DESIGNER AMPHETAMINES IN NEW ZEALAND: POLICY CHALLENGES AND INITIATIVES

Chris Wilkins[1]
Economist
Centre for Social and Health Outcomes Research and Evaluation
Massey University

Abstract

There has been a rapid increase in the use and manufacture of powerful amphetamine-type substances (ATS) such as methamphetamine and ecstasy in New Zealand in recent years. The use of ATS has been linked to increases in cases of drug psychosis, violent crime and robbery. The rapid spread of these synthetic designer drugs has highlighted a number of gaps in current legislation, agency response and research capacity. This paper discusses these issues and problems, and recommends a number of policy initiatives related to the classification of amphetamines in the Misuse of Drugs Act 1975, the classification of drug analogues, quantities required for presumption of supply, powers of search, penalties for amphetamine manufacture, chemical precursor control, the clean-up of contaminated clandestine manufacture sites, statistics maintained on ATS seizures, and the study of drug use and harms, including mental illness and incidents of violence.

INTRODUCTION

In recent years New Zealand has experienced a rapid increase in the use and manufacture of amphetamine-type substances (ATS), such as methamphetamine and ecstasy (Wilkins et al. 2002, New Zealand Police 2002, Horne 1997). Statistics released by the Police and Customs halfway through this year suggest ATS continues to be a growing problem. By the end of July Customs reported that they had already seized double the amount of ecstasy that was seized during the whole of last year (161,000 tablets as of 30/7/2002 compared to 73,000 tablets for 2001) (NZPA 2002b). By the end of August the police had detected nearly double the number of clandestine drug laboratories producing amphetamines compared to last year (70 labs by 30/8/2002 compared to 41 labs in 2001) (www.police.govt.nz/news). Non-cannabis-

[1] **Acknowledgements**
I would like to thank the National Drug Intelligence Bureau (NDIB) and New Zealand Police for providing materials and comments.
Correspondence
Dr Chris Wilkins, Centre for Social and Health Outcomes Research and Evaluation (SHORE Centre), PO Box 6137, Wellesley Street, Auckland, tel. (09) 366 6136, fax (09) 366 5149, email: c.wilkins@massey.ac.nz

related drug offences, which include ATS offences, increased by 34% over the previous year (2,708 offences in 2001/2002 compared to 2,024 offences in 2000/2001) (www.police.govt.nz/news).

Several government agencies have linked the increased use of ATS with increases in social and public health problems. The Ministry of Health recently released figures showing that hospital admissions for drug-induced psychosis had more than doubled in the 1990s, and a spokesperson for the National Treatment Forum implicated the increasing use of methamphetamine and ecstasy as a contributor to this trend (Martin 2002). The Police Commissioner, Rob Robinson, has speculated that the 5.9% increase in violent crime last year may be linked to the growing use and manufacture of methamphetamine (Stevens 2002, Philp 2002). The police have reported attending numerous incidents involving violence, including several homicides, where methamphetamine was a factor, either directly through use by an offender, or indirectly via the trade in the drug, such as where violence was used to collect debts from defaulting users (New Zealand Police 2002). The police have also implicated methamphetamine use in the recent increase in robberies, speculating that users are forced to commit street crimes to finance their drug use (www.police.govt.nz).

The spread of designer amphetamines and the emergence of domestic manufacture in New Zealand have highlighted a number of gaps in current legislation and several areas where agency response could be improved. This paper presents an overview of the ATS situation in New Zealand, identifies some of the emerging problems and issues, and discusses several policy initiatives that could be adopted to improve the control and minimise the harm of these substances. A central focus of the article is to explain how synthetic designer drugs, such as amphetamines, differ from the traditional plant-based drugs, such as cocaine, marijuana and heroin, and to examine the implications for policy.

AMPHETAMINE-TYPE SUBSTANCES: RISKS AND HARMS

Amphetamine-Type Substances (ATS) is a general term that refers to amphetamine derivatives such as methamphetamine and crystal methamphetamine, and amphetamine analogues such as ecstasy.

Methamphetamine

Commonly known as "speed" or "meth", methamphetamine is a powerful psychostimulant with characteristics and effects that more closely resemble cocaine (onset is slower and duration is longer) than the amphetamine sulphates that were commonly encountered in the 1970s, which were largely diet pills and prescription drugs (see United Nations Drug Control Programme 2001, Kuhn et al. 1998, Horne 1997, Gawin and Ellinwood 1988, Hall and

Hando 1994, Shearer et al. 2002). It can be snorted, injected, smoked or taken orally. Immediate effects include euphoria, increased energy and confidence, decreased appetite, and these effects can last for 4 to 12 hours depending on dosage. High doses cause irritability, hostility, paranoia, hallucinations and violent behaviour.

Users sometimes go on binges where they use the drug continuously over several days without sleep. As a binge lengthens the user experiences states of panic and terror, and fear of impending death, which can lead to paranoid psychoses resembling schizophrenia in people with no pre-existing psychological condition. Binges end in a "crash", characterised by deep depression, fatigue, insomnia, headaches, and a strong psychological craving to use the drug again.

Dependence potential is high and relapse common. Physiological harm includes damage to cardiac and vascular systems, and damage to dopamine terminals in the brain, with possible implications for mood and movement disorder in latter life.

Crystal Methamphetamine

Commonly known as "ice" or "crystal", this crystallised form of methamphetamine has effects similar to crack cocaine. Like crack, the crystallised form increases the speed the drug is absorbed, and the intensity and duration of the effects (Kuhn et al. 1998, Matsumoto et al. 2002). It is usually smoked.

MDMA, MDA, MDEA

MDMA, MDA and MDEA (commonly known as "ecstasy", "X", "Adam" or "Eve") have both amphetamine properties and hallucinogenic characteristics like LSD (Kuhn et al. 1998, Gowing et al. 2001, Gowing et al. 2002, Topp et al. 1998). These drugs increase heart rate, blood pressure and body temperature, and produce a sense of energy and alertness (like standard amphetamines), but also produce a warm state of empathy and good feelings for others (due to increased release of serotonin). They can be taken orally, snorted and injected. High doses cause teeth clenching, paranoia, anxiety and confusion. Tolerance to MDMA develops rapidly, and this has been associated with self-limiting patterns of use (periods of voluntary abstinence), although more-recent studies show evidence of injecting and larger doses in an attempt to overcome short-term tolerance (Topp et al. 1998).

MDMA can cause hyperthermia (heat stroke) resulting in death when combined with physical exercise or elevated temperatures, such as occur in many dance clubs (these environments compound a pharmacological effect of ecstasy on the body's thermoregulatory mechanism) (Topp et al. 1998). Ecstasy also inhibits the body's ability to excrete fluid and can cause a

thirst sensation, which has led to water intoxication and death when an excessive amount of fluid is consumed (possibly due to an exaggerated response to education messages to consume water to avoid heat stroke (Topp et al. 1998, Gowing et al. 2002). Although cases of serious adverse effects appear low relative to the extent of use, it is the unpredictability of adverse events (dose is not predictive of adverse effects) and risk of mortality that make the risks significant (Gowing et al. 2002). Three people have died as a result of taking ecstasy in New Zealand since 1998 (Stevens 2002).

Long-term effects include insomnia, energy loss, depression, irritability, muscle aches and blurred vision. Ecstasy has also been controversially linked to damage to serotonin terminals in the brain, with possible implications for short-term memory, cognitive function and mood regulation. Results are confounded by small numbers of participants, uncertain histories of MDMA use, use of other drugs such as cannabis, and pre-existing personality differences (Gowing et al. 2002). The confirmation of long-term consequences awaits large-scale epidemiological studies (Gowing et al. 2002).

AMPHETAMINES IN NEW ZEALAND

Historically the use of methamphetamine in New Zealand was confined to "white" motorcycle gangs and their associates (Horne 1997, New Zealand Police 2002, Newbold 2000). During the 1980s, and up until the mid-1990s, seizures and arrests for ATS were low-level (New Zealand Police 2002). A regional survey of drug use in New Zealand[2] in 1990 found only 1% of respondents reported using amphetamine/methamphetamine in the previous year, while only 0.4% had used ecstasy, and no one reported using crystal methamphetamine, in the previous 12 months (Black and Casswell 1993). Amphetamines were New Zealanders' fourth-most-popular illicit drug of choice behind marijuana, LSD and hallucinogenic mushrooms (Black and Casswell 1993).

The supply of methamphetamine at this time was largely restricted to international smuggling by local motorcycle gangs with affiliations in the United States and Australia, where the drug was illegally manufactured (Horne 1997, New Zealand Police 2002). Ecstasy was entirely supplied through international smuggling via air passengers and international mail, mainly from Western Europe (Australian Bureau of Criminal Intelligence 2002). The absence of any widespread domestic demand for ATS, and general ignorance of the manufacturing processes, meant domestic production was rare.

This state of affairs appears to have changed quite rapidly in the late 1990s. Mirroring global trends in youth culture (United Nations Drug Control Programme 2001), ATS became the

[2] National drug surveying did not begin in New Zealand until 1998.

drugs of choice among young New Zealanders involved in the "dance party" scene (Australian Bureau of Criminal Intelligence 2001). Seizures of ATS increased from 1.3kg in 1998 to 10.4kg in 2000 and 19.9kg in 2001 (NDIB personal correspondence 2002). Seizures of ecstasy increased from less than 3,000 tablets in 1998 to 10,000 tablets in 2000 and 73,000 tablets by 2001 (NDIB personal correspondence 2002).

The wider use and awareness of the internet provided local criminals with access to on-line "recipes" to manufacture amphetamine drugs (Zander 2002, Philp 2002, New Zealand Police 2002). The number of clandestine laboratories detected producing ATS in New Zealand increased rapidly from less than two per year up until 1998, to nine in 2000 and 41 by 2001 (NDIB personal correspondence 2002). The number of arrests for the supply of ATS increased from 62 in 1998 to 118 in 2000 and 414 in 2001 (NDIB personal correspondence 2002). The street price of methamphetamine halved during this time, from $250–$300 per gram to $100–$180 per gram (Australian Bureau of Criminal Intelligence 2001, Matthews 2001).

The domestic manufacture of ATS in New Zealand is almost exclusively limited to methamphetamine and amphetamine sulphates (Australian Bureau of Criminal Intelligence 2001). There has only been one instance of ecstasy manufacture, and this was small-scale (Zander 2002). This is because the manufacture of methamphetamine and amphetamine sulphate involves relatively simply chemical processes (involving only a few reactions) and the principal precursor ingredient (pseudoephedrine) is a fairly common chemical that can be extracted from over-the-counter flu medicines such as Sudafed and Telfast (manufacturers pay others to canvass chemists to purchase these products), or can be purchased or stolen from legitimate chemical suppliers (through use of a fictitious company or diversion from a legitimate company) (Australian Bureau of Criminal Intelligence 1997, 2001). In contrast, the manufacture of ecstasy is a more complex process and requires sophisticated precursors, such as oil of sassafras, that are closely monitored by the Drug Enforcement Agency (DEA) in the United States and by the United Nations (Philp 2002). Gang members and gang associates have featured prominently in police investigations of amphetamine manufacture and the police believe gangs play a central role in the local trade (Philp 2002, Zander 2002, Australian Bureau of Criminal Intelligence 2001).

The trends in amphetamine use implied by the increases in seizures and arrests were confirmed in 2002 with the publication of *Drug Use in New Zealand: National Surveys Comparison 1998 & 2001* (Wilkins et al. 2002). This report compared the findings from the two most recent National Drug Surveys conducted in 1998 and 2001. Last-year use of amphetamine/methamphetamine increased from 2.9% (48,400 users) in 1998 to 5.0% (83,400 users) in 2001, and last-year use of ecstasy increased from 1.5% (25,000 users) in 1998 to 3.4% (56,700 users) in 2001. Last-year use of crystal methamphetamine increased from 0.1% (1,700) in 1998 to 0.9% (15,000) in 2001. In the same surveys there was no change in last-

year use of marijuana or LSD. Amphetamines moved from being the third-most-popular illicit drug in 1998, behind marijuana and LSD, to being the second most popular in 2001, behind marijuana. Questions put to last-year amphetamine users in 2001 about conditions of supply compared to a year ago found evidence of greater availability, and stable and lower prices.

DESIGNER AMPHETAMINES VERSUS PLANT-BASED DRUGS

There are broadly two major classes of drugs: synthetic drugs, to which ecstasy and amphetamines belong, and plant-based drugs, such as marijuana, cocaine and opium (United Nations Drug Control Programme 2001). The distinctive feature of synthetic drugs is that they are manufactured in a chemical laboratory from often fairly common "off-the-shelf" chemicals, known as precursors. Plant-based drugs, in contrast, are extracted and refined from plant material. Many synthetic drugs are also designer drugs, meaning they are not simply synthetic copies of existing natural substances, but entirely new substances designed by a chemist to have specific effects (United Nations Drug Control Programme 2001). Clandestine chemists have further modified these substances to circumvent legislative and precursor controls, and these substances are sometimes referred to as "second-generation synthetic drugs" (United Nations Drug Control Programme 2001).

A number of features of synthetic drugs make them more attractive for clandestine production than the traditional plant-based drugs (United Nations Drug Control Programme 2001).

- Production of synthetic drugs is not limited to any specific geographical region or affected by seasonal cycles or weather conditions. The chemicals required to produce synthetic drugs are usually cheap, and manufacture is relatively simple for anyone with low-level chemistry skills. The synthesis of methamphetamine can usually be completed in one or two days. In contrast, plant-based drugs require lengthy and labour-intensive cultivation, harvesting and extraction processes. For example, marijuana grown outdoors takes four to five months to mature.

- The scale of the production of synthetic drugs is very flexible, and can be set up in a household kitchen, small enough to fit in a car boot, and quickly dismantled to prevent detection (they are often referred to as "boxed labs" as all the necessary tools and chemicals can be stored inside a box the size of a briefcase or electric-drill case) (Australian Bureau of Criminal Intelligence 1997, 1999).

- While plant-based drugs can only produce one type of drug, clandestine laboratories can produce a number of different types of drugs, using a number of synthesis routes and alternative precursor chemicals (Australian Bureau of Criminal Intelligence 1997). There

are currently four different "recipes" commonly used to manufacture methamphetamine (Australian Bureau of Criminal Intelligence 1997, 1999, 2001).

- While both the plant and its extraction are equally illegal in plant-based drugs (for example, cannabis plant and hash oil), many of the precursors to produce synthetic drugs are everyday legal chemicals (for example, red phosphorous) or can be found in over-the-counter drugs (for example, psuedoephedrine in cold remedies). With synthetic drugs it is only the end product that is illegal, which means action by enforcement agencies requires precise timing to be effective (that is, not before the end product is made or after it has been distributed) (Australian Bureau of Criminal Intelligence 1997).

- Structural modifications can be made to a synthetic drug to circumvent existing laws by producing a substance that is not specified in control legislation or carries a lower penalty while retaining similar effects (known as a drug analogue).

On the demand side, several features of synthetic drugs make them more attractive to drug users than the traditional plant-based drugs (United Nations Drug Control Programme 2001).

- Synthetic drugs can generally be taken by mouth, so users can avoid the social stigma and health risks associated with injection or smoking.

- Synthetic drugs are often perceived to be safe, non-addictive and productive. They are commonly held to assist people to better manage their lives by providing the energy and concentration to work long hours or to dance all night (Zander 2002) while increases in serotonin improve sociability and ability to relate to others (Gowing et al. 2001).

- Synthetic drugs are often associated with affluence and success, technological advancement, and modernity.

AMPHETAMINE MANUFACTURE

Clandestine drug laboratories established to produce hash oil and homebake heroin have existed in New Zealand since the 1980s (Horne 1997, Newbold 2000). Although the synthesis of these drugs involves some dangerous chemicals and processes (for example, the heating of highly flammable solvents in the case of hash oil (NZPA 2002a), the chemical hazards involved in the manufacture of methamphetamine are considered to be on a much greater scale (Horne 1997, New Zealand Police 2002).

The manufacture of methamphetamine involves strong acids (such as hydriodic acid), highly flammable chemicals (such as ether, acetone and red phosphorous), and poisons (including

iodine and mercury salts) (Horne 1997, Australian Institute of Health and Welfare 2002, Australian Bureau of Criminal Intelligence 2001, 2002, Matthews 2001). Many of these chemicals give off dangerous fumes even in their inert state. The manufacture process produces harmful fumes, such as phosphine, hydrogen cyanide and hydrogen sulphide. Phosphine gas is produced if the mixture is overheated (Horne 1997). Even at low concentrations phosphine gas can be lethal, and a number of offenders have been found dead in clandestine laboratories in the United Stares as a result of exposure to this gas (New Zealand Police 2002). The chemicals and fumes of the manufacture process are not only a health risk to those involved in drug manufacture but also to unsuspecting local residents and members of the public who are in the vicinity of a hidden drug laboratory.

Drug manufacturers, commonly known as "cooks", often have little formal chemistry background and have only been taught one particular way to make a drug by a criminal colleague (Zander 2002, Philp 2002). The safety of the drugs produced can therefore be seriously compromised when these amateur chemists are required to find substitute chemicals for ones they cannot obtain (Zander 2002). Many cooks are also heavy amphetamine users, which further reduces their competency and sense of responsibility (New Zealand Police 2002). Cooks have been found to regularly take risks (both due to ignorance, carelessness and intoxication) when handling dangerous chemicals and conducting chemical processes (Horne 1997, New Zealand Police 2002). Chemicals concealed for the purposes of drug manufacture are often stored in poor conditions, without proper ventilation or temperature control, with the potential risk of leakage, fire and explosion. For example, a corroded cylinder of ammonia found at a site producing methamphetamine in Christchurch was considered by Institute of Environmental Science & Research staff to be at great risk of leakage.

The hazards of methamphetamine laboratories are not limited to the immediate period of manufacture (Horne 1997, New Zealand Police 2002). Chemicals and gases involved in the manufacturing process leach into wood and plaster, and contaminate the plumbing of buildings used for drug manufacture. In the case of laboratories located in rooms in a larger structure, such as a motel or apartment block, leaching can have implications for the health of other residents and for the condition of the building as a whole. In some cases leaching is so extensive that the only practical option is to demolish a contaminated building and dispose of it as chemical waste (Philp 2002).

The disposal of the chemical waste products from methamphetamine manufacture creates further risks, both to humans and to the environment (Australian Bureau of Criminal Intelligence 1999). The DEA has estimated that for every kilogram of pure methamphetamine produced, 5–7kg of chemical waste is created (Horne 1997). Cooks have been found to dispose of chemicals directly into the ground, down drains and toilets, in nearby waterways and along the roadside (Australian Bureau of Criminal Intelligence 1999). The sudden arrival

of law enforcement officers can cause offenders to attempt to dispose of chemicals in the fastest way possible in an effort to destroy evidence, with no thought of the consequences (New Zealand Police 2002). Pollutants can be spread off-site by drains and streams into densely populated urban areas or natural ecosystems with no advance warning of spillage.

Police and other officials charged with the responsibility of investigating and cleaning up sites are exposed to all these hazards. Police in Australia and the United States have required medical treatment as a result of inhaling fumes, and have received injuries from exposure to chemicals (Horne 1997, New Zealand Police 2002).

POLICY INITIATIVES

A number of initiatives could be undertaken to improve the control and understanding of ATS in New Zealand. These are discussed below under three broad headings: legislative amendments, agency developments and research capacity. The intention here is not to set out detailed recommendations but rather to identify initiatives that are worthy of examination and evaluation.

Legislative Amendments

Classification of amphetamines

At present amphetamine substances can be found in all three classes of the Misuse of Drugs Act 1975. MDA, MMDA and PMA are in Class A, while most other amphetamines are in Class B, including methamphetamine, ecstasy (MDMA) and cathinone. Most amphetamine analogues, such as MDEA, are classified as Class C. With the growing popularity of amphetamines, and recent technological advances in manufacture, there is a case to re-examine the consistency of these classifications, as some were made at a time when knowledge and awareness about these drugs, and the nature of their abuse, was not high.

The recently passed Misuse of Drugs Amendment Act 2000 sets out clear criteria and a process for the systematic classification of a drug. Classification is required to be based on the risk of harm the drug poses to individuals or society, including likelihood of abuse, public health risk, the potential for death upon use, and the ability to create physical and psychological dependence (www.ndp.govt.nz/commitees/eacdnew.html). There may well be a case for distinguishing between amphetamine sulphate, ecstasy and methamphetamine (including crystal methamphetamine) based on these criteria. The similarities between methamphetamine and cocaine (a Class A drug) may be useful here.

Amphetamine analogues

The classification of synthetic drugs should include both the parent drug and its analogues. The classification of the parent and analogues should be consistent where risks are comparable. At present many amphetamine analogues are simply classified as Class C drugs (for example, the ecstasy analogue MDEA). The chemical composition of MDA, MDMA (ecstasy) and MDEA is very similar, yet they are presently located in three different classes in the Act. MDEA and MDMA are both sold on the streets as ecstasy, but MDEA is Class C while MDMA is Class B. The analogue of cathinone (a Class B drug), methcathinone, is actually more powerful than the parent drug, but is not specifically listed in the Act and so would be captured by the general classification for drug analogues (Class C) (New Zealand Police 2002). The police believe these inconsistencies in penalties are known to, and are being actively exploited by, drug offenders in New Zealand (New Zealand Police 2002).

Presumption of supply

Section 6(6) of the Misuse of Drugs Act 1975 sets out the quantity of a prohibited drug that is sufficient to establish "presumption of supply". Presumption of supply reverses the onus of proof from the prosecution to the offender (that is, the offender must prove they were not intending to sell the drugs in their possession rather than the prosecution having to prove they were). Penalties for supply are much heavier than for personal use only. For cocaine the current quantity set for presumption of supply is 0.5g. For many amphetamines, including MDMA (esctasy), MDEA and MDA, the presumption for supply is 5g or 100 doses. In the case of methamphetamine no quantity has been specified in the Act so a default presumption of 56g is available. This seems very high when a single dose of the drug ranges from 15mg up to 150mg, meaning a single gram would provide many such doses (New Zealand Police 2002). Five grams of methamphetamine would have a street price of $500 to $900, suggesting few users would have this amount on their person unless they were intending to sell some of the drug (New Zealand Police 2002). There would seem to be a clear case to set a specific quantity for presumption of supply for methamphetamine, and again the present situation with cocaine (0.5g) is instructive.

Power of search without a warrant

In the case of Class A drugs, and those in Part I of the other classes, the police have the power to search for drugs without a warrant. As many amphetamines (such as methamphetamine and ecstasy) are classified as Class B(II) drugs, the police do not currently have this power of search in relation to these drugs. Obtaining sufficient evidence to gain a conviction for synthetic drug manufacture requires precise timing (discovering offenders either in the process of manufacture or shortly thereafter), and the police claim the limitations on search have impeded successful investigations (Horne 1997, New Zealand Police 2002). The case for the power to search without a warrant in regard to Class B amphetamines is strengthened by the fact that this power is currently available for cannabis.

Amphetamine manufacture

Given the serious hazards associated with amphetamine manufacture there may be a case for creating a specific offence of intention to manufacture amphetamine. Such legislation has been enacted in Queensland, New South Wales and Victoria (Australian Bureau of Criminal Intelligence 2002). It establishes evidential grounds for prosecution for intent to manufacture amphetamine, such as presence of laboratory equipment and specific chemical precursors, or evidence of purchases of specific precursor chemicals.

Precursor control

The aim of precursor control legislation is not to prohibit certain chemicals but rather to establish greater controls and formal reporting obligations on their sale and possession. A voluntary code of conduct for chemical suppliers and chemists currently operates in New Zealand. The effectiveness of the code needs to be evaluated, more formal regulation established if necessary, and procedures developed to handle breaches of regulations.

Agency Initiatives

Chemical diversion desk

Chemical diversion desks currently operate in all states in Australia (Australian Bureau of Criminal Intelligence 2001). They provide valuable intelligence concerning illicit manufacture by liasing with chemical companies and suppliers of laboratory equipment about suspicious purchases. Databases can be established that track chemicals and equipment of interest.

Contaminated sites

Procedures need to be developed for the clean-up of contaminated sites, including who is responsible for the clean-up of a site (offender, owner or government), and what remedies are available for non-compliance (civil or criminal) (Horne 1997). In California, where clean-up is the responsibility of a specific government agency, the task has proven to be an expensive exercise, with the cost of clean-up in 1995 reaching $US2.4 million (Horne 1997).

Research Capacity

Statistics on ATS

All seizures of ATS should be chemically tested to identify the exact type of amphetamine involved and its purity. Designer amphetamines are a large and developing family of drugs, with different harm and dependency profiles, and with potency central to harm. There have been several instances in Australia where large seizures of amphetamines were assumed to be ecstasy (mainly because they were in tablet form) but were subsequently found to be methamphetamine (Australian Bureau of Criminal Intelligence 1997). Detailed profiling of seizures would also help to identify the response by criminals to enforcement initiatives,

such as the development of new analogues, and to identify trends in drug use and manufacture, based on the presence of trace elements (Australian Bureau of Criminal Intelligence 1997).

Rapid Assessment and Response (RAR) surveying

Population-level drug surveys, like the National Drug Survey, provide representative national statistics on drug use and harms, and trends in drug use and harms over time. However, large population surveys take time to conduct and analyse (about 12 months) and are generally only repeated every few years or so. As a consequence, they are often not in a position to provide timely data to inform the short-term law enforcement or treatment response (see Stimson et al. 1999, Marsh 1999, Bammer et al. 1999, McKetin 1999). An RAR survey would provide ongoing data (every six months) from targeted drug using populations and key informants on particular drug types and issues of interest, such as new drugs available, means of administration (needle use), purities, prices and harms experienced, so that law enforcement and health agencies can respond quickly to emerging problems. RAR drug surveys have been in operation in the United States (the Pulse Check programme) and Australia (Illicit Drug Reporting System) (see Topp et al. 2001) for many years.

Drug use among violent offenders

The role drug use plays in violent crime is of great interest to the police and public, with real implications for enforcement strategy. This is particularly so in the case of methamphetamine, which has a profile of inducing violent behaviour. The drugs–violence relationship is a complex one, with issues concerning causality (pre-existing disorders and behaviour), motivations for violence, and poly-drug use confounding relationships. However, a number of studies have illuminated the relationship between violence and specific drugs, with implications for enforcement response (Goldstein et al. 1989, 1992). The absence of primary data on this relationship in New Zealand prevents the development of a clear policy response. There are a number of examples of surveys of drug use by arrestees including ADAM (Arrestee Drug Abuse Monitoring) in the United States and DUMA (Drug Use Monitoring in Australia) (see Makkai 2001).

Hospital admissions for drug-related illness

There is a need to gather more timely and detailed data about the role specific drugs play in hospital admissions, particularly in regard to mental illness. The most recent data available on hospital admissions for drug psychosis are only up to 1999, and these figures do not specify what drug(s) were involved in an admission. Cannabis use has long been an issue with regard to mental illness in New Zealand (Health Select Committee 1998), but there is also a need to gauge the impact new drugs like methamphetamine and ecstasy are having. Again, the relationship between drug use and mental illness is a complex one, and the collection of the appropriate information is problematic in many instances. Nevertheless, if there is to be any chance of understanding these relationships, and being able to respond appropriately

to them, high-quality primary data is required. The DAWN (Drug Abuse Warning Network) in the United States is an example of a survey that collects data on drug-related admissions to hospital emergency rooms.

REFERENCES

Australian Bureau of Criminal Intelligence (1997) *Australian Illicit Drug Report 1996-97*, Australian Bureau of Criminal Intelligence, Canberra.

Australian Bureau of Criminal Intelligence (1999) *Australian Illicit Drug Report 1997-98*, Australian Bureau of Criminal Intelligence, Canberra.

Australian Bureau of Criminal Intelligence (2001) *Australian Illicit Drug Report 1999-2000*, Australian Bureau of Criminal Intelligence, Canberra.

Australian Bureau of Criminal Intelligence (2002) *Australian Illicit Drug Report 2000-01*, Australian Bureau of Criminal Intelligence, Canberra.

Australian Institute of Health and Welfare (2002) *2001 National Drug Strategy Household Survey: First Results,* Australian Institute of Health and Welfare, Canberra.

Bammer, G., M. Beers and M. Patel (1999) "The role of field epidemiology in the investigation of drug problems" *Drug and Alcohol Review*, 18:329-331.

Black, S. and S. Casswell (1993) *Drugs in New Zealand: A Survey 1990*, Alcohol & Public Health Research Unit, University of Auckland.

Gawin, F. and E. Ellinwood (1988) "Cocaine and other stimulants: actions, abuse and treatment" *New England Journal of Medicine*, 318:1173-1182.

Goldstein, P., H. Brownstein and P. Ryan (1992) "Drug-related homicide in New York: 1984 and 1988" *Crime and Delinquency*, 38:459-476.

Goldstein, P., P. Brownstein, P. Ryan and P. Bellucci (1989) "Crack and homicide in New York city, 1988: a conceptually based event analysis" *Contemporary Drug Problems*, 16:651-687.

Gowing, L., S. Henry-Edwards, R. Irvine and R. Ali (2001) *Ecstasy: MDMA and Other Ring-Substituted Amphetamines*, World Health Organization, Geneva.

Gowing, L., S. Henry-Edwards, R. Irvine and R. Ali (2002) "The health effects of ecstasy: a literature review" *Drug and Alcohol Review*, 21:53-63.

Hall, W. and J. Hando (1994) "Route of administration and adverse effects of amphetamine use among young adults in Sydney, Australia" *Drug and Alcohol Review*, 13:277-284.

Health Select Committee (1998) *Inquiry into the Mental Health Effects of Cannabis: Report of the Health Committee*, GP Print, Wellington.

Horne, B. (1997) *Policing the Illicit Use of Amphetamine Related Drugs in New Zealand*, Wellington Regional Drug Squad, New Zealand Police, Wellington.

Kuhn, C., S. Swartzwelder and W. Wilson (1998) *Buzzed: The straight facts about the most used and abused drugs from alcohol to ecstasy*, W.W.Norton & Co., New York.

Makkai, T. (2001) "Patterns of recent drug use among a sample of Australian detainees"

Addiction, 96:1799-1808.

Marsh, A. (1999) "Responding rapidly to drug issues, bureaucrats and politics" *Drug and Alcohol Review*, 18:327-328.

Martin, K. (2002) "Warning on big rise in drug-psychosis cases" *Dominion Post*, 16 July.

Matsumoto, T., A. Kamijo, T. Miyakawa, K. Endo, T. Yabana, H. Kishimoto, K. Okudaira, E. Iseki, T. Sakai and K. Kosaka (2002) "Methamphetamine in Japan: the consequences of methamphetamine abuse as a function of route of administration" *Addiction*, 97:809-817.

Matthews, P. (2001) "The lost war on drugs" *Listener*, 19 May:18-24.

McKetin, R. (1999) "Use of RAM to monitor illicit drug use in developed countries: can rapid assessment result in a rapid response?" *Drug and Alcohol Review*, 18:333-335.

New Zealand Police (2002) *Preliminary Assessment of Substance Proposed for Classification or reclassification Under Sections 4-4B of the Misuse of Drugs Act 1975 ("the Act") (Confidential)*, New Zealand Police, Wellington.

Newbold, G. (2000) *Crime in New Zealand*, Dunmore Press, Palmerston North.

NZPA (2002a) "Cannabis theory in house blast" *New Zealand Herald*, 26 March.

NZPA (2002b) "Drug seizures already double 2001 levels" *New Zealand Herald*, 28 August.

Philp, M. (2002) "Gangland rising" *Metro*, June:34-45.

Shearer, J., J. Sherman, A. Wodak and I. van Beek (2002) "Substitution theory for amphetamine users" *Drug and Alcohol Review*, 21:179-185.

Stevens, M. (2002) "Police hope big speed bust will strangle supply" *Dominion Post*, 8 August.

Stimson, G., C. Fitch, T. Rhodes and A. Ball (1999) "Rapid assessment and response: methods for developing public health responses to drug problems" *Drug and Alcohol Review*, 18:317-325.

Topp, L., S. Darke, R.Bruno, et al. (2001) *Australian Drug Trends 2000: Findings of the Illicit Drug Reporting System (IDRS)*, National Drug and Alcohol Research Centre, Sydney.

Topp, L., J. Hando, L. Degenhardt, P. Dillon, A. Roche and N. Solowij (1998) *Ecstasy Use in Australia*, National Drug and Alcohol Research Centre & Queensland Alcohol and Drug Research Education Centre, Sydney.

United Nations Drug Control Programme (2001) *World Drug Report 2001: United Nations Office for Drug Control and Crime Prevention*, Oxford, New York.

Wilkins, C., S. Casswell, K. Bhatta and M. Pledger (2002) *Drug Use in New Zealand: National Surveys Comparison 1998 & 2001*, Alcohol & Public Health Research Unit, Auckland.

Zander, B. (2002) "Speed freaks" *Listener*, 6-12 April:14-19.