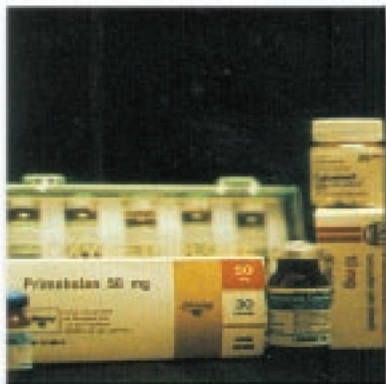


Other drugs

Principal findings

- There were 968 performance-enhancing drug detections at the Australian Customs border in 1998–99, a 73.4 per cent increase on the 558 in 1997–98.
- The incidence of polydrug use is increasing in Australia including pharmaceuticals being used in conjunction with illicit substances such as heroin and amphetamine type substances.
- Australian health authorities, researchers and law enforcement agencies report an increasing trend in the injection of broken down prescription pills, tablets and capsules among injecting drug users.
- Australian health authorities, researchers and law enforcement agencies have found that the use of hallucinogens (including LSD), and the abuse of morphine-base tablets and capsules increased in 1998–99.

Pharmaceuticals

Pharmaceutical use for non-medical reasons is increasing and, after tobacco and alcohol, is Australia's most serious drug problem. The National Drug Strategic Framework 1998–2002 defines pharmaceuticals as drugs available through a pharmacy, whether over the counter or on prescription. It states, 'Pharmaceutical drugs are used by many Australians and, although they contribute greatly to improved general health and increased life expectancy, they can also cause harm if used inappropriately' (Ministerial Council on Drug Strategy 1998, p. 4). And 'the harms associated with pharmaceutical drug use can include short-term mild side-effects, longer term dependency and overdose' (p. 9). The study 'Drug-related Hospital Admissions: a review of Australian studies published 1988–1996' (Roughhead et al 1998) estimated that about 80 000 people are hospitalised every year in Australia as a result of problems related to the abuse of pharmaceutical drugs.

Narcotic analgesics

Morphine, codeine, pethidine and methadone belong to the group of drugs known as opioids, or narcotic analgesics. Each drug is either naturally occurring (opiates) or synthetic derivatives (opioids) of opium and all have strong pain-killing capabilities. Morphine, pethidine and codeine are widely used for medical purposes and methadone is used in Australia for treating heroin addiction. All four drugs are listed in Schedule 4 or Schedule 8 of the Commonwealth Standard for the Uniform Scheduling of Drugs and Poisons which classifies all drugs and poisons in Australia. Schedule 4 is a prescription only medicine and as such is a substance, the use or supply of which should be by or on the order of persons permitted by State or Territory legislation to prescribe, and should only be available from a pharmacist on prescription. Schedule 8 refers to 'controlled drugs', which should be available for use but require restriction of manufacture, supply, distribution, possession and use to reduce abuse, misuse and physical or psychological dependence.

Morphine

Morphine is the principle constituent of opium; it is available as slow-release tablets and in liquid and powder form. Tolerance and physical dependence develop quickly in morphine users. The drug is known as 'M', 'monkey', 'morph', 'Miss Emma', 'dreamer' and 'hard stuff'. Among its trade names are MS Contin, Anamorph, Kapanol and Morphalgin; there are also various morphine mixtures.

Codeine

Codeine is a narcotic analgesic also extracted from opium, although neither as strong nor as addictive as morphine—is the most widely used naturally occurring narcotic in medicine today. For moderate pain it is often prescribed in tablet form, alone or in combination with aspirin or paracetamol; it is used to a lesser extent as an injectable solution for pain management. An effective cough suppressant, it is also commonly found in cough syrups. Among the trade names for codeine are Panadeine Forte, Codral Forte, Dymadon Forte, Codalgin Forte and Mersyndol Forte.

Pethidine

Pethidine is a synthetic narcotic analgesic with effects similar to those of morphine but shorter lasting. It is widely used for the relief of moderate to severe pain. It is available in tablet, syrup and injectable forms and is known colloquially as 'peth'.

Methadone

Methadone, a synthetic narcotic analgesic prescribed as a substitute for heroin to opiate-dependent people, has been legally available in Australia for 20 years. It works by acting on the opioid receptor sites in the brain, reducing the awareness of pain, preventing opiate and opioid withdrawal, diminishing cravings and blocking the effect of heroin abuse. When used in a treatment program, methadone is provided daily to patients in syrup form, to be taken orally; on average the effects last 24 hours. Methadone treatment helps people break the routines and habits associated with heroin abuse and is cleaner and safer than injecting heroin, yet it is still found in the illicit market. Methadone is also available in tablet and powder form and is known colloquially as 'meth', 'metho' and 'done'.

Effects

Opioids and opiates are fast-acting drugs whose effects last from two to 24 hours. Medically they are used in the treatment of pain, coughs and acute diarrhoea. They are also used to reduce tension, anxiety and aggression, which contribute to their abuse. Their adverse effects vary from minor conditions such as drowsiness, apathy, lethargy, constipation, nausea and vomiting to serious consequences, including death if taken in larger doses. Tolerance and dependence develop with repeated use. Withdrawal symptoms range from sweating, a running nose and watering eyes to irritability, restlessness, tremors, loss of appetite, depression, vomiting, elevated heart rate, high blood pressure and muscle spasms. Symptoms are reversed if a suitable opioid or opiate is administered; if not, most overt physical symptoms disappear in seven to 10 days. Psychological dependence is more complex and protracted.

Benzodiazepines

Benzodiazepines are classed as depressants; they affect the central nervous system by slowing the body down—physically, mentally and emotionally. The main difference between types of benzodiazepines is in their length of action, which ranges from four to six hours to two to three days. They are widely prescribed for the treatment of anxiety, insomnia, epilepsy, alcohol withdrawal and muscle spasms. Two-thirds of benzodiazepine users are women (CEIDA 1998). Often referred to as 'benzos', 'minor tranquillisers', 'pills', 'downers' or 'sleepers', the common types of benzodiazepines and their brand names are listed in Table 6.1.

Benzodiazepines can be abused on their own or more often as part of a pattern of polydrug use. They are popular with injecting drug users, especially heroin users, who take them when supply is interrupted or when withdrawing from heroin or seeking to increase heroin's effect. A 1995 study found that more than one-third of injecting drug users were also using benzodiazepines (Darke et al. 1995). Users of amphetamine type substances and cocaine often use benzodiazepines to manage over-stimulation. A 1997 study of patterns of benzodiazepine use among 213 ecstasy users from Sydney found that 12.7 per cent of participants used them while 'coming down' from the effects of ecstasy (Topp et al. 1997).

With the exception of flunitrazepam (Rohypnol), benzodiazepines are listed in Schedule 4 of the National Drugs and Poisons Schedule. In response to the health and law enforcement sectors' concerns about widespread abuse, Rohypnol was reclassified to Schedule 8 in June 1998.

Table 6.1: Benzodiazepines and their brand names	
Drug name	**Brand name**
Diazepam	Valium, Ducene, Antenex, Propam
Oxazepam	Serepax, Murelax, Alepam, Benzotran
Nitrazepam	Mogodon, Alodorm, Dormican, Nitepam
Temazepam	Normison, Temaze, Euhypnos
Lorazepam	Ativan, Emoten
Flunitrazepam	Rohypnol, Hypnodorm
Bromazepam	Lexotan
Clonazepam	Rivotril

Source: CEDA (1998)

Effects

The effects of long-term benzodiazepine use are many and include nausea, headache, irritability, lethargy, memory impairment and depression. Repeated and prolonged use can lead to physical and psychological dependence, even when doses are at the medically prescribed rate. Withdrawal symptoms are long-lasting and severe. Serious medical complications may arise from rapid withdrawal, which is why gradual cessation is recommended.

The combination of benzodiazepines with large amounts of illicit and licit drugs, such as alcohol can result in overdose or death. A national ecstasy education project, 'Project e', includes a fact-sheet warning that taking ecstasy in combination with anti-depressants can be hazardous. Benzodiazepines are involved in one out of every four heroin-related deaths: less heroin is required to overdose if benzodiazepines are already present in the body (NDARC 1998).

Pharmaceuticals—methods of administration

Pharmaceuticals are commonly administered orally (via tablet, capsule or syrup), by injection or, less commonly, through skin patches and suppositories. Queensland University of Technology and the Western Australia Drug Action Team have reported an increase in injecting drugs derived from pills among illicit drug users. Morphine pills and benzodiazepines, particularly temazepam, were commonly crushed and injected. According to the National Drug and Alcohol Research Centre, 'Injecting pharmaceuticals in a tablet or liquid gel form is highly problematic and potentially dangerous. It causes severe health effects including collapsed veins, cellulitis (red, swollen, infected skin), skin abscesses, endocarditis (heart infection), hepatitis and amputations due to poor circulation' (NDARC 1998).

Current situation

The 1998 National Drug Strategy Household Survey provided information about patterns of drug use; 10 030 Australians aged 14 years and over were surveyed. The Survey found that analgesics are the fourth most frequently tried and abused drug—after tobacco, alcohol and cannabis—11.4 per cent of survey respondents had tried them and 5.2 per cent had recently used them for non-medical reasons. The proportion of respondents having ever used tranquillisers or sleeping pills for non-medical purposes almost doubled, from 3.2 per cent in 1995 to 6.2 per cent in 1998, while the proportion using in the preceding 12 months for non-medical purposes increased fivefold, from 0.6 per cent to 3.0 per cent. Note: the Survey in 1995 had a sample size of 3850, the Survey in 1998 had a sample size of 10 030. The differences in sample size must be taken into account when comparing the data from both sets of results (AIHW 1999).

The 1998 Survey found that most respondents who had ever used pharmaceuticals for non-medical purposes first obtained them from friends, relatives and acquaintances; obtaining them by prescription was a notable alternative source. The Survey also revealed that few Australians associate the non-medical use of pharmaceuticals with having a drug 'problem' (AIHW 1999).

A study of Australian secondary students' use of over-the-counter and illicit substances in 1996 (Anti-Cancer Council of Victoria 1999) provides further insights into patterns of pharmaceutical use. The study, of over 29 000 students aged 12 to 17 years from 434 secondary schools, found that 20 per cent of students had used tranquillisers for non-medical reasons, with between 4 and 5 per cent of students admitting having used tranquillisers in the month preceding the survey. The level of use was consistent across age groups and suggests that knowledge of tranquillisers as a substance of abuse may be developing at an early age.

Findings from the 1998 Illicit Drug Reporting System (NDARC 1999) show that use of pharmaceuticals among injecting drug users remains high, although the prevalence of injecting drugs derived from pills (benzodiazepines and prescription opioids) was lower in 1998 than in 1997 in Sydney and Melbourne. The Illicit Drug Reporting System provides details of trends in illicit drug use in Sydney, Melbourne and Adelaide; data are collected from injecting drug users, informants such as health workers and police officers, and other sources (such as laboratory reports on drug purity, telephone hotline information and other studies).

In Sydney, half of the methadone-using injecting drug users had injected methadone in the six months preceding the survey, while in Adelaide the comparable figure was one-third of injecting drug users. Methadone syrup was the most common form of methadone used in all three cities; use of physeptone tablets was widespread in Adelaide. Use of other opioids (not methadone or heroin) was notable in all three cities, one-third of injecting drug users having used them in the six months preceding the survey. In Melbourne and Adelaide around half of those using other opioids (not methadone or heroin) had injected them (41 and 55 per cent respectively); in Sydney the figure was much lower, at 16 per cent. Panadeine Forte and morphine were the most commonly used other opioids. A continuing trend is the high proportion of injecting drug users using benzodiazepines, although the total number of users injecting them has decreased in Sydney and Melbourne. The most popular benzodiazepines were diazepam (Valium) and flunitrazepam (Rohypnol).

A 1998 Community Based Drug Reporting Workgroup report (Davey et al 1998), coordinated by Queensland University of Technology, details patterns of substance use in the Brisbane metropolitan area with input from various community agencies. A high level of polydrug use, benzodiazepines being used in conjunction with illicit substances such as heroin and amphetamine type substances, was reported. Drug treatment centres reported to the Workgroup that benzodiazepine use was common among people admitted for detoxification.

The Australian Capital Territory Drug Strategy—'From Harm to Hope' (ACT Government 1999)—notes that since 1992 the Arcadia House Withdrawal Centre has reported a steady increase in the number of clients wishing to detoxify from benzodiazepines. The Territory's Drug Referral and Information Centre claims, however, that between 1995 and 1997 the number of clients seeking assistance with benzodiazepine use has remained steady, at between 17 and 18 per cent. The Strategy aims to reduce levels of inappropriate use of pharmaceutical drugs, in particular benzodiazepines, by increasing awareness and accountability among prescribing doctors.

Abuse of pharmaceuticals in Australia

The following national overview of pharmaceutical abuse is largely based on information provided to the Bureau by representatives of health services and law enforcement agencies.

National trends

According to numerous law enforcement agencies, drug and alcohol treatment centres and research studies, illicit drug users (such as users of heroin, amphetamine type substances and some on methadone maintenance treatment programs) are highly likely to abuse pharmaceuticals. The National Centre for Research into Prevention of Drug Abuse reported that morphine tablets were being injected as a substitute for heroin. The Coordinator of the Drug Court Program in Sydney stated that illicit methadone use was high among regular heroin users when heroin was in short supply or was used more generally in addition to heroin. The Port Macquarie Alcohol and Other Drugs service reported moderate to heavy use of benzodiazepines among users of heroin and amphetamine type substances and methadone clients, while the Western Australia Drug Action Team reported that illicitly obtained prescription drugs—mainly benzodiazepines—are popular with heroin users between 'fixes'.

Drug and alcohol treatment centres and information agencies reported that the rescheduling of Rohypnol has reduced that drug's availability and abuse, although it is still popular—especially among heroin users. It is available on the black market and prices were reported nationally by law enforcement and health authorities as ranging from $5 to $20 per tablet. 'Liquid Rohypnol' is a new development reported by the Cabramatta Youth Team, who say the drug is being mixed into a slush drink, or 'slurpie'. Pharmaceutical company Hoffman-La Roche will cease Australian imports of the 2–milligram strength tablets, replacing them with a 1–milligram strength tablet containing a blue–green dye that is detectable if diluted. The new version Rohypnol is due for release in November 1999 (D. Kingston (Hoffman-La Roche) 1999, pers. comm., 11 October).

South Australia's Forensic Science Centre and Victoria's Forensic Science Laboratory reported that paracetamol is being used as a cutting agent for heroin. The Victorian Laboratory reported that many ecstasy tablets consist of combinations of drugs, with benzodiazepines such as clonazepam and diazepam being used as cutting agents.

Police in Victoria, Queensland and Western Australia mentioned the involvement of outlaw motor cycle gangs in the distribution of pharmaceuticals.

Most law enforcement agencies reported, however, that they spent minimal time investigating pharmaceutical abuse and that such abuse was usually approached on a case-by-case basis.

New South Wales

In March 1999 New South Wales police seized 42 700 tablets of Sudafed (an over-the-counter medication) from a vehicle at Broken Hill. Each Sudafed tablet contains 0.06 grams of pseudoephedrine hydrochloride, a common precursor used in the manufacture of amphetamine type substances (see Chapter 4).

The main pharmaceuticals encountered by police in New South Wales are flunitrazepam (Rohypnol), oxazepam (Serepax) and diazepam (Valium). The street price of an ampoule of morphine was reported to be between $60 and $100.

Dr Alex Wodak, director of Alcohol and Drug Services at St Vincent's Hospital in Sydney, reported that benzodiazepine abuse is common and that users' practice of injecting temazepam is of concern because of the health risks. The Kirketon Road Centre in Kings Cross reported that the incidence of users injecting temazepam was increasing but that Rohypnol availability had decreased. The coordinator of the Drug Court Program for south-western Sydney said that benzodiazepine use is commonly reported by users of illicit drugs, and there are reports of morphine being obtained by abusers illicitly from terminally ill relatives and friends who are using the drug. The Cabramatta Youth Team reported that pharmaceuticals are easily obtained from street suppliers, as well as through 'doctor shopping'. The Alcohol and Other Drugs service in Port Macquarie reported an increase in the availability of MS Contin for purchase at street level.

In the first half of 1998–99 the New South Wales Health Department introduced a policy that would make large-bore syringes (syringes of 10 millilitres volume or greater) and butterfly cannulas no longer available from needle and syringe exchange outlets after 31 December 1998. This equipment is known to be used for injecting methadone, pethidine and morphine, and the new measure is designed to stop people injecting methadone intended for oral administration. The Kirketon Road Centre reported that since the new policy's implementation methadone injectors no longer came to the Centre—previously less than 10 per cent of injectors seen at the Centre were methadone injectors. Anecdotal evidence received by the Centre suggests that these users now buy their syringes from pharmacies, re-use their syringes for methadone injection, have switched to heroin injection, or any combination of these responses.

The Health Department also introduced tighter methadone takeaway policies in November 1998, reducing the number of takeaway doses allowed each week and each visit. The Kirketon Road Centre reports that this policy appears to have reduced the black-market supply in the area.

Queensland

The Queensland Police Service reported regularly dealing with people in possession of or affected by MS Contin (morphine tablets), Kapanol (morphine capsules), morphine injections, methadone (including physeptone tablets), pethidine, and cold and flu tablets (such as Sudafed), as well as Rohypnol and Valium. Police reported that the street price of morphine tablets was $200 for 20 tablets.

A number of drug and alcohol treatment centres in Cairns reported that MS Contin and other morphine-based drugs are very common and are often injected, as are various types of benzodiazepines.

South Australia

The diversion of prescription drugs is a problem in South Australia. In April 1998 South Australia Police established the forged prescription database to monitor the incidence of prescription forging to obtain pharmaceuticals. The database showed that most incidents took place in the metropolitan area and that the most commonly sought pharmaceuticals were pethidine injections, Rohypnol, Kapanol, morphine injections, temazepam (Euhypnos), Panadeine Forte, Maxalon and Valium (ABCI 1999).

South Australia Police commented on the increased use and diversion of pharmaceutical products (such as Sudafed) for use in the manufacture of amphetamine type substances. Efforts have been made to limit the diversion of these products by warning pharmacists in South Australia of this escalating trend. Many pharmacists volunteered to limit the quantity of Sudafed 90 on display, to reduce accessibility. This strategy also resulted in police receiving more information about people trying to buy large quantities of these products.

Warner Lambert, the manufacturer of Sudafed, is developing a reformulated tablet in an attempt to make illicit extraction of the active ingredient more difficult, but without compromising the product's efficacy or safety. The reformulated Sudafed was available in pharmacies from October 1999, and some competitors notified of these changes have expressed interest in taking similar measures (Warner Lambert 1999).

Western Australia

The Western Australia Police Service reported that the main pharmaceuticals encountered by police were Rohypnol, Serepax, Valium, dexamphetamines and MS Contin. Dexamphetamines are primarily used for attention deficit disorder in children, who may be prescribed these drugs from age 6 to 18 years. The Western Australia Drug Abuse Strategy Office reported that trade in dexamphetamines among school students, although not widespread, is constant. The media have reported that students are selling dexamphetamine tablets for $1 to $5 each, and the Western Australia Police Service confirmed it has investigated reports of students selling the tablets.

Victoria

Victoria Police mainly encountered Rohypnol, Serepax, dexamphetamines, products containing pseudoephedrine (for example, Sudafed), MS Contin, Endone (oxycodone) and Panadol. The Victoria Drug Action Team reported high morphine use in parts of rural Victoria. The Wesley Central Mission in Melbourne reported that a black market has developed in Naltrexone and Narcan, which are being sold on the street to users unable to afford heroin or as an alternative when heroin is in short supply.

Tasmania

Tasmania Police reported that its biggest drug problem is the diversion of prescription drugs to the illicit market through 'doctor shopping'. This situation is exacerbated by an increase in polydrug use and erratic supplies of illicit drugs. Tasmania Police commented on the high number of heroin overdoses where prescription drugs (especially benzodiazepines) are present. Police regularly encountered MS Contin and Kapanol.

Northern Territory

At the 1999 Commissioners Conference Northern Territory police reported that doctors are prescribing MS Contin in the absence of a methadone-treatment program for heroin addicts in Darwin. Police estimate that 80 per cent of heroin addicts are using MS Contin because of interruption to their heroin supply and MS Contin's cheaper price. Police also reported that under the federally subsidised Pharmaceutical Benefits Scheme a packet of 20 100-milligram MS Contin tablets can be bought for $3.20 then resold for $70–$100 per tablet, resulting in a considerable profit for the person for whom the drugs were initially prescribed. There are anecdotal reports of people presenting repeat prescriptions to different chemists over a number of days and then reporting that their prescription was stolen so that it can be re-issued.

The Northern Territory AIDS Council also stated that morphine, in all its various forms (MS Contin, Kapanol, Anamorph, and so on) is the drug most used in the Darwin area and that its use is steadily increasing. The Council surveyed a sample of needle exchange clients over a two-week period in July 1998 and again in October–November 1998 to gain a better understanding of injecting drug use in the Darwin area. In July 129 clients completed the survey; another 121 clients were involved in the October–November survey. The majority of respondents—74 per cent in July and 72 per cent in October–November—identified morphine as the drug they had most recently injected (Roberts 1998a, 1998b).

This trend is supported by the findings of the Australian Needle and Syringe Program Survey 1995–1998, which reported that morphine is by far the most frequently injected drug among injecting drug users in the Northern Territory, being used by 70 per cent of them. In all other jurisdictions, the prevalence of morphine injection was very low, at between nil and 6 per cent (Commonwealth Department of Health and Aged Care 1999).

Methods used to obtain pharmaceuticals illegally

Pharmaceuticals are illegally obtained in a number of ways:

- stealing and forging prescriptions;
- committing robberies, burglaries or thefts on doctors' surgeries or pharmacies;
- purchasing on the black market;
- inappropriate prescribing by health care professionals;
- doctor shopping.

In Australia the most common method is doctor shopping—multiple doctors are visited with the aim of obtaining as many prescriptions as possible.

In 1996–97 the Commonwealth Government acknowledged that doctor shopping was a problem. 'According to Health Insurance Commission data, this practice cost $31 million in additional Pharmaceutical Benefit Scheme (PBS) and Medicare spending during 1996–97 – not to mention the incalculable health and social cost of inappropriate medicines use' (Pharmaceutical Society of Australia 1999a).

The Health Insurance Commission defines doctor shoppers as people who see 15 or more different general practitioners or have 30 or more Medicare consultations in one year and who obtain more PBS prescriptions than are clinically necessary. The top 25 per cent of doctor shoppers travel widely and see many different practitioners, often on the same day, obtaining a disproportionate number of PBS medications compared with the general population.

A Health Insurance Commission review of 250 doctor shoppers found that many were welfare recipients and that 75 per cent had medical and significant non-medical problems. The costs to doctor shoppers are low since bulk-billing facilities are available for consultations and the cost of most prescriptions for holders of concession cards is $3.20 per PBS item—or nil once spending on PBS items exceeds $166.40 per calendar year, which is usually the case for high users such as doctor shoppers (Health Insurance Commission 1999).

Most doctor shoppers (82 per cent) are located in capital cities. The suburbs where most prescriptions are dispensed are Darlinghurst, Newtown and Kings Cross in Sydney; Frankston, St Kilda and Collingwood in Melbourne; Inala and Fortitude Valley in Brisbane; Salisbury in Adelaide; and Mirabooka in Perth. Benzodiazepines, codeine combinations, and narcotic analgesics are the most popular drugs for 82 per cent of doctor shoppers. Sixty per cent of doctor shoppers are female, and the average age of doctor shoppers is 36 years. A number of jurisdictions reported that the main pharmaceutical abuser police encountered were females aged from their late teens to 40 years (Health Insurance Commission 1999).

South Australia Police's prescription database revealed that the majority of scripts were forged rather than altered, suggesting that people are stealing blank prescription pads from doctors' surgeries to forge at a later date or to sell on the black market. Media reports claim that stolen blank prescription forms are being sold on the black market for between $5 and $20. The extent of the illegal diversion of prescription pads is unknown because there is no audit of the pads, which the Health Insurance Commission supplies free of charge to doctors. Because of this doctors may not be aware of the theft of prescription pads from their surgery. Among the initiatives suggested for tightening the system are numbering forms cheque-book style and using UV light–visible signatures similar to those used by banks (Rees 1998).

The Doctor Shopper Project

The Doctor Shopper Project is a Commonwealth government initiative aimed at reducing the abuse of prescription drugs in Australia. In the 1996–97 federal budget A$5.25 million was allocated over three-and-a-half years to the Health Insurance Commission to combat doctor shopping. People suspected of being doctor shoppers are identified from Medicare and PBS data. The Commission has counselled 1500 doctor shoppers, in consultation with the shoppers' doctors, to limit unnecessary visits to doctors and reduce the amount of medication supplied in future (Health Insurance Commission 1999).

Most doctor shoppers attend fewer pharmacists than doctors—about six pharmacists a year compared with an average of 25 doctors. The Pharmaceutical Society of Australia has recently been enlisted to help general practitioners and the Health Insurance Commission reduce the incidence of doctor shopping. Pharmacists keep records of people obtaining medications, and this puts them in an ideal position to identify possible doctor shoppers. They are encouraged to help doctors identify people at risk and to provide advice about the risks of taking large quantities of medications. From August 1999 'doctor shopping kits' will be sent to all approved pharmacists (Pharmaceutical Society of Australia 1999a, 1999b).

Patient privacy release forms provide information to help doctors monitor a patient's pattern of drug use, with the patient's permission. This information includes

- the number of different prescribers seen in the last six months;
- the number of prescriptions, the quantity of drugs, the calculated daily dosage, and the number of different prescribers for each PBS item obtained more than once during the last six months;
- the date of prescription and supply of every PBS item in the last two months.

In August 1999 the Department of Health and Aged Care launched the Health Insurance Feedback internet web site, providing health professionals with secure access to their patients' medical information and allowing them to compare profiles with peers in similar geographical locations. The Health Insurance Commission provides a free telephone service—the Doctor Shopping Hotline, on 1800 631 181—and provides information about the Doctor Shopper Project to health care providers.

The number of doctor shoppers recorded by the Health Insurance Commission has steadily decreased in the last few years:

- 13 240 in 1995–96
- 10 114 in 1996–97
- 9515 in 1997–98
- 8590 in 1998–99.

A concomitant drop in PBS prescriptions and Medicare consultations has also been recorded.

Diversion to the international market

Australian pharmaceuticals are of high quality and are accessible and affordable—this is not the case in many overseas countries—making them a very attractive black-market commodity. A common method of diverting pharmaceuticals overseas is via the postal service or in travellers' personal luggage. During 1998–99 Customs found eight 100-millilitre bottles of Codeine Linctus at Brisbane Airport in the luggage of a passenger who claimed the medication was for relatives in Vietnam. Each bottle was labelled by the dispensing pharmacy as prescribed for a different Australian PBS user.

It was reported in Hansard (17 February 1999) that the Health Insurance Commission and Australian Customs Service estimates suggest that about A$20 million of PBS prescription medicines are being inappropriately exported each year. People take pharmaceuticals overseas for use by family and friends or to resell on the overseas black market. This results in a substantial economic loss to Australia and gives cause for concern that people are using drugs not properly prescribed for them.

In April 1999 the Commonwealth's National Health Amendment Bill (No. 1) 1999 was passed, making it illegal to take or send large quantities of PBS medicines overseas, unless for personal use, and allowing for penalties of up to two years' imprisonment. The Act does not apply to non-prescription drugs or to medication bought at full price on private prescription. Customs officers have power to screen outgoing baggage and seize prescription drugs that contravene the Act. The Prescription Drug Smuggling Project, a joint initiative between the Health Insurance Commission and the Australian Customs Service seeks to educate and inform the community about the new legislation.

Outlook

There is limited recognition of the extent of pharmaceutical abuse in Australia and whilst this is the case the abuse of pharmaceuticals will continue to have major and adverse impacts in terms of health and social costs. Current measures being undertaken to reduce the incidence of doctor shopping appear to be succeeding. The continuation of these practices should further reduce the number of doctor shoppers, the abuse of pharmaceuticals by these persons and consequently the diversion of pharmaceuticals into the black market. The problem of illicit drug users obtaining pharmaceuticals by other than lawful means continues to be a problem requiring a concerted effort by law enforcement agencies, government departments and other sectors of the community.

Performance-enhancing substances

Anabolic and androgenic substances

Anabolic and androgenic substances are synthetic derivatives of the male hormone testosterone. All steroids have both anabolic (muscle-building) and androgenic (masculinising) effects but variations produce different effects on the user. Generally steroids producing the greatest amount of muscle growth are the most sought after. Anabolic steroids are manufactured in Australia and many parts of the world, including the United States, Thailand, India, Mexico and Europe. Among the street names for steroids are ‘roids’, ‘gear’, ‘juice’ and ‘product’ (CEIDA 1999c).

Human steroids are considered the best quality because of their high standards of manufacture, but they are difficult to obtain legally: medical professionals are permitted to prescribe them for medical reasons only—not for performance enhancement—and any breach of this requirement may result in disciplinary action against the prescriber.

Veterinary steroids are developed for animal use and are of a lower quality. They are more widespread than other steroids, and so law enforcement agencies are more likely to come into contact with them. Veterinary steroids contain the same chemicals as human steroids but are cheaper and easier to obtain. Despite their lower quality, they can give similar if not better results than human steroids. Maycock et al (1997) claim that some veterinary steroid preparations are purchased over the counter at agricultural supply stores for human consumption, despite not having been manufactured for and tested on humans.

Some steroids manufactured for humans are injectable; examples are Deca-durabolin, Sustanon 250 and Primobolan Depot. Others are taken orally; examples are Anapolan 50, Andriol, Primobolan and Proviron. Veterinary steroids are injected; examples are Spectriol, Stanosus 50, Testosus 100, Drive, Stanazol and Banrot (Peters et al. 1998; Taylor 1999).

Other substances

Human growth hormone, known as ‘hGH’ or ‘GH’, is a synthetic substance that is used medically to promote growth in people suffering from unusually short stature, or ‘dwarfism’. Technically it is not a steroid, but its performance-enhancing effects and the fact that it cannot be detected by current drug-testing methods have made it popular with some elite athletes. Among the side-effects of prolonged use are bone growth on the elbow or forehead, enlarged hands, and excessive fluid retention. Human growth hormone is sold on the black market, where it costs between $2500 and $4000 for a six-week course (Taylor 1999).

Erythropoietin (EPO) is a naturally occurring substance commonly used to treat anaemia. EPO boosts endurance by increasing the concentration of red blood cells which transport oxygen to working muscles. Excessive levels can thicken blood, resulting in high blood pressure and even heart attacks. A synthetic form of EPO is considered the drug of choice in endurance sports, particularly cycling. EPO is difficult to detect as it lasts for only three to five days in the human body.

Other performance-enhancing drugs are often taken to assist with training regimes or to counteract unwanted side-effects. Stimulants such as amphetamine type substances, ephedrine, pseudoephedrine and caffeine act on the central nervous system; they are used as a stimulant in training sessions and are also popular with security guards and crowd-control staff working late hours. The substance, clenbuterol is one of the beta 2 agonists. It is a bronchodilator often used by asthmatics that can also increase lean body mass and decrease fat content though it is dangerous if taken in high dosages.

Insulin and insulin-like growth factor (IGF) are used for increasing weight loss, particularly by pre-competition bodybuilders. Diuretics are used to reduce water retention and aid weight loss, while beta-blockers are used to treat hypertension and minimise hand tremors, which is useful in precision sports such as archery. To combat the side-effects of gynaecomastia (abnormal breast development), a drug called tamoxifen is used to block the action of the naturally occurring oestrogen hormone. Human Chorionic Gonadotrophin, or HCG, stimulates the body’s production of its own testosterone and is used at the end of a ‘cycle’ of steroid use. Painkillers and anti-inflammatory medications are also common. Gammahydroxybutyrate, or GHB, is another drug that is popular with bodybuilders because of the probably erroneous belief that it stimulates the production of growth hormones (CEIDA 1999c; Taylor 1999).

DHEA

DHEA (dehydroepiandrosterone), is an androgenic substance, which is a prohibited import in Australia under Schedule 8 of the Customs (Prohibited Imports) Regulations, unless a Commonwealth Government permit is granted. Schedule 8 lists the prohibited performance enhancing drugs including anabolic and androgenic substances, the category that DHEA is listed under. DHEA has fewer restrictions in other countries such as the United States and New Zealand.

A hormone produced in the adrenal gland of humans, DHEA is also available in synthetic form as tablets, capsules, a cream and a spray. Concentrations of DHEA peak in the human body at age 21 and decrease dramatically after the age of 40. Some experts suggest a relationship between low levels of DHEA in the body and the onset of degenerative disorders such as Alzheimer’s disease, although little clinical data exists to substantiate this relationship (Lifelink 1999). DHEA is marketed on the internet as a dietary and vitamin supplement recommended for use by the elderly. Among the various unproven ‘fountain of youth’ benefits claimed for DHEA are its anti-ageing and anti-obesity effects and its ability to increase libido and reduce stress. (New Way International Inc 1999)

DHEA is the most common performance-enhancing drug detected by Customs in Australia. The number of detections has increased steadily since 1993: up to 565 in 1998–99 from 385 in 1997–98 and 203 in 1996–97 (see Figure 6.1). The drug had come from the United States in 93 per cent of detections. Eighty-eight per cent of detections arrived via the post. DHEA seizures were made

predominantly in New South Wales, Victoria and Queensland, although Customs reported an increase in importations via mail into Tasmania. Approximately 65 per cent of all performance-enhancing drug detections consisted of DHEA, with the majority of these detections involving small-quantity, mostly personal-use mail orders arranged on the internet by purchasers unaware of the drug's prohibited status in Australia.

Patterns of use

Anabolic–androgenic steroids are generally administered orally by tablets and capsules, injected intramuscularly or, less commonly, absorbed via skin patches, creams, suppositories and nasal sprays.

A steroid paste called 'Nitrotain', which comes in a plastic plunger pump, is gaining popularity as an oral steroid in South Australia. Oral steroids are absorbed quickly but they can be harmful as the body tries to process a sudden influx of chemicals.

Injectable steroids consist of finely ground steroid powder with either an oil or water base. Oil is more commonly used because oil-based steroids have a longer-lasting action in the body. Water-based steroids, on the other hand, although not as long lasting as oil-based steroids, take effect more rapidly. Water- and oil-based injectable steroids are packaged in glass ampoules or vials or in single-use, pre-loaded syringes.

Intervals of use are determined by the amount of time the substance remains active in the body. Oral steroids are taken daily, usually morning and night. Oil-based injectable steroids are used once or twice a week and water-based injectable steroids are used every three days (Taylor 1999). A study, *Patterns and Correlates of Anabolic-Androgenic Steroid Use,* (Peters et al 1997) of 100 steroid users from New South Wales and the Australian Capital Territory in 1996–97 reported that almost all users (97 per cent) injected steroids, with 85 per cent injecting from the outset.

Steroids are usually taken in 'cycles' or 'courses', which vary from six to 16 weeks and involve a combination of three or four different drugs taken together, referred to as a 'stack'. Among the administration techniques are 'pyramiding', where the dose is increased to a certain level and then reduced back to a base level, and 'tapering', where the largest dose is taken at the beginning of the cycle and the dose is tapered off over four to six weeks (CEIDA 1999c).

Effects

The body adjusts to the increased levels of testosterone produced by each 'cycle'. To ensure that the benefits continue, 'stacks' become greater, 'cycles' become longer, and various combinations of steroids are tried. This means that steroids will be used for extended periods, with little or no break. Patterns of use vary from individual to individual and for each individual at different times. Among the effects steroids users seek are increased muscle growth, increased strength and endurance—leading to improved performance—and feelings of wellbeing and confidence. The desired effects cannot be achieved by steroid use alone: an equal commitment to a strict diet and exercise regime is also necessary.

Among the physical side-effects of steroid use are hair loss, liver problems, acne, sleeplessness, headaches, a raised cholesterol level, permanent short stature in adolescents, tendon injuries, water retention, hypertension and jaundice. Among the psychological side-effects are increased aggression, depression, increased irritability, mood swings, changes in libido (increase or decrease), paranoia and psychological dependence. Adverse side-effects for men include prostate problems, shrinking testicles, infertility caused by low sperm count, and abnormal breast development. Adverse side-effects for women include clitoral enlargement, smaller breasts, permanent deepening of the voice, menstrual irregularities, foetal damage (if pregnant) and increased body and facial hair.

'Roid rage' is a term used to describe bursts of aggressive behaviour by steroid users, although the evidence supporting the notion of 'roid rage' is still under review. This type of behaviour usually emerges at the extreme end of users' aggression and is typically short in duration. The study by Peters et al (1997) of 100 steroid users from New South Wales and the Australian Capital Territory found that 26 per cent of participants believed they had experienced 'roid rage'—although the experience they described may well have been 'road rage', temper tantrums or irritability. The survey concluded that many steroid users did, however, experience increased aggression.

Users

Steroids are legitimately used for treating medical conditions such as reproductive dysfunction in males and females, for stimulating growth, for promoting puberty in boys, for promoting weight gain in people with chronic debilitating illnesses such as HIV, and for treating eating disorders, breast cancer, osteoporosis and renal failure (Taylor 1999; Maycock et al 1997).

It is difficult to accurately gauge the number of people in Australia using anabolic steroids for non-medical purposes (Maycock et al 1997). Since 1993 the National Drug Strategy Household Survey of Australians aged 14 years and over has included questions about non-medical use of steroids. The 1995 and 1998 survey results for the categories of 'have ever used' and 'used in the past 12 months' are below 1 per cent and considered statistically unreliable. However the proportion of respondents who have ever used steroids for non-medical purposes rose from 0.6 per cent in 1995 to 0.8 per cent in 1998. Of all respondents in the 1998 Survey, 3.9 per cent of males and 0.7 per cent females used steroids for non-medical purposes. The Surveys found that few Australians associate the non-medical use of steroids with having a drug 'problem' (AIHW 1999).

A 1996 survey of 29 000 Australian secondary students' use of over-the-counter and illicit substances reported that use of steroids without a doctor's prescription was low. Across the six age groups studied, 2.7 per cent of male students and 0.8 per cent of female students had ever used steroids for non-medical purposes. Overall, boys were much more likely to have ever used steroids and to have used them in the preceding year, month or week (Anti-Cancer Council of Victoria 1999).

As noted in connection with pharmaceuticals, the Northern Territory AIDS Council surveyed 129 needle exchange clients in the Darwin area over a two-week period in July 1998 and another 121 over two weeks during October –November 1998. In July 1.6 per cent reported that the last drug they used was an anabolic steroid. In October–November the comparable figure was 2.3 per cent (Roberts 1998a, 1998b).

The 1996–97 National Drug and Alcohol Research Centre study by Peters et al (1997) of 100 anabolic–androgenic steroid users from New South Wales and the Australian Capital Territory provides details about a group often described as 'closed'. Steroid users are predominantly male, well educated, very health conscious, and usually from professional occupations with higher-than-average incomes. Although the media often present a picture of competitive athletes representing the greatest proportion of steroid users, the survey found that those in search of 'the body beautiful' are the main user group. Most steroid users commit themselves to a regime

of strict diet and intensive training in pursuit of body-image ideals. Body-image users made up 83 per cent of the sample which when broken down further comprised of 61 per cent non-competitive body image users and 22 per cent competitive body builders. Competitive athletes made up only 11 per cent of the sample and 6 per cent were people (such as security officers and crowd controllers) who used steroids to assist them in an occupation where physique and strength are considered important (Wood 1998b).

There are four main groups of users of anabolic–androgenic steroids:

- body-image users—persons wishing to enhance appearance such as competitive and recreational bodybuilders, people in the fashion and entertainment industries and gay men.
- sportspeople, who use steroids to improve their performance in competitive sports;
- occupational users, who use steroids to increase muscle size and strength to help them in their work—for example, security personnel and bodyguards, police, and members of the armed forces;
- adolescent users—young males, in particular—who use steroids in an attempt to emulate the physical stature of people portrayed in sporting competitions and popular media (CEIDA 1999c).

A medical assessment of 51 male anabolic–androgenic steroid users was conducted at St George Hospital in Sydney (O'Sullivan 1997). Apart from anabolic–androgenic steroid use, users reported taking growth hormone (one user), thyroxine (one), Human Chorionic Gonadotrophin (HCG) (two), clenbuterol (three), diuretics (four), and tamoxifen (five) in conjunction with steroids. Oral and intramuscular human and veterinary steroids were used individually or in combination (stacking). The main reason given for steroid use was to increase muscle bulk. The steroids were obtained from friends (61 per cent), gyms (25 per cent) and medical practitioners (14 per cent).

Regulatory changes

In most States of Australia anabolic–androgenic steroids are Schedule 4 substances; this restricts their supply to medical, dental or veterinary prescription under the Commonwealth Standard for the Uniform Scheduling of Drugs and Poisons. They can be legally obtained from medical practitioners only for specific medical conditions.

A new regulation enacted in Victoria during August 1999 lists steroids under Schedule 11 of the *Drugs, Poisons and Controlled Substances Act 1981* as drugs of dependence and makes specific provision for the offences of using, possessing and trafficking in steroids. The aim is to reduce steroid supply, and there is provision for sentences of up to 25 years' imprisonment and fines of up to $250 000 for second or subsequent trafficking offences. The new regulation details commercial quantities of steroids as being 5 kilograms or more (diluted or pure) and traffickable quantities as being more than 500 grams. Responsibility for prosecution has been transferred from the Health Department to Victoria Police. The Victoria Police Regulatory Impact Statement for the legislative changes states,

> … the well-documented and considerable risks to the health of users and possible consequences to the international standing of Australia and Australian athletes if the anabolic–androgenic steroid trade continues unchecked, are both strong arguments for the re-scheduling of these drugs.

Anabolic–androgenic steroids excluded from the regulation are listed in Schedule 6 of the Standard for the Uniform Scheduling of Drugs and Poisons; among them are implant preparations of trenbolone and testosterone for use in animals.

The Northern Territory's *Misuse of Drugs Act 1990* has anabolic steroids listed in Schedule 2 as a 'dangerous drug' and makes provision for the offences of possession, supply, manufacture and production of these drugs. It is an offence in the Australian Capital Territory, under the *Poisons and Drugs Act 1978*, to possess or sell anabolic steroids.

The federal Model Criminal Code deals with national uniformity of legislation in Chapter 6, under 'Serious Drug Offences'. The document states that steroids are not included in any international treaties prescribing controlled substances and that there is thus no international obligation for Australia to make new laws relating to the illicit steroid trade. Consequently not all States have enacted specific laws for trafficking in performance-enhancing substances. The document proposes the inclusion of steroids in drug-trafficking legislation because they offer

> … the same potential for criminal profit and the development of black market structures as any other drug for which demand is high and supplies limited. There are therefore persuasive arguments for subjecting the illicit trade to the same controls and penalties as other drugs. (Model Criminal Code Officers Committee 1998, p. 267)

In New South Wales an order under the *Stock Medicines Act 1989* restricting supply and use of veterinary steroids by veterinary surgeons came into effect on 17 July 1998. Penalties for offences against this order range to a maximum of $22 000 for individuals and $44 000 for corporations. The New South Wales Department of Agriculture audits veterinary surgeons and their clients, monitors for evidence of increased supply of steroids or testosterone, and has power to impose restrictions (New South Wales Agriculture 1998). A representative of the Department's Chemical Control Division reported that supply of veterinary steroids has reduced markedly since the new order came into effect and that vets are generally not buying steroids at the rate they did prior to the order's introduction (L. Cook (New South Wales Department of Agriculture) 1999, pers. comm., 21 September).

To limit the supply of veterinary steroids for human consumption, in December 1998 the Tasmanian Veterinary Board added new guidelines to a list of standards for veterinary practice in the State. The guidelines dictate that injectable anabolic steroids and testosterone preparations may be administered only by the attending vet and may not be supplied to clients or other people. Other guidelines cover matters such as recording, storing and managing supplies of Schedule 4 veterinary products. The Veterinary Board assesses breaches of these guidelines and may order fines of up to $5000, suspension of practice, or deregistration.

In October 1999 the Northern Territory Division of the Australian Veterinary Association supported an amendment to the Territory's *Veterinarians Act 1996* to specify that Schedule 4 injectable steroids may be administered only by a veterinarian and may not be supplied to third parties. The Veterinary Surgeons Board has been encouraged to take strong action against vets found guilty of directly supplying anabolic steroids for human use. Directions relating to handling injectable anabolic steroids and applying to veterinarians, pharmacists and wholesalers also exist under the Territory's *Poisons and Dangerous Drugs Act 1983*.

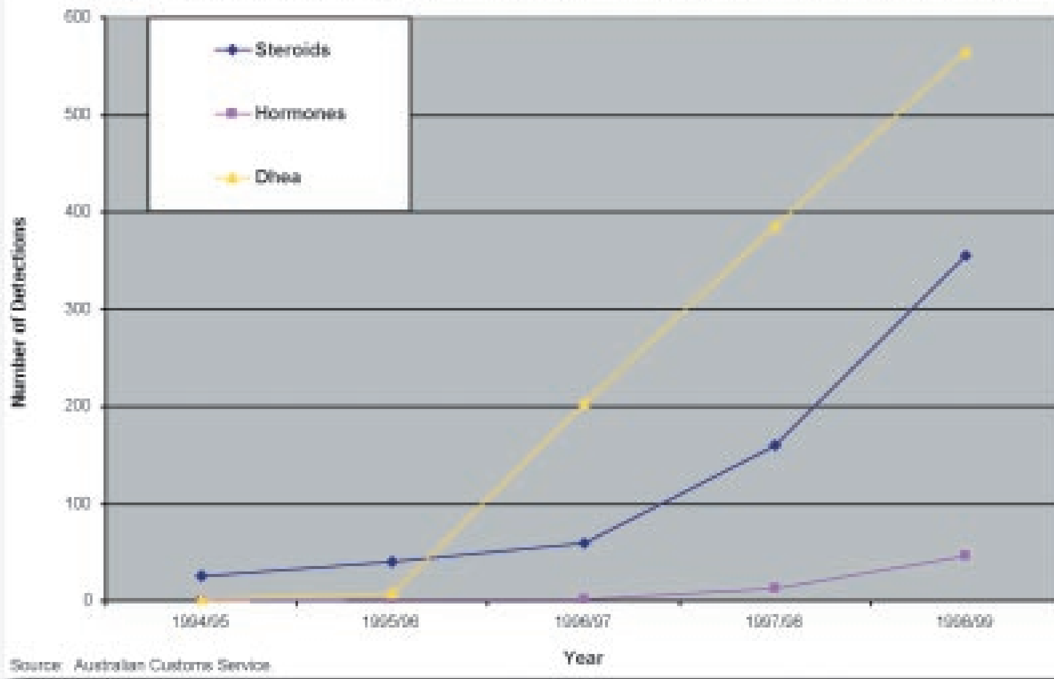


Figure 6.1: Customs detections of performance-enhancing drugs, by number and type, 1994-95 to 1998-99

Source: Australian Customs Service

On 3 November 1999 the Minister for Justice and Customs, Senator Amanda Vanstone announced that legislation would be introduced to provide for tougher penalties for the importing of performance-enhancing drugs. The penalty for importing anabolic and androgengic substances, human growth hormone (hGH) and erythropoietin (EPO) will be doubled to $100,000. For serious import offences, including the trafficking in anabolic and androgenic substances, the court may gaol the convicted offender for up to five years in addition to the $100,000 fine. The legislation to establish increased penalties will be introduced in time for the 2000 Sydney Olympic Games.

Detections

During 1998–99, Federal, State and Territory police made a total of 109 seizures—69 in New South Wales, 29 in Queensland, eight in the Australian Capital Territory, two in the Northern Territory, and one in Western Australia. Eighty-six arrests for steroid-related offences were reported during 1998–99, compared with 71 the year before, an increase of 21 per cent. Fifty-three arrests were reported in New South Wales, 28 in Queensland, 2 in the Australian Capital Territory, 2 in the Northern Territory and one in Western Australia. The majority of arrests were males (87 per cent) however the number of females arrested in 1998–99 is double the figure in 1997–98. The national arrest data for steroid-related offences indicates the core user group is males aged 15–35 years, which is when body image is most important and athletes are at their peak.

There was a notable increase in Customs detections of all performance-enhancing drugs during 1998–99 (see Figure 6.1). Forty-seven hormone importations were detected, compared with 13 in 1997; this represents an increase of 261 per cent. Customs detected 356 steroid importations (not including DHEA and hormones) in 1998–99, compared with 160 the year before; this represents an increase of 122 per cent. Sixty-eight per cent of hormone and steroid detections originated from the United States; no other country featured significantly. The majority of

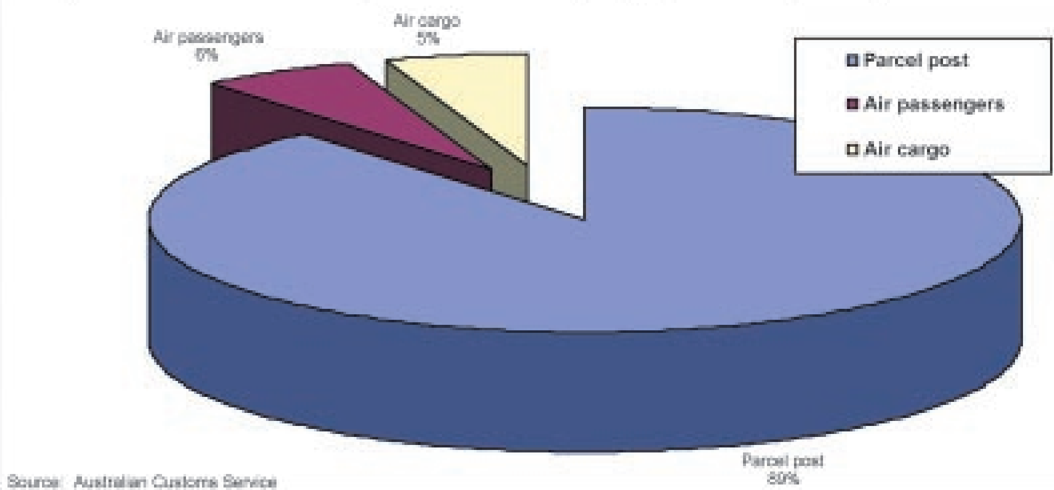
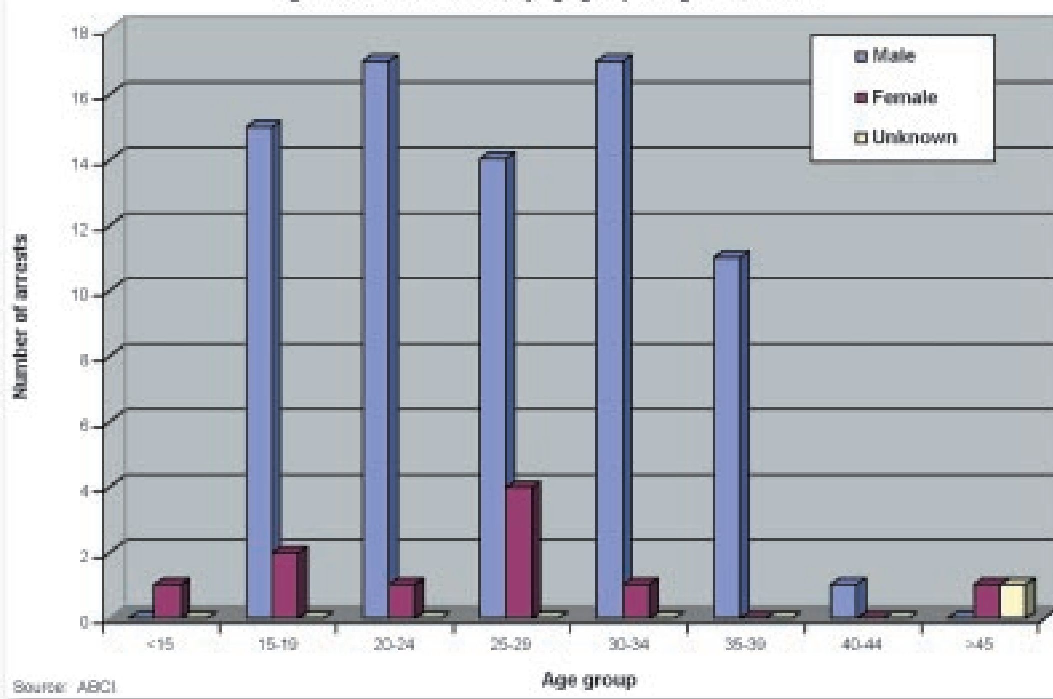


Figure 6.2 Customs detections of performance-enhancing drugs, by mode of importation, 1996-97 to 1998-99

Source: Australian Customs Service



importations were detected in the post (90 per cent), followed by air passengers (7 per cent) and air cargo (2 per cent). Most detections were made in New South Wales, Victoria and Queensland. Seventy-five per cent of steroids detected were in capsule and tablet form. Anabolic–androgenic steroids and natural and manufactured growth hormones are listed in Schedule 4 and 8 of Australia's Customs (Prohibited Imports) Regulations, which prohibit importation without a Commonwealth Government permit.

Figures 6.1, 6.2 and 6.3 provide details of seizures of performance-enhancing substances and arrests for steroid-related offences.

Current situation

According to the Model Criminal Code Officers Committee (1998) the illicit trade in steroids is steadily increasing. Police intelligence and the media have pointed to a flourishing illicit national and international trade in veterinary steroids, which are repackaged and sold for human consumption, despite the uncertainty of dosage and the potential health risk to users.

Police report that supplies of performance-enhancing drugs are more often available at gyms. Among the dealers may be gym owners, personal trainers and members of the power-lifting and bodybuilding industry. Outside the gym environment, the main sources of supply are users in the security industry, outlaw motor cycle gangs, and the horse-training industry. Dealers in performance-enhancing drugs in the various States and Territories network in order to manage variations in local supply and demand. People can also buy steroids and other performance-enhancing substances overseas when competing in international competitions; these supplies are usually sent home by mail or concealed in personal luggage. The postal service is a popular method of moving steroids within Australia and from overseas, and purchases are increasingly being made over the internet (Model Criminal Code Officers Committee 1998; Taylor 1999).

In a report from the New South Wales Bureau of Crime Statistics and Research, Maycock et al (1997) reports that performance-enhancing drugs are easy to obtain in Australia and overseas and that for most users the black market is the main source. 'Black-market anabolic steroids' means counterfeit, veterinary, illegally imported and any other sources of such steroids, including those used by someone other than the person to whom they were originally prescribed.

There are reports that Australian-made counterfeit human and veterinary steroids have been available for many years, although none were detected by law enforcement agencies during 1998–99. The counterfeit items are difficult to identify, and most users would be unable to differentiate them from the real item. (Taylor 1999) Black-market products are obtained through forged medical prescriptions, theft, product diversion, illegal imports, and illicit manufacture. The problem of large-scale domestic diversion of performance-enhancing substances certainly exists although it is difficult to quantify across State and Territory jurisdictions. The illicit supply of performance-enhancing drugs is contributed to by unethical veterinary surgeons and horse breeders and trainers who have access to supplies of veterinary steroids and by unethical doctors and pharmacists who have access to supplies of human steroids.

Some users obtain their steroids legally with a prescription from a particular medical practitioner; others go doctor shopping, a process that has been described as a safer and sometimes more reliable method of obtaining quality human steroids than dealing with the black market (National Drug and Alcohol Research Centre 1996).

Black-market prices of performance-enhancing substances are typically inflated. Banrot, a veterinary steroid used in the treatment of 'pizzle rot' (a disease in sheep), is available with veterinary authorisation in a 200-millilitre bladder pack and sells for about $35 from agricultural outlets. On the black market it sells for $300. The black-market price for veterinary oil-based injectables is around $70 to $90 for a 10-millilitre bottle. Human steroids, which are available from medical practitioners and pharmacists, cost between $40 and $60 in oral form, while injectable steroids are more expensive, ranging from $70 to over $200 (Taylor 1999; Maycock et al 1997).

Queensland University of Technology reported to the Bureau that Brisbane alcohol and drug treatment centres had seen an increase in the number of people seeking information prior to using steroids. Generally, the alcohol and drug treatment centres and researchers reported that use of performance-enhancing drugs is stable and possibly increasing, although the situation is difficult to assess because users are particularly protective of their anonymity.

Investigating offences relating to performance-enhancing drugs is not a high priority for law enforcement agencies in Australia: it is often regarded as a matter for sports administrators rather than law enforcement. Steroid use and dealing is not highly visible: it takes place in a 'closed shop' environment and is the province of low-profile users not otherwise linked to the criminal environment. Its low priority can also be attributed to a lack of awareness of offence provisions, legislation prescribing inadequate penalties, and a perception that performance-enhancing substances have less harmful effects than other illicit drugs.

Drugs in sport

Performance-enhancing drugs have been used throughout the history of competitive sport. The extensive media and information network available today, however, means that public exposure of worldwide drug controversies has never been greater. Interest in drugs in sport will continue to intensify here and overseas, as the world focuses on Australia's preparation for the 2000 Olympic Games. Efforts to eradicate drugs in competitive sport are continuing to be strengthened within national and international sporting organisations that are working in the interests of fair play, the health and safety of athletes, and the integrity of the Olympic movement.

Although responsibility for policing the trafficking in illicit substances into Australia and within the wider community rests with law enforcement agencies, responsibility for policing athlete's use of banned substances—within the context of the Olympic Games and competitive sport generally—rests with Olympic committees and relevant sporting organisations (Olympic Intelligence Centre 1999). The Australian Sports Drug Agency was established in 1990 as a Commonwealth statutory authority to deal with concerns about the use of drugs in sport. The Agency's primary role is to conduct comprehensive drug-testing programs aimed at dissuading elite athletes from taking prohibited substances. It works in partnership with State and Territory, national and international sporting organisations to develop comprehensive responses to the problem of drugs in sport. It operates a Drugs in Sport Hotline (1800 020 506) and maintains a comprehensive website (www.asda.org.au) (Australian Sports Drug Agency 1999).

At the World Conference on Doping in Sport, held in February 1999 in Lausanne, Switzerland, the International Olympic Committee resolved to establish an independent international anti-doping agency, with start-up capital of US$25 million, to be operational early in 2000, in readiness for the Sydney 2000 Olympics. The new agency will give particular consideration to expanding out-of-competition testing, coordinating research, promoting preventive and educational programs, and harmonising scientific and technical standards and procedures for analyses and equipment.

In August 1999 the President of the International Olympic Committee, Juan Antonio Samaranch, declared that the Olympic Movement Anti-doping Code (adopted at the February Conference) would be effective from 1 January 2000. The Lausanne Declaration stipulates a minimum of two years' suspension from competition for any athlete found guilty of a first doping offence, with the possibility of modification in 'specific, exceptional circumstances'. More severe sanctions will apply to coaches and officials found guilty of violations of the Code. Mr Samaranch said that all the constituents of the Olympic Movement now have a common instrument with which to combat doping in sport (International Olympic Committee 1999).

In May 1999 the Australian Government released its 'Tough on Drugs in Sport' Strategy, with a $5.9 million package focusing on anti-doping measures (including research into improved detection methods), education, and preventing the importation of banned substances into Australia. Among the primary measures are increased drug testing—in and out of competition—and an education campaign to inform athletes of the risks involved. The Strategy maps out 33 key actions, covering legislation, policy, research, education, and regulatory and international initiatives, to combat doping in sport (Australian Sports Drug Agency 1999).

On 1 August 1999 the *Australian Sports Drug Agency Amendment Act 1999* came into force. The amendments

- give the Australian Sports Drug Agency greater flexibility to operate under broader international anti-doping standards, rather than those prescribed by the International Olympic Committee Medical Code;
- streamline the process for managing drug-testing results;
- improve assessment of positive test results by offering access to scientific and medical expertise when required;
- allow the Agency to provide expert scientific and medical information to sports doping tribunals;
- establish a system for approving the use of banned substances for therapeutic purposes, where such use is recognised by the relevant sport's anti-doping rules;
- allow the Agency to provide ancillary sports drug-testing services—for example, safety checks for the presence of substances that can compromise the safety of participants;
- enable State and Territory complementary drug-testing legislation to confer powers on the Agency so that it can undertake testing at the State and Territory level;
- enable the Agency to receive information from the Australian Customs Service about the importation of performance-enhancing substances that are prohibited imports.

The Minister for Sport, The Hon. Jackie Kelly MP, said the amendments 'ensure that Australia's anti-doping regime is more efficient, fairer to competitors subject to drug testing but, more importantly, tougher on drug cheats (Australian Sports Drug Agency 1999).

During 1999 the Australian Institute of Sport incorporated an educational drugs-in-sport program involving athletes, coaches, administrators, and sports medicine and residential staff. Nearly 600 residential and non-residential AIS scholarship holders have attended workshops presented by Agency and Institute sports medicine staff, who provided participants with an education pack containing anti-doping information (Australian Sports Drug Agency 1999).

From July 1999 to September 2000 the Agency plans to conduct over 7000 drug tests on Australian athletes training for the Olympics in Australia and overseas. It intends to increase 'no-notice' testing outside competitions and use its knowledge of particular sports and groups of athletes to test at times when cheats are most likely to be using banned substances. In the 15 days before and during

the two weeks of the Games, the Sydney Organising Committee for the Olympic Games will conduct 2000 tests and provide results within 24 hours of the sample being taken (Linnell 1999).

The challenge for drug-testing agencies is performance-enhancing drugs such as human growth hormone (hGH), erythropoietin (EPO) and insulin growth hormones, which are gaining popularity with some elite athletes because they are undetectable at present. Tests have been developed in Australia but they still require validation studies and the International Olympic Committee's approval before they can be implemented. The question is, Will these tests be in use before the Sydney 2000 Games? A government media release in September 1999 outlined how concerns about the growing abuse of EPO in sport have led to new restrictions on imports of the drug, to control its use by athletes in the lead-up to the Sydney Olympics. Importation of EPO is now prohibited. Customs officers can seize the drug if the passenger does not have a legal permit or a prescription from a medical practitioner (Minister for Justice and Customs 1999).

The Northern Territory, the Australian Capital Territory and, recently, Victoria are the only jurisdictions with legislation specifically regulating anabolic–androgenic steroids, although not all banned substances are included. A report released in August 1998 by the Australian Olympic Committee recommends uniform safeguards across Australia since any avenue for abuse in one State or Territory is likely to be exploited elsewhere. The Committee reported that research into penalties for the manufacture, importation and trafficking of sports drugs revealed the penalties have little deterrent effect and are less severe than penalties for illicit social drugs. The Committee is seeking from the Commonwealth and State and Territory governments a commitment to:

- amend the relevant legislation to ensure that the manufacture, importation, export, trafficking and illegal possession and use of 'hard' sports drugs are subject to the same restrictions and penalties as the serious illicit social drugs;
- provide sufficient and appropriate resources to ensure that an effective regime is established for combating the manufacture, importation and illegal use and possession of these drugs (Australian Olympic Committee 1998).

'Hard' sports drugs are defined by the Australian Olympic Committee as anabolic–androgenic steroids, beta 2 agonists (other than salbutamol, salmeterol and terbutaline) and peptide and glycoprotein hormones and analogues.

The factors associated with the use of performance-enhancing drugs in the wider community differ from the factors associated with the use of drugs in sport. A desire to win and please coach and family, the thrill of victory, and the social and economic rewards of sporting success create pressures for athletes and may lead them to use banned substances in search of a 'competitive edge'. The type of substance used is determined by the type of sport, how detectable the substance is, the substance's specific performance-enhancing attributes, and the controls on the substance's use. Drug testing and the chance of detection are a constant consideration for competitive athletes and will influence decisions about which substance types and administration techniques to use. If use of performance-enhancing drugs is being planned, an athlete's extended network—including people with knowledge of using such drugs—will be involved to help the athlete in their illicit program and to procure the banned substances that are seen to be needed (Olympic Intelligence Centre 1999).

Athletes have devised a number of ways of circumventing current drug-testing regimes, including using undetectable substances, following strict drug-administration programs, and using chemically altered 'designer' steroids or synthetic precursors of naturally occurring hormones. As Dr Jordi Segura, head of drug testing at the 1992 Barcelona Games and Secretary of the Doping Sub-Commission of the International Olympic Committee stated, '… Athletes who cheat [will always] try to shift to new drugs … It takes the laboratories time to catch up. It has always been like that' (Olympic Intelligence Centre 1999).

Outlook

Customs data indicate that importations of performance-enhancing drugs are increasing particularly DHEA. Police intelligence and anecdotal reports suggest that trafficking in performance-enhancing drugs occurs across all jurisdictions and is probably organised by criminal groups or individuals for financial gain. Illicit sale and distribution are likely to continue, particularly in the absence of adequate legislation and given the potentially large profits available to dealers. A uniform legislative approach across States and Territories would unite law enforcement agencies by clarifying responsibilities and imposing realistic penalties with a deterrent value matching that applying to other illicit drugs. New, tougher penalties proposed by the Commonwealth Government in the latter part of 1999 will be of assistance.

The Olympic Games will stimulate an increase in the importation, sale, use and probably manufacture of performance-enhancing drugs and other illicit drugs well before and during the actual Games event. Although there is limited information collated on the extent of the domestic diversion of performance-enhancing substances, this activity is likely to grow in response. The considerable financial gains to be made will motivate criminal groups and individuals in Australia and overseas to exploit this forthcoming event. Procuring and distributing these illicit substances will require forward planning before the Olympics. This may well have wider implications for the States and Territories. If drug testing for EPO and human growth hormone has not been approved and implemented in time for the Olympics, demand for these substances will be generated by competitive athletes seeking to circumvent the Games drug-testing program.

Hallucinogens

There is an urgent need for standardised recording of hallucinogen-related information. Some law enforcement agencies and health surveys continue to group hallucinogenic drugs together, which makes it difficult to analyse the impact of LSD as a separate entity. To accurately assess trends in LSD consumption, arrests and seizures, specific data are required.

According to the International Narcotics Control Board (1999), the popularity of hallucinogens such as LSD is increasing worldwide, and the drugs are being smuggled from the United States and Europe into countries such as Australia.

LSD

LSD—lysergic acid diethylamide—is a synthetic drug and is the best known and most potent of the hallucinogens. Discovered in 1938 by Swiss chemist Dr Albert Hoffman, it was used as a treatment for people with mental illness and for terminally ill patients. It is no longer used for either of these purposes. During the 1960s, LSD was the drug of choice of the 'hippy' culture. Its common names are 'acid', 'trips', 'mellow', 'tabs', 'blotters', 'dots', 'tickets', 'microdots' and other terms related to the design on the blotting paper into which the drug is impregnated.

Table 6.2: Principle doping practices in Olympic sport				
Drug	**Major effect**	**First used in sport**	**Major sports affected**	**Current level of use in sport**
Amphetamine type substances	Reduces fatigue	1940s	Cycling	Light, because of ease of identification and availability of alternatives
Ephedrine and related stimulants	Reduce fatigue	1970s	Most sports	Heavy
Caffeine	Reduces fatigue	1800s	Most sports	Heavy, but mainly in conjunction with other drugs
Blood doping	Increases stamina	1970s	Endurance sports	Moderate
Erythropoietin	Increases stamina	Late 1980s	Endurance sports	Moderate to heavy and rising
Barbiturates	Reduce anxiety without loss of judgment or coordination	1970s	Modern pentathlon	Light
Beta-blockers	Reduce anxiety, improves control and concentration	1970s	Shooting and archery	Moderate
Anabolic steroids and anabolic agents	Promote increases in lean muscle mass, strength and endurance	1950s	Most sports	Heavy
Human growth hormone	Promotes increases in lean muscle mass, strength and endurance	Late 1980s	Most sports	Moderate to heavy and rising
Diuretics	Achieve rapid weight loss, mask the use of other drugs	1970s	Weight-related sports	Light, because of ease of identification

Source: Houlihan (1999).

The most common type of LSD is the blotter or tab form. Crystalline LSD is produced in the initial stage of production, then diluted and soaked into sheets of perforated blotting paper of approximately 100 squares, or 'tabs', 5 millimetres square. The blotting paper is usually printed with a cartoon picture or a logo. LSD is also available in tablet, capsule, liquid and powder form. The Texas Commission on Alcohol and Drug Abuse (1999) has reported that among new types of LSD are sugar cubes; a gel tab called a 'jelly bean', which is about the size of a fingertip; and liquid LSD.

An oral dose of 25 micrograms of LSD—equal to a few grains of salt—is enough to produce vivid hallucinations. Law enforcement personnel coming into contact with LSD should take care when handling it because it can be absorbed through the skin. After ingesting LSD the effects come on in 30 to 60 minutes, peak at three to five hours, and usually last for 10 to 12 hours.

LSD produces changes in perception, thought and mood. Among its physical effects are dilated pupils, increased heart rate and blood pressure, low body temperature and nausea. Among its sensory effects are distorted perceptions of the size and shape of objects, movements, colour, sound and touch. Among the psychoactive effects are hallucinations, emotional instability and paranoia. LSD can reduce a person's ability to think clearly or see dangers and thus the chance of personal injury or injury to others—for example, when operating machinery or driving a vehicle. Among the adverse reactions to LSD are flashbacks, where the effects are experienced some time after the initial dose, and 'bad trips', which can involve feelings of panic, paranoia and a loss of reality. Although not considered addictive, LSD produces tolerance and, if it is used repeatedly, larger doses are required to achieve the same effect. It can also cause severe psychotic effects, but long-term hospitalisations and deaths are rare.

Current situation

LSD production is believed to be centred on the west coast of the United States, particularly in San Francisco, northern California and the Pacific northwest. Historically, few chemists have been arrested and even fewer LSD laboratories seized—the US Drug Enforcement Administration seized only one clandestine LSD laboratory in 1998—so there is little information available about the identity and structure of LSD-trafficking organisations. Wholesale quantities of LSD are often concealed in greeting cards or magazines and sent worldwide via postal services (US Drug Enforcement Administration 1999).

In New Zealand LSD is available throughout the country; it is the second most widely used illicit drug after cannabis and has reportedly been used by nearly 3 per cent of the population. In 1998 over 38 000 LSD tabs were seized, representing a threefold increase on seizures for 1997, and New Zealand police predict that importation of LSD will continue to grow. The main method of importing is via the postal system.

The 1995 and 1998 National Drug Strategy Household Surveys sought information about hallucinogen (LSD, synthetic hallucinogens, magic mushrooms and datura) use in Australia. In the 1998 Survey, 2.8 per cent of respondents reported having used

hallucinogens in the preceding 12 months: 89.6 per cent of them had taken tabs, 4.2 per cent liquids, 26.2 per cent magic mushrooms and 1.3 per cent datura. These figures suggest that the majority used LSD. The 1995 Survey results showed that 5.5 per cent of all Australians had ever used hallucinogens; the proportion increased to 10 per cent in 1998, making hallucinogens the second most used illicit drug in Australia after cannabis. This is a reflection of the current situation in New Zealand (AIHW 1999; P. Williams (Australian Institute of Criminology) 1999, pers. comm., 15 September).

The figure of 10 per cent is considered to be the result of population momentum, and results for recent use are thought to provide a more accurate picture of the current situation. Hallucinogen use in the preceding 12 months shows an increase from 1.8 per cent in the 1995 Survey to 3 per cent in the 1998 Survey. Users of hallucinogens in the preceding 12 months fall into the following age groups: 25 per cent aged 14–19 years; 38 per cent aged 20–24 years; and 3.7 per cent aged 25 years or more. Those who had ever used hallucinogens were predominantly in the older age groups—67.5 per cent were aged 25 years or more, suggesting that many users experimented with hallucinogens when younger but have not continued to use them. This may also explain the 'having ever used' category jumping from 5.5 per cent in 1995 to 10 per cent in 1998.[1] Like most illicit drugs, LSD is usually first obtained from friends and acquaintances, although the 1998 Survey showed an increase from 7 per cent to 15 per cent for people who obtained LSD from dealers (AIHW 1999; P. Williams (Australian Institute of Criminology) 1999, pers. comm., 15 September).

A 1996 study of over 29 000 Australian secondary students aged 12 to 17 years and their use of over-the-counter and illicit substances showed that hallucinogens were the most commonly used substance after cannabis and inhalants. Nine per cent of all secondary students had some experience with hallucinogens, although it was mainly experimental in nature (Anti-Cancer Council of Victoria 1999). The low cost of LSD compared to ecstasy and amphetamine type substances contributed to LSD's popularity among young people, who are considered to be price-sensitive when buying drugs. Some drug and alcohol agencies report anecdotally that LSD is readily available, growing in popularity, and the 'heavy' drug of choice among young people, particularly the 'dance party' population.

Law enforcement agencies report that outlaw motorcycle gangs, backpacker tourists, and nightclub and dance scene patrons are associated with distributing LSD. Purchases often take place in darkened areas of licensed premises, particularly nightclubs, discos and dance party venues.

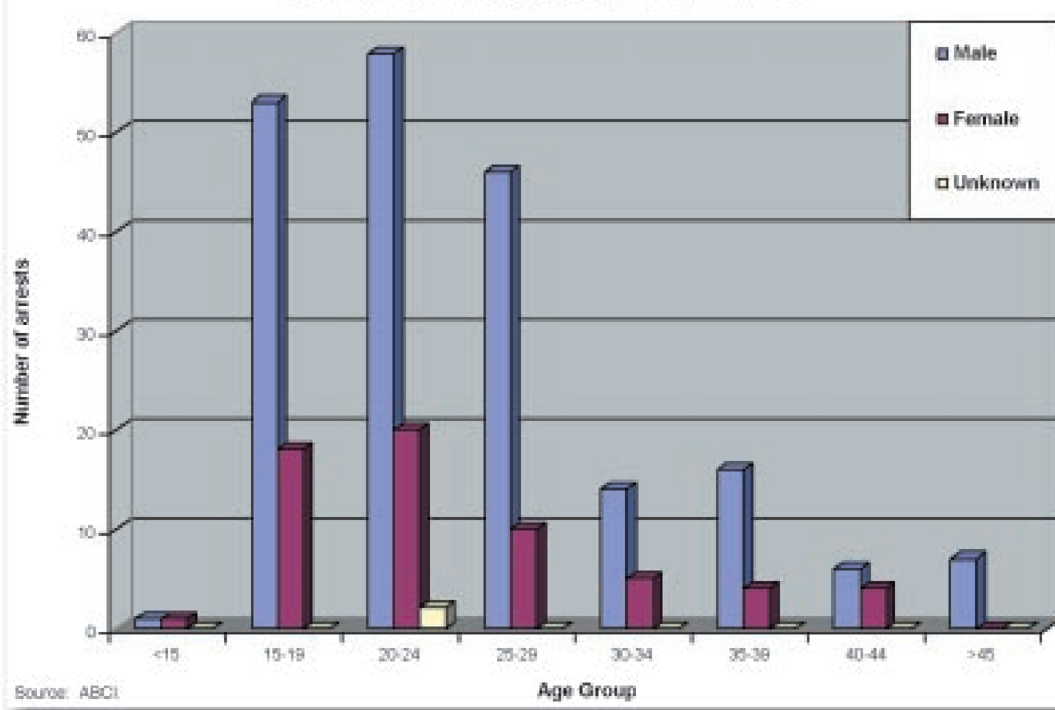
During 1998–99 a single LSD tab cost $10–$25 in New South Wales, $25 in Victoria, and from $20 to $25 in Queensland. Bulk amounts of between 25 and 100 tabs reduced the price per tab to $10–$15 in Victoria. Bulk purchases of 100 to 1000 tabs of LSD sold for $4 to $10 per tab in New South Wales and $8 to $12 in Victoria; more than 1000 tabs sold for $3 to $6 per tab in New South Wales and $5 in Victoria. LSD prices in Victoria and New South Wales decreased slightly in 1998–99, although prices for bulk purchases in New South Wales remained stable.

A number of police jurisdictions reported that LSD availability was stable or increasing. Arrest figures for LSD offences in 1998–99 show the core user group to be males aged between 15 and 29 years (see Figure 6.4). The Queensland Police Service reported that LSD is common, especially in the nightclub scene. The New South Wales Police Service reported seizing new LSD logos in 1998–99; examples are a *South Park* design, a Nike tick, a Buddha face, and a skull and crossbones.

The Forensic Science Centre in Melbourne is responsible for national collection of all known LSD logo designs, each of which is given a unique reference number—a practice adopted by other countries around the world.

Detections

During 1998–99, 515 seizures of hallucinogens were recorded, a slight decrease on the 521 seizures made in 1997–98. The majority of these seizures were probably LSD, included in a larger



hallucinogen group. Seizures for each jurisdiction for 1998–99 (and 1997–98) were as follows:

- New South Wales—159 seizures (176 in 1997–98);
- Queensland—105 seizures (146 in 1997–98);
- Victoria—100 seizures (65 in 1997–98);
- Western Australia—81 seizures (119 in 1997–98);
- South Australia—63 seizures (2 in 1997–98);
- Australian Capital Territory—4 seizures (7 in 1997–98);
- Northern Territory—3 seizures (1 in 1997–98).

No seizures were recorded for Tasmania in 1998–99 (5 in 1997–98).

Customs detected 12 importations of LSD into Australia in 1998–99. All the LSD was in tab form and came from the Netherlands (three), the United Kingdom (three), India (two), the United States (two) Brazil (one) and Thailand (one). The detections were made in New South Wales (seven), Victoria (three), Queensland (one) and Western Australia (one).

LSD manufacture was reported in April 1999, when New South Wales Police Service officers arrested a male and female after a search warrant was executed on two addresses at Collaroy in Sydney. Blotting paper with 'strawberry' and 'frog head' logos was also found at the scene, along with precursor chemicals.

Mushrooms

A number of naturally occurring hallucinogens, such as plants and fungi, are found in Australia. 'Magic mushrooms', 'golden tops' and 'blue meanies' are terms that refer to mushrooms containing the hallucinogen psilocybin. Mushrooms can be brewed to produce a tea or they can be eaten in milkshakes or in pasta dishes, sandwiches, and so on.

These mushrooms produce effects similar to but milder than those of LSD; the effects last about six hours. Heavy doses can cause stomach pain, nausea, vomiting, shivering and dizziness. People must take care if they are using mushrooms found in the wild because poisonous mushrooms can cause serious medical problems. Kits containing magic mushroom spores are sold through a number of internet sites.

Current situation

Customs reported 33 detections of psilocybin being imported into Australia in 1998–99, an increase of 266 per cent on the nine detections in 1997–98. The majority of importations arrive as syringes or bottles of mushroom spores suspended in solution. Twenty-one detections came from the Netherlands, 10 from the United States and one each from France and New Zealand; all detections but one arrived via the postal service. Twenty-three detections were made in New South Wales and small numbers in Victoria, Western Australia and Queensland. Jurisdictions reported isolated instances of magic mushroom use and low arrest rates in the last few years. The main users of mushrooms are males in the 15 to 29 age group. Drug and alcohol agencies reported low use on the north coast of New South Wales and in rural areas of Victoria.

Outlook

Hallucinogen (including LSD) use showed an increase during 1998–99, despite a small number of detections and low arrest rates. The relatively low cost of LSD in comparison with other illicit drugs such as ecstasy will continue to attract price-sensitive young people. The ease with which LSD can be concealed and transported, in envelopes and parcels via the postal service, also probably contributes to its increased availability. The number of people using the internet is increasing in Australia, and this allows those wishing to experiment with drugs such as magic mushrooms to obtain them relatively easily.

Other substances

GHB

GHB—gamma-hydroxybutyrate, or sodium oxybate—is a chemical with depressant properties that affects the central nervous system and is gaining popularity as a recreational drug. The manufacture of GHB involves adding other substances to the chemical gamma butyrolactone (GBL). For many years GHB was used as an anaesthetic in human surgery but its popularity declined because its pain-killing properties proved inadequate. During the 1980s GHB was sold in health food shops in the United States for reducing weight, inducing sleep, and stimulating muscle growth. It was withdrawn from sale in 1990, after adverse effects of nausea, uncontrollable shaking and coma had been reported. Its usefulness in treating narcolepsy (a sleep disorder causing people to suddenly fall asleep) and alcohol withdrawal is being investigated in the United States.

GHB is usually an odourless, colourless liquid with a slightly salty taste but it is also available as a fine white powder and in capsule form. Food dye is sometimes added to make the drug more presentable. Oral administration is most common, although there are some reports of injection. The drug is easily combined with water or alcohol and has been detected in plastic water bottles, sport bottles, and bottles of mouthwash and shampoo in the United States.

Often referred to as a 'date rape' drug, GHB has anaesthetic qualities that may render a victim compliant or helpless and unable to recollect events. There is concern that sexual predators may frequent the dance party – club scene where GHB is available with the intention of sexually assaulting knowing or unknowing users. Common names for GHB are 'fantasy', 'grievous bodily harm', 'GBH', 'liquid ecstasy' and 'easy lay'.

GHB is fast-acting: its effects are noticeable in 5 to 15 minutes and peak 20 to 60 minutes after use. GHB produces effects similar to those of alcohol—euphoria, dizziness and increased confidence, for example, but it has no hangover effects. Higher doses may cause vomiting, nausea, anxiety, confusion, hallucinations, blurred vision, respiratory depression and coma. Using GHB with alcohol, tranquillisers and other depressants intensifies the effects, increasing the possibility of overdose. The effects are also influenced by the user's body weight and the concentration of the drug. GBL produces the same effects as GHB.

In Australia and overseas GHB is used as a recreational drug by young nightclub patrons and party goers and it is reportedly popular in the gay community. A belief that it stimulates the release of growth hormone in the body makes it also popular with bodybuilders. Intelligence suggests that outlaw motorcycle gangs are involved in GHB distribution in Australia.

Current situation

In Australia both GHB and GBL are prohibited imports under the Customs (Prohibited Imports) Regulations, where they are listed as restricted Schedule 4 substances. Imported under permit for legitimate industrial purposes, GBL is used to manufacture products such as paint thinner and varnish. GHB is listed in Schedule 9 of the Australian Standard for the Uniform Scheduling of Drugs and Poisons, enabling the States and Territories to restrict its sale, supply, possession and use. There is also legislation specifically

relating to GHB in New South Wales, Queensland and the Australian Capital Territory. In August 1999 Victoria introduced amendments to the *Drugs, Poisons and Controlled Substances Act 1981*, listing GHB in Schedule 11 as a drug of dependence requiring a stricter enforcement regime; offences now exist for using, possessing and trafficking GHB, with a 'traffickable quantity' being 50 grams or more. Despite these restrictions, GHB is advertised on a variety of internet sites for sale in kits containing bottles of the two precursor chemicals and the necessary instructions.

Customs reported 11 detections of GHB being imported into Australia in 1998–99, eight from postal articles and three from air cargo. This is an increase on the five detections in 1997–98. The majority of GHB arrives in Australia in kit form, and most detections are the result of mail orders placed on the internet by people who are unaware that GHB is a prohibited import. The 1998–99 GHB detections come from the United States (four), the United Kingdom (four), Canada (two) and the Netherlands (one). Detections in the eastern States predominated: with four in Victoria, three in New South Wales, two in Queensland and two in Western Australia.

The South Australian Ambulance Service reported an increase in cases associated with ecstasy- and fantasy-type drugs during 1998–99. The Adelaide *Advertiser* reported that two teenagers collapsed outside an Adelaide nightclub after taking GHB (Pudney 1998).

Law enforcement agencies in New South Wales, Western Australia and South Australia reported low to medium levels of GHB use.

Police in New South Wales report that the increasing availability of GHB is a result of its ease of manufacture. The New South Wales Division of Analytical Laboratories examined two samples of GHB seized at nightclubs in March and August 1999. The first was found in a drinking water bottle and the second consisted of three small glass vials of GHB in a pale blue liquid form known as 'blue nitro'.

According to South Australia Police, the availability of GHB is stable in that State: two seizures of a clear or yellow-coloured liquid were made during 1998–99. The price of GHB in Western Australia is $40 to $60 for a 16-millilitre vial; in that State an offender previously charged with GHB offences was jailed for three years following the seizure of 2 litres of dark blue liquid concealed in a wine cask. The Queensland Crime Commission reported that GBL is sold on the Gold Coast for $35 per 2-milligram vial. The Queensland Police Service has reported that GBL is available in the club scene, with prices ranging from $20 to $80 per vial to $300 for 50-millilitre units and $3700 for 1-litre units coloured with red and green dyes (ABCI 1998).

Ketamine

Ketamine, a synthetic drug developed in the 1960s, has a pharmaceutical profile similar to that of phencyclidine (PCP, or 'angel dust'). It is used as an anaesthetic, primarily for veterinary purposes, under the trade names of Ketaset, Ketapex and Ketamil. Its use as a human anaesthetic declined because of adverse side-effects such as delirium and hallucinations, although it was these same properties that made it a popular recreational drug in the 1970s. Like Rohypnol and GHB, ketamine has been referred to as a 'date rape' drug because its anaesthetic qualities may render a victim compliant or helpless and unable to recollect events. Among its street names are 'Special K', 'Kitkat, 'vitamin K', 'K', and 'ket'.

Ketamine produces short-term hallucinogenic effects similar to those produced by LSD. The effects usually last between 30 and 60 minutes, but senses, judgment and coordination can be affected for 18 to 24 hours.

Ketamine is marketed legitimately as a pharmaceutical liquid available in small brown vials. On the black market it is available in liquid, pill, powder or tab form. As a white crystalline powder it is soluble in water or alcohol. In tablet form it looks like ecstasy tablets. It is also used as a cutting agent for cocaine, amphetamine type substances and heroin; LSD tabs impregnated with ketamine have been reported too.

In liquid form, ketamine can be administered by intravenous or intramuscular injection. It easily converts to powder by heating and grinding. The fine powder can then be snorted in the way cocaine is—this is reportedly a common method of use in Australia. Powdered ketamine is distributed in small bottles, ziplock bags, gelatin capsules, aluminium foils and paper folds.

Current situation

Between December 1997 and mid-1999 Paul Dillon of the National Drug and Alcohol Research Centre surveyed 80 ketamine users in Sydney (CEIDA 1999b). The survey revealed a profile of older, more experienced polydrug users. Participants were mostly male, with an average age of 26 years; about half were heterosexual and half were gay. The group was well educated, with 62 per cent earning above $30 000 a year. Dillon found that 77 per cent of those surveyed used ketamine at dance parties, raves and nightclubs. Ketamine is sold in 'bumps' for $5 to $10, and the price per gram varies between $50 and $250 (CEIDA 1999b).

Police in New South Wales, Victoria, Queensland and Western Australia reported ketamine availability as stable. In March 1999 police in New South Wales seized tablets of amphetamine type substances with a '007' symbol containing ketamine and caffeine. The Queensland Police Service reported ketamine use by people who go to dance parties but believes there may be a reduction in use because of adverse publicity surrounding the effects of the drug. Some police jurisdictions suggests that officers' lack of education and knowledge about ketamine accounts for low reporting rates. Police in New South Wales, Queensland and Western Australia reported that ketamine has been found as an ingredient in ecstasy tablets and in some cases has been sold as ecstasy. The Victoria Forensic Science Laboratory has found that ecstasy tablets now contain less MDMA and more polydrug combinations containing substances such as ketamine.

Ketamine is difficult to manufacture illegally because it has a complex chemical structure. There is no evidence of it being produced in Australia. Rather, it is obtained through illegal diversions of veterinary and medical supplies or from overseas, particularly Asian countries, where it is freely available and relatively cheap.

In August 1999 Victoria introduced amendments to the *Drugs, Poisons and Controlled Substances Act 1981*, listing ketamine in Schedule 11 as a drug of dependence requiring a stricter enforcement regime. The drug had previously been in Schedule 4, restricting it to medical, dental or veterinary prescription or supply. Specific offences now exist for using, possessing and trafficking ketamine; traffickable quantities are 20 grams or more.

Khat

Khat (pronounced *cot*) is a narcotic-containing plant that is commonly grown in east Africa and on the Arabian peninsula, where the social ritual of chewing the plant's leaves during daily sessions lasting from four to eight hours has existed for many years. The chewers are predominantly male. Other common ways of using khat are smoking the fresh leaves or boiling them in a tea. It can

also be cooked and added to casseroles. In Australia khat is a prohibited substance under the Customs (Prohibited Imports) Regulations unless government permits are obtained. Over 60 names for khat are listed by the US Food and Drug Administration, among them 'catha', 'quat', 'kat', 'chat', 'African tea', 'Arabian tea' and 'African salad'.

The khat plant, *Cathus edulis*, is an evergreen shrub that grows to 5 metres and has narrow, serrated leaves and small white flowers. It produces the active alkaloids cathinone and cathine, which are similar in structure and effect to amphetamine type substances and stimulate the central nervous system. The psychological effects vary from hallucinations, hyperactivity and feelings of mental clarity to paranoia, manic behaviour and irrational violence. The physical effects last up to 24 hours and include diminished appetite, high blood pressure, increased respiration and thirst.

Current situation

Although khat is effective only for a short time after harvest, the efficient air-freight facilities that are available today mean that khat plants picked in Kenya and Ethiopia can be ready for sale in other countries the following day. Khat is regularly re-exported from the United Kingdom to countries where some form of prohibition is in force, making it more profitable on the black market.

Apart from isolated incidents, Australian law enforcement agencies generally do not encounter khat. Police in Victoria and Western Australia reported that the prevalence of khat use is low but that its availability is stable among particular ethnic communities.

In Australia the khat-using population is small and consists mainly of people of east African and Arabian background. The likelihood of increased khat use is low, since a number of other cultures in Australian society do not share a similar drug chewing tradition. Khat's perishable nature and its bulkiness also make large-scale smuggling impractical, although importing small amounts of khat into Australia for personal use will probably continue. Local cultivation is possible—the plant is robust, undemanding and unlikely to be recognised—but there was no evidence of this in 1998–99.

Detections

In 1998–99 Customs detected 115 importations of khat into Australia, amounting to over 443 kilograms; this was an increase of 12.5 per cent on the 393.6 kilograms seized in 1997–98. The majority of detections were sent through the post (109) and the rest via air cargo (five) or air passenger (one). Eighty-eight detections originated from Ethiopia, 15 from Djibouti, seven from the United Kingdom and the remainder from other countries. In 1998–99, 103 detections, amounting to over 372.3 kilograms, were made in Victoria, which was an increase of 6 per cent on the previous year. Ten detections, amounting to 67.5 kilograms, were made in New South Wales, which was an increase of 265 per cent on 1997–98. One detection, of 3.3 kilograms, was made in South Australia and one, of 100 grams, was made in Western Australia during 1998–99.

Kava

Kava, a drug extracted from the roots of the plant *Piper methysticum*, has long been used by Pacific Islanders for spiritual, medicinal and recreational purposes. In Australia it has been used in Arnhem Land, in the Northern Territory, since 1982 as a substitute for alcohol. Among its common names are 'yaquona' (pronounced *yang-gona*), 'ava' and 'awa'.

Traditionally, kava is prepared by grinding the roots of the plant and then adding water to make a drink that is used like alcohol. It is widely advertised on the internet and sold at herbal shops and pharmacies. It is usually sold in powder form in Australia.

Among kava's short-term effects are numbing the mouth and skin, sedation, euphoria, lethargy, nausea, and signs similar to those of intoxication, such as loss of coordination.

In 1997 kava was listed in Schedule 4 of the Customs (Prohibited Imports) Regulations. People aged over 18 years arriving in Australia may bring in up to 2 kilograms in powder form or as roots for personal use or, in the case of therapeutic goods containing kava, people may import three months' supply for personal use. People wishing to sell kava in Australia require an importation licence and must agree to the Code of Kava Management, a government policy aimed at the responsible sale and distribution of the substance in Australia.

Current situation

According to the National Drug Strategic Framework 1998–2002, kava has been used periodically in some Aboriginal communities in the Arnhem Land region of the Northern Territory (Ministerial Council on Drug Strategy 1998). Preliminary data from the 1998 National Drug Strategy Household Survey showed that the proportion of Indigenous Australians who had used kava in the 12 months preceding the Survey could not be reliably estimated (AIHW 1999).

Victoria Police reported a low prevalence of kava use and that availability is stable among the State's Fijian community. Northern Territory Police reported that the prevalence of kava use is high but that availability has declined.

In the Northern Territory in May 1998 legislation was introduced in an effort to regulate the price of kava and impose penalties on unlicensed dealers and thus limit the influx of kava into the Arnhem Land area. Since that time major therapeutic goods companies have made bulk purchases of kava, resulting in a worldwide shortage that saw the price of kava rise from $5 a kilogram to $30 in four months in mid-1998. As a result the Northern Territory Government has been unable to set a reasonable price for licensed retailers. The next five years' crops have already been accounted for because kava takes several years to mature (CEIDA 1999a).

Outlook

GHB and ketamine are likely to remain popular among a limited group of users, mainly young people attending dance parties and nightclubs because it is relatively cheap and easy to produce. The quantity of khat imported into Australia increased substantially in 1998–99; use of the narcotic will continue among small sections of the community. Kava abuse will probably continue among a small element of the population but legislative changes and a supply shortage will affect availability.

Polydrug use

Polydrug use is defined in the National Drug Strategic Framework 1998–2002 as the use of more than one psychoactive drug, simultaneously or at different times (Ministerial Council on Drug Strategy 1998). Of significance for law enforcement agencies is the fact that many drug users mix licit and illicit drugs, regardless of their drug of preference. The 1998 National Drug Strategy Household Survey found that illicit drug users aged 14 years or over had used an average of 1.7 substances in the 12 months preceding the Survey (AIHW 1999). Injecting drug users are known to alternate between heroin, amphetamine type substances and cocaine in an attempt to experience a variety of effects and minimise others. The drug of choice is often a matter of availability. Anecdotal reports suggest that when a drug is unavailable users will turn to alternatives such as pharmaceuticals or will mix a number of drugs together (ABCI 1999).

The prevalence of alcohol in combination with illicit drug use is a cause of concern for ambulance services, which cite this combination as the most prominent factor in violent behaviour. Polydrug use is a major feature in the incidence of overdose, and a number of law enforcement agencies consider that the education and counselling process for drug users should include information about the consequences of mixing drugs. Researching 261 heroin deaths in Victoria in 1998, the Victorian Institute of Forensic Medicine found that 44 per cent of the deaths involved a combination of heroin and benzodiazepines.

According to a number of health authorities in Australia, LSD is commonly reported as an element in polydrug use, often with other stimulants such as ecstasy or amphetamine type substances. A 1997 study of over 200 ecstasy users from the Sydney metropolitan area found that 'ecstasy users are, by and large, experienced and concurrent users of many other drugs' (Wood 1998a). Another Sydney study found that the vast majority of people in the sample (92.2 per cent) used 2.4 other drugs whilst using ecstasy: the most common were tobacco (67.7 per cent), cannabis (48.4 per cent), amphetamine type substances (43.2 per cent), alcohol (40.4 per cent) and LSD (10.3 per cent) (Topp et al. 1997). A further study, in Perth in 1997, examined polydrug use in the dance party context and found that the vast majority of 'ravers' had used at least two 'dance drugs' such as ecstasy, amphetamine type substances and LSD on their most recent night out. It also showed that the majority of polydrug users coming to the attention of law enforcement agencies are young people (Boys et al. 1997). The Community Based Drug Reporting Working Group (coordinated by Queensland University of Technology) reported in August 1999 that polydrug use is increasing dramatically on the Gold Coast.

Internationally, concern has also been expressed at the rise of polydrug use. In its 1998 annual report the International Narcotics Control Board made reference to the growing concern about the increase in multiple drug use in the United States, South Asia and Europe (International Narcotics Control Board 1999).

Notes

[1] The small sample size of 3850 in the 1995 Survey, compared with 10 030 in the 1998 Survey, affects the statistical reliability and significance of the results when comparing survey figures.

References

ABCI 1998, *Criminal Environment National Assessment: 1992–1997*, Australian Bureau of Criminal Intelligence, Canberra, May.

ABCI 1999, *Drug Law Enforcement: facing the realities*, Australian Bureau of Criminal Intelligence, Canberra, May.

Anti-Cancer Council of Victoria 1999, *Australian Secondary Students' Use of Over-the-counter and Illicit Substances in 1996*, Monograph series no. 33, Canberra.

ACT Government 1999, *From Harm to Hope: ACT Drug Strategy 1999*, Canberra, September.

AIHW 1999, *National Drug Strategy Household Survey 1998*, Australian Institute of Health and Welfare, Canberra.

Australian Olympic Committee 1998, *Drugs in Sports: submission as to the legal regime for the control of their manufacture, importation and use,* AOC, 23 August.

Australian Sports Drug Agency 1999, [online] <www.asda.org.au> (cited 14 September 1999).

Boys, A., Lenton, S. & Norcross, K. 1997, 'Polydrug Use at Raves by a Western Australian Sample', *Drug and Alcohol Review*, National Centre for Research into the Prevention of Drug Abuse, Perth.

CEIDA 1998, *Minor Tranquillisers*, Information pamphlet, Centre for Education and Information on Drugs and Alcohol, Sydney.

CEIDA 1999a, 'North Hit by Kava Shortage', *Connexions*, Centre for Education and Information on Drugs and Alcohol, Sydney, vol. 19, no. 1, December–January.

CEIDA 1999b, 'Ravers Dance on with Special K', *Connexions*, Centre for Education and Information on Drugs and Alcohol, Sydney, vol. 19, no. 3, June–July.

CEIDA 1999c, [online] <www.ceida.net.au/druginfo/factsheets/steroidsnapshot.html> (cited 13 August 1999).

Commonwealth Department of Health and Aged Care 1999, *Drug Trends Bulletin,* DHAC, Canberra,October.

Darke, S.G., Ross, J.E. & Hall, W.D. 1995, 'Benzodiazepine Use among Injecting Drug Users', *Medical Journal of Australia*, vol. 162.

Davey, J. & Davies A. 1998, *Community Based Drug Reporting Working Group, September 1998*, Queensland University of Technology, Carseldine, Queensland.

Health Insurance Commission 1999, [online] <www.hic.gov.au> (cited 13 August 1999).

International Narcotics Control Board 1999, *Report of the International Narcotics Control Board for 1998*, United Nations, Vienna.

International Olympic Committee 1999, [online] <www.nodoping.org/declaration_e.html>, <www.nodoping.org/confmond_e.html>, <www.nodoping.org/pos_anti_dop_code_e.html> (cited 20 October 1999).

Lifelink 1999, [online] <www.lifelinknet.com/dhea.html>, <www. lifelinknet.com/dhea2.html>, (cited 11 September 1999)

Linnell, G. 1999, 'The Drug Games: why 2000 will be a spaced-out odyssey', *Bulletin,* Sydney, 14 September.

Maycock, B. & Beel, A. 1997, 'Anabolic Steroid Abuse and Violence' *Crime and Justice Bulletin*, NSW Bureau of Crime Statistics and Research, Sydney, no. 35, July.

Minister for Justice and Customs 1999, 'Tough Restrictions on EPO as Olympics Approach', [online] <www.customs.gov.au/media/news99/m990913.html> (cited 27 September 1999).

Ministerial Council on Drug Strategy 1998, *National Drug Strategic Framework 1998–99 to 2002–03: building partnerships*, MCDS, Canberra.

Model Criminal Code Officers Committee 1998, *Model Criminal Code: Chapter 6, Serious Drug Offences,* Attorney-General's Department, Canberra.

NDARC 1996, 'Doctor Shopping: implications for harm reduction', *CentreLines,* Sydney, no. 26, October.

NDARC 1998, *An Injecting Drug Users' Guide to Benzos*, Information pamphlet, National Drug and Alcohol Research Centre, University of New South Wales, Sydney.

NDARC 1999, *Drug Trends 1998 A comparison of drug use and trends in three Australian States: Findings from the Illicit Drug Reporting System (IDRS*), Monograph no. 41, NDARC, National Drug and Alcohol Research Centre, University of New South Wales, Sydney.

New South Wales Agriculture 1998, 'New Controls over Steroid Supply and Use', [online] <www.agric.nsw.gov.au/ap/Avcc/dai53.html> (cited 21 September 1999).

New Way International Inc 1999, [online] <www.dhea.com/dheaStudies.html> (cited 11 September 1999)

O'Sullivan, A 1997, 'Medical Assessment of Anabolic–Androgenic Steroid Users in Sydney, Australia', unpub.

Olympic Intelligence Centre 1999*, The Use of Performance-enhancing Drugs at the Sydney 2000 Olympic Games,* June, NSW Police Service, Sydney.

Peters, R., Copeland, J., Dillon, P. & Beel, A. 1997, *Patterns and Correlates of Anabolic–Androgenic Steroid Use*, National Drug and Alcohol Research Centre, University of New South Wales, Sydney.

Peters, R., Dillon, P. & Copeland, J. 1998*, Steroid Facts,* Information pamphlet, National Drug and Alcohol Research Centre, University of New South Wales, Sydney.

Pharmaceutical Society of Australia 1999a, [online] <www.psa.org.au/issues/6jan99pac2.html> (cited 13 August 1999).

Pharmaceutical Society of Australia 1999b, [online] <www.psa.org.au/issues/doctor_shop.html> (cited 13 August 1999).

Pudney, J. 1998, 'Fantasy Overdose', *The Advertiser,* Adelaide*,* 22 August.

Rees, P 1998, 'Drug Scams Increase' *The Sunday Telegraph,* 6 December.

Roberts, C. 1998a, *Snapshot II. The Dry: characteristics of needle exchange clients during the 1998 dry*, Northern Territory Aids Council Inc., [online] <www.octa4.net.au/ntac/snapshot/snapshot2.html> (cited 30 September 1999).

Roberts, C. 1998b, *Snapshot III. The 1998 Wet: characteristics of needle exchange clients during the 1998 wet season,* Northern Territory Aids Council Inc., [online] <www.octa4.net.au/ntac/snapshot/snapshot3.html> (cited 30 September 1999).

Roughhead, E.E., Gilbert A.A.L., Primrose, J.G. & Sansom L.N. 1998, 'Drug-related Hospital Admissions: a review of Australian studies published 1988–1996', *Medical Journal of Australia*, vol. 168.

Taylor, S. 1999, 'Anabolic Steroids', *Australian Police Journal*, Sydney, vol. 53, no. 1, March.

Texas Commission on Alcohol and Drug Abuse 1999, *Substance Abuse Trends in Texas: June 1999,* Austin, Texas.

Topp, L., Hando, J. & Dillon, P. 1997, *Ecstasy Use in Sydney 1: patterns and context of use. Ecstasy Use in Sydney 11: associated harms and risk-taking behaviour*, National Drug and Alcohol Research Centre, University of New South Wales, Sydney.

US Drug Enforcement Administration 1999, *Drug Intelligence Brief*, DEA, Virginia, US, September.

Warner Lambert 1999, 'Warner Lambert Announces New Formulation for Sudafed', Media release, September.

Wood, C. 1998a, 'Raving about the Mix' *Connexions*, Sydney, vol. 18, no. 1, February–March.

Wood, C. 1998b, 'Searching for Perfection' *Connexions*, Sydney, April–May.