\chi^2_1=21.8$, $p<0.0001$), and had primarily occurred while injecting (98% of overdoses), although two people claimed they had been smoking prior to overdosing. It was not uncommon for other drugs to have been used with heroin at the time (39%); the Caucasian sample were significantly more likely to have been using other drugs than the Indochinese prior to overdose (52% vs 8%; unadjusted OR=13.3, 95%CI=2.8, 122.9; $\chi^2_1=15.9$, $p<0.001$). The most frequently used drug was benzodiazepines (used before 21% of overdoses among Caucasians and 4% among Indochinese). Alcohol (19%) was also commonly used by the Caucasian sample. While the majority of overdoses involved only heroin, 33 percent involved one drug in addition to heroin, and 6 percent two drugs. Three quarters of respondents (76%) had been present during another person's overdose.

The following variables were entered simultaneously into a logistic regression predicting the odds of ever having experienced a heroin overdose: age, gender, years of school completed, number of drug classes ever used, ethnicity, treatment status, whether they ever smoked heroin, dependence score and whether they used heroin in public places. The final model ($\chi^2=37.1$, 2df, $p<0.0005$) consisted of age and number of drug classes ever used as significant predictors of overdose. After adjusting for all other variables, for every year that the respondents' age increased there was a 6% increase in the the odds of having experienced a heroin overdose ($\chi^2_{WALD}=6.0$, 1df, $p=0.01$), while for every extra drug class ever used there was a 36% increase in the odds of having experienced an overdose ($\chi^2_{WALD}=19.8$, 1df, $p<0.0005$).

Table 11: Overdose among 200 heroin users

	Total	Caucasian	Indochinese
N	200	100	100
Ever overdosed (%)	43	59	26
Number of times (mean)	2	3	1
Route of use when overdosed (n=85; %)			
smoking	2 people	1 person	1 person
injecting	98	98	96
Other drugs used when overdosed (n=85; %)			
none	61	48	92
alcohol	19	27	0
benzos	21	29	4
opiates	1	2	0
other	4	3	4
Present during other OD (%)	76	78	75
Number of times (mean)	5	6	3

3.11 Smoking context

Overall, the qualitative data suggest that Indochinese are more familiar than Caucasians with smoking heroin. Almost all (91%) of the Indochinese reported that they knew of others of the same or similar ethnic background who smoked heroin. By comparison, only 25% of Caucasians reported knowing other Caucasians who smoked the drug. This finding suggests that heroin smoking may be more widespread among the Indochinese community at this point in time. It may also reflect the finding, noted earlier, that Indochinese heroin users are more immersed in the drug market scene and more likely to spend most or all of their free time with other heroin users, compared to Caucasian users. This was reflected in comments provided by both Indochinese and Caucasian respondents. As a 38 year old Caucasian male noted, “Smokers are dealers who have a lot of money and can afford to smoke. Customers are injectors.” Similarly, another Caucasian, a 23 year old male, commented that “Smokers have more money, [are] usually dealers, and tend to be younger.”

The majority of Indochinese users (77%) who initiated heroin use by smoking reported using the foil method. Caucasians, on the other hand, were more likely to report initiating use of smokeable heroin through the use of “snowcones” (i.e., marijuana and heroin: 39%). Interestingly, a majority of those Caucasians who indicated that they initiated use through “snowcones” reported that most of the smokers they currently knew used the foil method to smoke the drug. This may reflect the diffusion of this particular technology of use over time, resulting in increased familiarity with the foil method by non-Indochinese populations.

The lesser familiarity of Caucasians with heroin smoking is also supported by qualitative data. Although they were familiar with several methods of smoking the drug, 45% of Caucasians were unable to provide a name for these methods of administration. While 100% of Indochinese identified “smoking”, “chasing the dragon”, “smoking white”, “snowcones” and “spotting” as expressions for smoking heroin, only 55% of Caucasians were familiar with some or all of these expressions. Overall, “smoking” was the most common expression used to refer to methods for smoking heroin (28%), followed by “chasing the dragon” (23%); a finding supported by concurrent ethnographic research (Maher, 1996a).

Indochinese (52%) were more likely than Caucasians (40%) to perceive a difference between those who smoked heroin and those who injected it. More than half (60%) of Indochinese felt that injecting was both more effective (i.e. provided a “stronger effect” or got people “more stoned”) and more risky, compared to only 7% of Caucasians. These views are reflected in the following comments made by Indochinese heroin smokers.

“Many Vietnamese feel it is less shameful to smoke than inject.” (17 year old Vietnamese female IDU).

“If they call me junkie, I feel looked down on.” (19 year old Indochinese female IDU)

“They [injectors] get more stoned and get pin and needle and last longer than us [smokers].” (23 year old Indochinese male smoker)

“Injecting is more dangerous. It can kill you, cause you get OD.” (19 year old

Indochinese male smoker)

“You can get killed cause of OD if you inject.” (28 year old *Indochinese male smoker*)

“Injecting is more effect and injecting is more likely to die soon.” (16 year old *Indochinese male smoker*)

Overall, Caucasians (37%) were more likely than Indochinese (24%) to express the belief that smokers were “less addicted”, or thought they were less addicted, than injectors.

“Smokers are not as addicted. Smokers are not junkies but all users have some desperation for it.” (23 year old *Caucasian female IDU*)

However, several Caucasian respondents also emphasized that smokers were less likely to (incorrectly) believe that they were dependent on the drug.

“They think they’re not junkies if they smoke. They think they won’t get addicted. Smokers [are] fools - think they won’t get hooked. [They have] a different attitude - us and them” (27 year old *Caucasian male IDU*)

“Smokers look down on injectors. Smokers think they’re not junkies” (47 year old *Caucasian male IDU*)

“Smokers think they don’t have a problem - they don’t consider themselves junkies.” (36 year old *Caucasian female IDU*)

“Smokers think needle users are junkies. They don’t consider themselves junkies and don’t think they can get addicted.” (29 year old *Caucasian male IDU*)

Caucasians were also more likely than Indochinese to express moral differences (22% to 7%) between smokers and injectors.

“Injectors are more desperate.” (44 year old *Caucasian male IDU*)

“Injectors are more selfish and more greedy.” (18 year old *Caucasian male IDU*)

Several comments by Caucasian respondents focused on perceived differences in the type and volume of crime committed by heroin smokers and injectors in order to support their consumption.

“Smokers have stronger willpower. Injectors have lower morals and do more crime to support their use.” (36 year old *Caucasian male IDU*)

“Injectors hang out and commit crime. Smokers don’t hang out so they do less or no crime.” (24 year old *Caucasian male IDU*)

“Injectors are more likely to commit crime to support their habit.” (32 year old Caucasian female IDU)

Caucasians were more likely than Indochinese to indicate that injectors were “junkies” (17% compared to 2%) whereas Indochinese used a series of finer distinctions to classify “junkies”.

Slightly more than half the Indochinese respondents indicated that injectors “felt differently” than smokers, compared to 42 percent of Caucasians. Many Indochinese respondents indicated that injectors felt “looked down on”. For example,

“Many Vietnamese feel it is less shameful to smoke than inject.” (17 year old Vietnamese female IDU)

“They [injectors] feel different because people look down on them” (37 year old Indochinese male IDU)

“People who inject feel bad about themselves and about loss of friendships. They behave differently - like junkie. Junkie is someone who inject.” (19 year old Indochinese male IDU)

“People who smoke, like they can be trust more but the people who inject, you don’t trust them.” (23 year old Indochinese male smoker)

Finally, Indochinese were more likely than Caucasians to associate negative identities with the term ‘junkie’. For example,

“Junkie [has] low status in the society.” (25 year old Indochinese male IDU)

“They [injectors] feel different because people look down on them.” (37 year old Indochinese male IDU)

“Junkie is mean, like they play dirty. They start to play very bad to their best friend and all that. They don’t care about their family - only care about heroin.” (23 year old Indochinese male smoker)

“Sometimes people inject turns into bad people. People who smoke are less likely [to turn into “bad people”].” (19 year old Indochinese female IDU)

“Junkies is stupid idiot and those who shoot up are junkie, not those who smoke.” (19 year old Indochinese male smoker)

“Junkies are bad people (user) that rob anyone: friends, family, people.” (19 year old Indochinese female IDU)

It was also common for Indochinese respondents to indicate that “junkies” were non-Asian heroin users, as reflected in the following quotes.

“We are not calling Vietnamese drug use[r] as junkie but we are calling non-Vietnamese drug use[r] as junkie.” (37 year old Indochinese male IDU)

“Junkies are non-Asian, coming to Cabra for buying.” (20 year old Indochinese male IDU)

“Junkie referred to people who are non-Asian.” (16 year old Indochinese male smoker)

“Junkie is the word referred to non-Asian people who take drug (17 year old Indochinese male smoker)

“We call non-Vietnamese drug users are junkie.” (28 year old Indochinese male IDU)

“Junkies” were further differentiated by Indochinese respondents as being, in addition to non-Asian, those who came to Cabramatta to purchase heroin.

“Junkie is referred to non-Asian come to Cabra for their score.” (20 year old Indochinese male IDU)

“Junkie only refer to people from outside of Cabramatta come to buy heroin.” (16 year old Indochinese male IDU)

“We called those Australian from other area came to Cabramatta for a score as junkie.” (17 year old Indochinese male smoker)

“Junkies are non-Asian people just come to Cabra for their score.” (24 year old Indochinese female smoker)

“Junkies are those from outside Cabra - just come for their scores.” (21 year old Indochinese male IDU)

“People from outside Cabra come to buy heroin, we call them junkie; [they are] lower.” (26 year old Indochinese male IDU)

These findings are consistent with recent ethnographic research which highlights the cultural specificity of the stereotype of the “junkie”. They may also have significant implications for perceptions of risk-taking behaviour among the Indochinese community. Many of the young Indochinese interviewed by Maher (1996c) used the term “junkie” in conjunction with the prefix “Aussie”. Their perception of the “junkie” as Anglicized allowed them to define themselves as *not-junkies* or *other-than-junkies* and most felt that AIDS was something reserved for *other people*: e.g. “junkies” and “people from the city”. The threat of AIDS was seen as distant and unlikely to affect them or the people they knew. Both Caucasian and Indochinese respondents in the present study drew on a series of nuanced distinctions centred on ethnicity, route of administration and insider/outsider status to distinguish “self” and

"other". These distinctions were used to organize their perceptions and beliefs about risk-taking.

3.12 Street methadone

In Sydney, the use of illegally obtained or diverted methadone has been the focus of increased attention in recent years (Darke et al., 1996b). Ethnographic research suggests that young Indochinese in South West Sydney utilise street supplies of methadone both to self-medicate and in attempting to “quit” heroin use (Maher, 1996c). Approximately half this sample (50% of Caucasian and 48% of Indochinese respondents) reported that they had bought street methadone at some time.

The qualitative data suggest that these two groups have very different reasons for using illicit methadone. Indochinese users (95%) overwhelmingly reported purchasing street methadone in order to stop using or to cut down their heroin use, compared to Caucasians (12%). None of the Indochinese reported buying street methadone with the expressed purpose of “getting stoned”, whereas 30 percent of Caucasians did so.

Of those who reported ever purchasing street methadone, only five percent of Indochinese reported injecting it, compared to 60 percent of Caucasians. Most Indochinese respondents indicated that they took methadone orally because it was the only way they knew or that they had been instructed to take it that way. Some Indochinese respondents believed that they would die or go blind if they injected methadone.

The majority of Caucasians (88%) reported that street methadone was easy to get, compared to less than half of the Indochinese (45%). Caucasians paid, on average, lower prices than Indochinese for street methadone, suggesting a greater availability of diverted methadone among Caucasian heroin users and a higher commodity value among Indochinese heroin users.

Indochinese (70%) were more likely than Caucasians (40%) to report having gone “cold turkey” or to have attempted detoxification without clinical supervision. The majority of respondents (67% of Indochinese and 90% of Caucasians) had attempted to cut down/quit without help in the past. Of the Indochinese, 48% reported using street methadone compared to only five percent of Caucasians, who were more likely to use a variety of methods. These included self-medicated detoxification, predominantly using benzodiazepines (47% vs 5% of Indochinese), cutting down (33% vs 5%), and substitution of another drug (9% vs 0%). This is consistent with findings from ethnographic research which suggests that young Indochinese heroin users make repeated attempts to detoxify very early in their using careers and use large quantities of street methadone (Maher, 1996c).

4.0 CONCLUSIONS

4.1 Major findings of the study

This project represents the first study of routes of heroin use in Australia and the first detailed survey of patterns of heroin use among Indochinese in New South Wales. It documents the existence of heroin smoking or inhalation (“chasing the dragon”) as a popular route of administration among both Indochinese and Caucasian heroin users. Although recent surveys of illicit drug use trends have identified heroin smokers in South West Sydney (Maher, 1996d; O'Brien, Darke and Hando, 1996), there is a virtual absence of detailed documentation of non-injecting routes of heroin use in Australia. Almost two thirds of participants in this study (61%) had smoked heroin at least once. While smoking was more common among the Indochinese sample, 48 percent of Caucasian respondents had also smoked heroin.

4.1.1 Demographic and drug use characteristics

There were major differences in the demographic characteristics of the two samples in this study. The Caucasian sample were older, more likely to have post-school qualifications, more likely to be employed, to be in a relationship and to have children. They were also more likely to utilise treatment and other community services, and to be polydrug users.

In general, the Caucasian respondents were similar in their demographic and drug use characteristics to other treatment and non-treatment samples in South West Sydney (Darke, Hall and Swift, 1994; Darke, Sunjic, Zador & Prolov, 1996). The prevalence of Caucasian users who commenced injecting with amphetamine is also consistent with reports that increasing numbers of injecting drug users inject other drugs before using heroin (e.g., O'Brien et al., 1996). As noted earlier, previous research has largely not reported Caucasian users commencing heroin use with smoking, snorting or "snowcones", compared to 27% of the current sample.

How do our Indochinese heroin users compare with those studied by others? Because of the dearth of research on this population, this is difficult to assess. The Indochinese heroin users recruited for this study were, on average, about five years younger than the Vietnamese injecting drug users studied by Louie et al (1996), and six years older than the Indochinese heroin users studied by Maher (1996c). The Indochinese respondents in this sample were also less likely than those studied by Louie and colleagues (1996) to have previously sought treatment (46% vs 61%). Given the different sampling techniques utilised in these studies, it is likely that each accessed slightly different populations, who may be at differing stages of their drug use careers.

4.1.2 Transitions

Slightly more than one quarter of the sample (29%) had made a transition from smoking to injecting heroin, with Indochinese being marginally more likely to make this transition. In contrast to the findings of overseas researchers (e.g. Griffiths et al., 1994a; Grund and Blanken, 1993), reverse transitions were uncommon among our respondents, with only three

percent (all Caucasian) reporting a transition from injecting to smoking. Our data indicate that Indochinese heroin users are more likely than Caucasians to commence heroin use by smoking the drug and are more likely to commence injecting with heroin. All of the Indochinese heroin users in this study reported that heroin was the first drug ever injected, compared to 73% of Caucasians. Indochinese were also more likely to smoke heroin on an exclusive or regular basis than Caucasians who were more likely to be exclusively or predominantly injectors.

Reasons provided for routes of use were unsurprising, if not always founded in fact. For example, the belief among those that had made a transition to injecting that injecting was more efficient and provided a better "rush" is logical. However, the perception that injecting is more cost-effective may be a fallacy because of the development of tolerance, as injecting has been associated with greater severity of dependence, and may result in greater expenditure on the drug (Gossop, Griffiths, Powis and Strang, 1992). This was reflected in a belief expressed by smokers that smoking heroin was less addictive than injecting or that heroin would be harder to quit if injected regularly. While this study found no differences in severity of dependence related to route of use, as noted above, Gossop and colleagues found that heroin smokers were significantly less likely to be classified as dependent than heroin injectors according to the SDS (Gossop, Griffiths, Powis and Strang, 1992).

4.1.3 Severity of dependence

In contrast to Gossop and colleagues (1992) we found no significant differences in relation to severity of dependence between those who smoked the drug and those who injected it. However, the relatively small sample size and the large size of the confidence intervals indicate caution in excluding the influence of route of administration. This research needs to be replicated in larger samples of heroin users. We did, however, find that Indochinese users had significantly higher scores than Caucasian users and thus were more likely to be classed as dependent. Given the areas addressed by the SDS, this finding may reflect higher levels of concern expressed by Indochinese respondents in relation to their heroin use over the past year, relative to their Caucasian counterparts (see also Maher, 1996c).

A multiple regression also revealed dependence scores were higher among women and among those not currently in a treatment service, and were positively associated with years of high school completed and number of drug classes ever used. Consistent with previous research (Gossop et al., 1995), the SDS demonstrated good psychometric properties in this sample, showing strong internal consistency and unidimensionality.

4.1.4 Risk-taking behaviours

These data indicate that, among both groups, there is still a small but significant risk for the transmission of HIV and other blood-borne viral infections: 11 percent of injectors reported that they had used a needle after someone else, and 19 percent reported that they had lent their needle to someone else to use in the last month. These data also suggest that Indochinese users may be more likely to re-use their needles and less likely to report cleaning them (see also Louie et al., 1996).

A multiple regression analysis indicated that injecting risk-taking scores were higher among

Indochinese respondents, after adjusting for potential confounders. This finding may be related to barriers to accessing clean injecting equipment among this group, or the circumstances of injecting among this group may encourage riskier patterns of injecting. It may also be that Indochinese users are less familiar with risk reduction messages. Injecting risk scores were also higher among those who were not in treatment, those who had used a greater number of drug classes and those with higher dependence scores, all indicative of greater drug involvement.

There were no differences in health status between the groups as measured by the OTI health scale. Caucasians more often reported having experienced a heroin overdose, but our data suggest that apparent ethnic differences in overdose risk can largely be explained by poly drug use. After adjusting for all other potential confounders, the likelihood of having overdosed was positively associated with age and the number of drug classes ever used. For each extra drug class that had been used, the odds of having overdosed increased by about one third. Caucasians were more likely than Indochinese to have ever used both alcohol and benzodiazepines. Caucasians were also more likely than Indochinese to report using other drugs prior to nonfatal overdoses, particularly benzodiazepines (21% versus 4% respectively).

Our findings are consistent with those of Darke and colleagues' examination of fatal and non-fatal overdose (Darke et al., 1996a; Zador et al., 1996). For example, in more than two-thirds (69%) of the fatalities they examined in South West Sydney for 1995, drugs other than morphine were also detected. These were primarily alcohol and benzodiazepines (Darke et al., 1997). While they were unable to collect information on ethnicity, Darke and colleagues (1997) report that the majority (81%) of the 47 heroin-related fatalities in 1995 were born in Australia and that in all cases, the route of heroin administration was by injection.

Although not a significant predictor of overdose in this study, the role of route of administration is of interest. In almost all cases, respondents claimed that they were injecting when non-fatal overdoses occurred. Grund and Blanken (1993) cite a Dutch study which reported only six percent of Surinamese heroin users, who were predominantly smokers, had experienced non-fatal overdose, compared to 29 percent of Dutch born users, who were more likely to inject. It is possible that the method of smoking renders overdose less likely, as the drug is administered in a number of small doses rather than as a single injection (Darke and Zador, 1996).

4.1.5 Social isolation

Little is known about the relationships between ethnicity, injecting drug use and HIV risk-taking behaviours. The absence of ethnographic data means that we have few insights into the socio-economic, cultural and temporal determinants of injecting drug use among ethnic/cultural minorities in Australia. Elsewhere, poverty, social isolation, cultural alienation, and ethnic minority status have been implicated in the spread of HIV infection among IDU. In particular, evidence from South East Asia and the United States indicates that IDU who are members of racially or ethnically subordinate minorities may be at greater risk of HIV infection (Thomas and Day, 1995; Friedman et al., in press).

Our findings support ethnographic research which suggests that Indochinese heroin users, and especially injectors, are more socially isolated than their Caucasian counterparts (Maher, 1996c). Overall, Indochinese users had significantly less contact with services than the Caucasian users. They also appeared to be more immersed in the drug market (with 65% reporting involvement in dealing during the month prior to interview) and in heroin using peer groups (with 69% reporting that more than half their friends used heroin and about 20% claiming that they spent all their free time with heroin users). Indochinese users were also more likely to report using alone and less likely to report using in public places than Caucasians.

Finally, the study confirms the existence of a strong stigma attached to injecting drug use within the Indochinese community (see also Maher, 1996c). The qualitative data indicate that Indochinese were more likely than Caucasians to associate negative identities with the term 'junkie'. Indochinese frequently cited ethnic differences and differences in route of administration as factors distinguishing "junkies" from other heroin consumers. These data suggest that while they interact frequently in the context of market transactions, Indochinese and Caucasian heroin users appear to inhabit different social worlds. Perceived differences between smokers and injectors serve to reinforce what one respondent described as an "us and them" attitude.

4.2 Implications of the study

4.2.1 Service provision/Access to services

Previous research has identified considerable barriers to accessing health services for people of non-English speaking background. These include the cultural inappropriateness of the way in which some health care services are delivered, inadequacies in relation to language services and a failure to address issues of health promotion and illness prevention (National Health Strategy, 1992).

Our data indicate that Indochinese heroin users experience significant barriers to accessing treatment and other health care services. Not only were they less likely to have accessed such services, but they were much more likely to have used illegally purchased street methadone in an attempt to moderate their heroin use.

Chronic underfunding and a lack of resources continue to be major problems confronting both service providers and client groups in South West Sydney. Apart from methadone maintenance clinics, a specialist youth health team and a mobile NSEP worker, there are few services for heroin users in the Cabramatta area. With the exception of a late opening chemist and a mobile bus which operates a needle and syringe exchange two evenings a week, it is difficult to obtain sterile injecting equipment outside business hours in Cabramatta.

There is currently no residential detoxification facility in South West Sydney; heroin users wishing to detoxify are referred to service providers in other areas and typically face long waits on secondary lists. A home detoxification service has recently commenced in the area, but such services are most appropriate for those with strong social support from family or

friends (Campillo and Mabbutt, 1996; see also Mattick and Hall, 1996 for a review on detoxification). The social isolation and stigma often experienced by Indochinese users may limit the potential benefits of home detoxification programs for this group.

Further, it is not clear that existing services are geared towards heroin users from different cultural and religious backgrounds, especially those who are not fluent in English, or who have different attitudes and expectations in relation to drug use, including using norms, than the dominant Caucasian population. Efforts to disseminate safer using and harm reduction messages have not been successful in reaching the Indochinese community. Data on HIV risk-taking behaviours among this group suggest that there is an urgent need for targeted information and education campaigns, involving both intensive outreach and peer education among Indochinese heroin users.

There is also a need for peer education efforts within the Caucasian community and, in particular, for interventions designed to promote risk reduction among poly drug users. Further research investigating the treatment needs, expectations, and experiences of specific populations of heroin users is required.

4.2.2 Research implications

There is clearly a dearth of research into patterns of illicit drug use among ethnic or minority cultural groups in Australia. In particular, little is known about the cultural lenses used to organize drug use in diverse ethnic communities. The ability of service providers to provide services which are both culturally appropriate and age sensitive and, where necessary, drug specific, has been hampered by the lack of an integrated, co-ordinated approach to research which takes seriously the needs, expectations and experiences of drug users themselves. In Australia, there are few examples of action research projects which attempt to merge descriptive and exploratory research with intervention projects (but see Le, 1996; and more generally, the TRIBES projects auspiced by the NSW Users and AIDS Association). Institutionally-based researchers concerned to understand the dynamics of heroin use and risk behaviours among ethnic and cultural minority groups must begin to collaborate with service providers in the community, as well as in health and social service settings.

More generally, there is a need for studies which combine ethnographic and epidemiological approaches in order to investigate the natural history of heroin use. The spread and patterning of both heroin use and HIV, and other infectious agents that are transmitted sexually or parenterally, is clearly shaped by the social networks of users. Very little is known about the structure, composition and extent of variation in drug injector's networks in and between particular areas, between different cultural/ethnic groups, and across different age groups and how these affect rates of initiation to heroin use and the spread of HIV and other agents. To date, Australian studies have not explored the social network paradigm and its application to the study of drug use and the spread of blood-borne viral infections. Social network analysis permits the examination of patterns of drug use, risk behaviour and viral transmission in their proper social, cultural and ecological contexts and provides opportunities to develop and implement strategies to prevent the transmission of disease and to minimise drug-related harm.

To date, there has also been a lack of commitment to longitudinal research in the illicit drugs area. Prospective cohort studies that allow the detection and analysis of incident events are

time consuming and expensive but they may be the only way to obtain valid and reliable information about processes such as those involved in initiating heroin use and making transitions between routes of administration. Cohort designs that permit the identification and investigation of emerging processes as they occur can also provide a concrete basis for developing and implementing interventions designed to minimise drug-related harm.

The market characteristics of heroin (composition, price, purity, presence of adulterants) may also be important factors in influencing the prevalence and patterns of heroin use and, in particular, the route by which heroin can most efficiently be used. We know very little about the price, purity and composition of heroin available for sale in Australia or the dynamics of particular drug markets. While to date, there have been no independent scientific investigations of the characteristics of heroin available in Australia, we are currently negotiating with the NSW Police Service to obtain access to street-level heroin samples. This study, if successful, will shed light on the relationship between heroin purity, composition, smokeability and routes of heroin administration.

4.2.3 Promoting alternatives to injecting

Finally, the emergence of non-injecting routes of administration has prompted considerable controversy in Australia, resulting in some tension between user organizations and public health officials (Wood, 1996). The diffusion of non-injecting routes of administration and, in particular, the possibility for widespread adoption of reverse transitions from injecting to smoking, clearly has the potential to produce aggregate public health gains. Awareness of the health risks of injecting drug use in Australia has led some commentators to recommend the facilitation of non-injecting routes of administration (e.g. Loxley et al., 1996; Wodak, 1996).

The implementation of such recommendations needs to be carefully considered. If heroin smoking is viewed as a less stigmatised, more culturally acceptable or user-friendly method of use, it may also reduce the barriers to initiation of heroin use for some groups of potential users. The current study suggests a need for caution given the lack of local data and, in particular, our relative ignorance of the social, cultural, economic and pharmacological factors influencing transitions between routes of administration among different populations of heroin users. In order to convince politicians and policy makers of the benefits to be had by actively promoting or engineering so-called “healthy transitions”, we will need to produce evidence that such a move will result not only in less aggregate harm to current users, but that it will not produce a large increase in the pool of potential injectors.

In the interim, this study indicates an urgent need to provide heroin smokers with information explaining the potential risks and ways to minimise any harms associated with this particular method of use, while continuing to provide injecting drug users with credible, reliable and up-to-date information about safer ways of using.

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