



The policing implications of volatile substance misuse

A discussion paper prepared for the Commissioners' Drugs Committee of the Conference of Police Commissioners of Australasia and the South West Pacific Region by the Australasian Centre for Policing Research

Executive Summary

Both Australia and New Zealand have had to deal with the effects of the misuse of volatile substances in recent decades.

Volatile substance misuse differs from other kinds of substance misuse in a range of ways. These include the relatively young age of those involved; the experimental nature of much volatile substance use; the often episodic and cyclical nature of volatile substance use; the relatively low cost of the substances and their easy accessibility; and the fact that it is not illegal to inhale them.

Volatile substances are generally separated into four groups, namely volatile solvents, aerosols, gases and nitrites. The effects of relatively low doses of volatile substances are not unlike alcohol and, as a result, this leaves users predisposed to various forms of misadventure. This is perhaps the major risk to users that is associated with acute intoxication. There are however other risks. In particular death can occur from cardiac arrest, freezing of the larynx and pulmonary oedema. The use of volatile substances has also been implicated in a number of suicides both as a means of committing suicide and as a predisposing factor. While volatile substances are generally used on a sporadic basis, serious health problems can arise from longer term use.

Levels of volatile substance use have declined in New Zealand in recent years, but this has not been the case in Australia. In particular there are some Aboriginal communities in which the use of volatile substances remains especially problematic. This is a major focus of this paper.

There are a range of legislative tools that could assist police in responding to problems associated with volatile substance misuse. In this regard, the criminalising of volatile substance use is unlikely to be a helpful strategy. However, some jurisdictions have introduced powers that enable police to search for and seize volatile substances and the implements used to inhale them and to civilly detain users for their own protection and for the protection of others. In addition local by-laws have been implemented, which can be of benefit as far as addressing possession and supply issues are concerned.

The issue of increasing legislative powers to restrict the supply of volatile substances is a vexed one. While it is possible that this approach could bring with it some benefits, there are difficulties associated with the vast array of substances that can be misused. In addition, by imposing restrictions on the availability of some substances the potential exists to displace the use of volatile substances towards more dangerous ones.

There are two groups of implications for police regarding problems associated with the use of volatile substances. The first of these concerns the requirement for police to deal with the symptoms of acute volatile substance intoxication. The major role of police in this regard is likely to be efforts to prevent

injury and death associated with misadventure occurring while under the influence of volatile substances. Also important in this regard is the need to, wherever possible, avoid chasing or startling volatile substance users because of the risk of sudden cardiac arrest. As a result of the acute risks associated with this kind of substance misuse it is also important for police to have a relatively low threshold in the decision making processes concerning whether to refer volatile substances misusers to medical assistance.

The second group of issues for policing concern the ways in which the problems of volatile substance use can be approached at a more strategic level. In this regard, there are a range of strategies which police agencies could either advocate for implementation, or directly implement. These approaches include:

- strategies to better understand the nature and extent of volatile substance misuse problems, including encouraging further research in this area;
- approaches to better understand effective strategies to address these problems;
- advocating for the implementation of appropriate legislative tools;
- the establishment and formalisation of cooperative approaches with other agencies involved in responding to these problems;
- the potential implementation of supply reduction measures;
- addressing the learning needs of police in this area;
- ensuring that police involved in drug education programs in schools and other settings adhere to best practice in dealing with the issue of volatile substance use;
- advocating for approaches to modify products containing volatile substances in order to make them less palatable or useable;
- effective liaison with the media to ensure that issues concerning volatile substances are reported in a way that does not make the situation worse;
- addressing community safety and amenity issues that arise from the misuse of volatile substances; and
- the development of other specific local initiatives, based on local needs.

While all alcohol and other drug problems require intersectoral and multilayered approaches to some extent, this is particularly the case with volatile substances. Arguably volatile substances have occupied a very marginalised place in Australia's approach to alcohol and other drug problems. Indeed there is a disturbing lack of information available about volatile substance misuse in Australia, even concerning such basic issues as actual

mortality rates. This has not been the case in New Zealand and there is evidence suggesting that New Zealand's approach to this problem over the past two decades has been relatively successful.

Volatile substance use problems, particularly in Australia, require a broad spread of primary, secondary and tertiary intervention approaches. The actual mix of these approaches and the nature of interventions adopted will vary from location to location. Given their role in responding to those who misuse these substances, police are well placed to inform and take a leadership role in the development of these approaches.

Introduction

In examining contemporary drug related issues of concern to policing, the Drugs Committee of the Conference of Police Commissioners of Australasia and the South West Pacific Region identified that one such problem is the misuse of volatile substances. Although at present volatile substance use appears to be more of a problem in Australia than it is in New Zealand, it is evident that police in both countries have had to deal with the effects of misuse of these substances in recent decades. When considering the effects of the use of volatile substances at the population level, it is evident that they are not associated with the same levels of mortality or morbidity as other drugs, such as alcohol, heroin or methamphetamines (although morbidity and mortality levels are almost certainly underestimated in population level data). Nevertheless, it is clear that the use of volatile substances is associated with dangers which result from the acute physiological and behavioural effects that the substances have on users. There can also be significant health effects associated with longer-term use.

The use of volatile substances is of significant concern to police in certain parts of Australasia. The extent to which the use of volatile substances is associated with calls on police resources varies substantially between regions, as does the actual nature of the problems that are evident.

The use of volatile substances differs from other forms of substance misuse. The Parliament of Victoria Drugs and Crime Prevention Committee (DCPC, 2002) noted that volatile substance misuse differs from other kinds of substance misuse in terms of:

- the very young age of those who use volatile substances, sometimes as young as eight years;
- the experimental nature of much volatile substance use, in that most young people do not become regular users of these substances;

- the episodic nature of volatile substance use and the potential for outbreaks to occur spasmodically and without warning;
- the extraneous factors which make volatile substances an attractive option, including their relatively low cost and their easy accessibility; and
- that it is not illegal to inhale volatile substances.

Nevertheless, despite these differences, many of the underlying principles that apply to addressing other drug problems also apply to addressing problems associated with the use of volatile substances.

It was with these factors in mind that the Commissioners' Drugs Committee sought to more clearly identify both the nature of problems associated with the use of volatile substances in Australasia as well as the ways in which policing can respond to them. As a result, this paper was prepared by the Australasian Centre for Policing Research at the request of the Committee.

This paper initially focuses on the nature of volatile substances, their effects and their methods and patterns of use. The paper then examines volatile substance use patterns in Australia and New Zealand and particular attention is directed towards the use of volatile substances in some Aboriginal communities in Australia. Next, potential legislative and educational strategies are discussed and the paper concludes with an examination of a number of implications of these findings for policing.

The substances involved

Volatile substances¹ produce chemical vapours which can be inhaled to induce a psychoactive or mind altering effect. The United States National Institute of Drug Abuse (NIDA, 2000) noted that the term volatile substances encompasses a broad range of chemicals found in hundreds of different products that may have different pharmacological effects. NIDA (2000) classified volatile substances into four categories though they noted that there is some overlap between these categories.

Volatile solvents

These are liquids or semi solids which vaporise at room temperature. They are found in a multitude of inexpensive, easily available products used for common household and industrial purposes. These products include paints, paint thinners and strippers, dry cleaning fluids, nail polish removers, degreasers, petrol, glues, correction fluids and

felt tip marker fluids. The relevant chemicals involved include acetate, ethyl acetate, acetone, trichloroethylene, tetrachloroethylene, xylene, benzene compounds and toluene.

Aerosols

These are sprays that contain propellants and solvents. This category includes spray paints, deodorants, hair sprays, vegetable oil sprays for cooking and fabric protection sprays. These aerosols contain substances such as butane, toluene, propane and acetate.

Gases

This category includes medical anaesthetics as well as gases used in household or commercial products. Medical anaesthetic gases include ether, halothane and nitrous oxide (commonly called laughing gas). Household or commercial products containing these gases include butane lighters, fuel gas, fire extinguishers, whipped cream bulbs and products to boost octane levels in racing cars. The chemicals involved in these products include butane, isopropane, bromochlorodifluorometane and nitrous oxide.

Nitrites

Unlike most other volatile substances which act directly on the central nervous system, nitrites act primarily to dilate blood vessels and relax muscles. The nitrites are used primarily as sexual enhancers. Nitrites include cyclohexyl nitrite, amyl nitrite, butyl nitrite and isobutyl nitrite. Given that the use of nitrites does not appear to present substantial problems for policing in Australasia, this paper does not address the use of nitrites in any detail.

Methods of volatile substance use

The Victorian Department of Human Services (VDHS, nd) reported that there are six main ways in which volatile substances are used. These are:

- squeezing the contents of glue tubes into a bag and breathing in the resultant vapours ('bagging');
- saturating a cloth with a substance and holding it close to the face or putting the cloth directly into the mouth ('huffing');
- sniffing directly from a container or gas / petrol tank ('sniffing' or 'snorting');
- spraying aerosol propellant directly into the mouth or into a balloon and allowing the balloon to implode inside the mouth;
- spraying paint inside clothing (such as sleeves); and
- spraying chrome paint into a bag and breathing in the contents ('chroming').

¹ The term volatile substance is used for the purpose of consistency of language. These substances are also sometimes called inhalants or more commonly in New Zealand, volatile solvents.

Effects of volatile substance misuse

Short term or immediate effects

As can be imagined, given the wide variety of chemicals that are included under the heading of volatile substances, they have a variety of effects. Generally speaking however, inhaling small amounts of volatile substances gives rise to effects that are similar to those of alcohol intoxication. Ogden, Petroulias and Blaher (2002) reported that a state of intoxication occurs after 3-5 minutes (10-15 breaths) with peak blood plasma concentrations occurring 15-30 minutes later. As the DCPC (2002) noted, the relatively rapid onset of the effects of volatile substances is apparently due to their high lipid solubility which allows them to be absorbed rapidly from the lungs into the blood stream. Ogden et al. (2002) also indicated that the effects of these substances can last from hours to days but that the precise biochemical mechanism through which they have their effect is unknown. Indeed defining their precise mechanism of action is made more difficult by the fact that most commercial products contain a combination of volatile substances as well as other chemicals.

VDHS (nd) reported that like alcohol, volatile substances are central nervous system depressants and in the first instance the individual may feel euphoric and then become disoriented. The user may experience slurred speech and be unsteady on their feet. Inhaling larger amounts gives rise to feelings of gross intoxication in that the person may be unaware of where they are or what is going on around them. D'Abbs and MacLean (2000) also noted that those who inhale petrol report experiencing giddiness, increased libido, numbness, incoordination, aggression, irrationality and enhanced sensitivity towards light and sound.

Inhaling too much too quickly can cause convulsions, hallucinations or an overdose condition in which the user loses consciousness. These conditions can be particularly problematic if the user is in a dangerous situation such as driving a motor vehicle, is near roads or train lines or in water of sufficient depth to permit drowning. Indeed the DCPC (2002) noted that having accidents is one of the major risks associated with the misuse of volatile substances. The DCPC reported that:

Some volatile substances may cause hallucinations or make the user feel very relaxed or sleepy. It has been reported that while under the influence of volatile substances, some people have acted out fantasies, feeling invincible and impregnable. Deaths not directly associated with the chemical properties of the substance may occur from injuries caused by falls or drowning when intoxicated, by fire or

explosion when a highly flammable vapour ignites, or by asphyxia due to unsafe inhalation practices.
(p. 26)

Once the person has recovered from their use, an alcohol-like hangover can be experienced.

As d'Abbs and MacLean (2000) noted, one of the problems associated with volatile substance use is the phenomenon known as 'sudden sniffing death'. Volatile substances can sensitise the heart to the effects of adrenaline to the point where sudden exercise or alarm can cause a cardiac arrest. Dinwiddie (1994 cited in d'Abbs & MacLean, 2000) and Adgey, Johnston and McMechan (1995 cited in d'Abbs & MacLean, 2000) found that fuel gas (butane) and aerosol propellants are particularly associated with sudden death. Adgey et al. (1995) found that approximately 60% of a sample of inhalant related deaths occurred as a result of the inhalation of fuel gases. Equally, in their examination of volatile substance related deaths in Victoria, DCPC (2002) found that the majority were associated with the use of butane lighter refills and liquid petroleum gas (LPG) cylinders. Similar results were found in a study of deaths associated with volatile substance use in the United Kingdom (Field-Smith, Butland, Ramsay & Anderson, 2004), where butane lighter fluid accounted for 59% of the 63 deaths that occurred in 2002. In this way, it appears that sudden sniffing death is far more likely to be associated with the use of butane, LPG and aerosol propellants than it is with other volatile substances such as petrol.

D'Abbs and MacLean (2000) also reported that other causes of acute death include respiratory depression, aspiration (for example of vomit) and asphyxiation.

The DCPC (2002) found that the practice of spraying volatile substances directly into the mouth is also potentially fatal. This is because the cooling agents in aerosol propellants can freeze the larynx or throat of the user leading to death by asphyxiation. In addition the DCPC (2002) reported that these freezing cold gases can also stimulate the profuse excretion of fluid in the lungs (pulmonary oedema) which can result in death by drowning as a result of the lungs becoming full of fluid.

The DCPC (2002) also found that the use of volatile substances has played a role in a significant number of suicides. In this case, volatile substances are inhaled with the specific intention of the deceased ending their life through asphyxiation. The DCPC reported that the use of volatile substances can also be a contributing factor in the decision to commit suicide. Given that suicide can be the consequence of sudden and impulsive behaviour, the

DCPC found that the intoxicating and disinhibiting effects of volatile substances can contribute to suicidal behaviour.

Ogden et al. (2002) also described a withdrawal syndrome which can begin from 24 to 48 hours after the cessation of high level volatile substance use. The symptoms of this include sleep disturbances, tremor, irritability, depression, profuse sweating, nausea and fleeting illusions.

Longer term effects

It should be noted that the sporadic nature of a large proportion of volatile substance use would not lead to the longer term effects described here.

Given the very large range of substances involved it is difficult to generalise about the longer term effects of all volatile substances on the body. Indeed the DCPC (2002) found that there is a paucity of research concerning both the mechanisms involved in organ and system damage and the long term effects of volatile substance misuse.

Ogden et al. (2002) reported that longer term users of volatile substances commonly experience general physical impairment and several neurological symptoms. The central nervous system complications of volatile substance misuse discussed by Ogden et al. (2002) include:

- acute encephalopathy, resulting in global cognitive impairment with fluctuating levels of consciousness and inattention;
- chronic neurological deficits, including thinking and memory impairments as well as impairments in visual and constructive abilities;
- loss of hearing and sense of smell;
- abnormal eye movements;
- motor impairments, particularly in the case of lead poisoning; and
- peripheral nerve damage.

Other bodily organs adversely affected by long term volatile substance misuse include the kidneys, the liver (hepatotoxicity), the lungs (pulmonary hypertension, acute respiratory distress, increased airway resistance), the heart (ventricular fibrillation, cardiac arrhythmias and acute cardiac myopathy) and the blood (severe blood abnormalities including aplastic anaemias and acute leukaemia) (Ogden et al., 2002). In addition, Brady (1992) reported that because the respiratory system is vulnerable to the effects of highly concentrated solvent mixtures, users can be predisposed to bacterial and viral infections. Indeed she noted that pneumonia and other lung infections are frequently seen in solvent misusers.

The effects of longer term petrol sniffing are unclear. In particular, it is not clear how the damage to the body caused by the organic tetraethyl lead formerly contained in leaded petrol compares with the damage from the hydrocarbons also contained in petrol. Nevertheless, as d'Abbs and MacLean (2000) noted, neurological damage appears to be less prevalent among those sniffing unleaded compared with leaded petrol. However Brady (1992) cautioned against the belief that the removal of lead from petrol will eventually reduce the morbidity associated with petrol sniffing. This is because unleaded petrol has a higher hydrocarbon (benzine) content than does leaded petrol and could therefore be more toxic in the longer term.

As is evident, the longer term use of volatile substances is associated with a range of adverse effects on the body. In some cases these adverse effects are so severe that they warrant full time residential care. McFarland (1999 cited in d'Abbs & MacLean, 2000) reported that this type of care can cost between \$160,000 and \$750,000 per person per annum.

Patterns of volatile substance use in Australasia

Australia

As the DCPC (2002) noted there is:

...an almost complete dearth of research into issues pertaining to volatile substance abuse. This lack of inquiry is felt across the whole research spectrum. There is virtually no 'hard data' with regard to inhalant use, including general prevalence, morbidity, mortality and hospital statistics. Qualitative studies into why young people use volatile substances and their patterns of use are few and far between; and the effects of solvents and the ways in which solvent use can be treated is not high on the medical research agenda. (p. 541)

Indeed the DCPC found the Australian data collection on this issue to be insufficient and haphazard.

In discussing the available research on this topic, DCPC (2002) reported that researchers in Australia have consistently found that the use of volatile substances is highest among young adolescents. Nevertheless, most young adolescents will never use these substances. Of those young people who do use volatile substances only a very small proportion will develop serious difficulties such as becoming dependent on them. The DCPC (2002) cited research conducted by Ives (1994) in the United Kingdom which found that only approximately one in ten of those

who experiment with volatile substances continue to use them for even a few months and that possibly as few as one in fifty who use these substances become dependent users. Despite these findings DCPC (2002) were at pains not to trivialise what is a serious problem for some individuals and communities.

From the available research evidence it seems that there are two overall patterns of problematic volatile substance use in Australia. The first is the acute or chronic sniffing predominantly of petrol which occurs largely in rural or remote communities. The second pattern concerns the use of volatile substances such as paints, paint thinners and strippers, dry cleaning fluids, nail polish removers, degreasers, petrol, glues, correction fluids and felt tip marker fluids that occurs in a whole range of settings including rural and remote settings. Naturally there is a range of permutations within these two patterns. However it is evident that the sniffing of petrol does not appear to be a major feature of volatile substance misuse in urban regions.

A further theme in the research regarding patterns of volatile substance use in Australia (and indeed internationally) is its cyclical nature. The cyclical nature of volatile substance use was reported by the peak Victorian youth agency, the Barwon Adolescent Task Force, and by the Youth Affairs Council in their submissions to DCPC (2002). These two bodies suggested a number of factors which contribute to increases in volatile substance misuse. These include:

- the media (described as a 'media driven frenzy');
- the discovery or rediscovery of volatile substances;
- declines in the accessibility of other drugs;
- the inability to pay for more expensive drugs of choice (perhaps due to an increase in price or a loss of income);
- changes in the social mix of groups; and
- the arrival of new users into communities or social groups, such as during weekends and holidays.

As the Barwon Adolescent Task Force noted in its submission to the DCPC, volatile substance use does not tend to last a lifetime and the emergence of new trends may be indicative of the arrival of a new cohort of users.

The 2001 National Drug Strategy Household Survey (Australian Institute of Health and Welfare (AIHW), 2002) found that in that year approximately 415,500 Australians aged 14 years and over reported that they had used volatile substances in their lifetime. Approximately 70,000 Australians 14 years and over reported that they had used volatile substances in the last 12 months. The AIHW (2002) also found that the average age at which Australians first

used volatile substances was 17.6 years, the youngest age compared with other illicit drugs in the survey. In addition, those in the 20-29 year age group were more likely than those in the other age groups to have ever used volatile substances.

Given that volatile substance misuse does occur among those under the age of 14 years, the AIHW data is likely to underestimate the extent of current use of these substances. In addition, Australians who are homeless or institutionalised are not included in the AIHW data. This is also likely to result in an underestimation of the extent of use.

The 1999 survey of drug use among Australian secondary students aged 12-17 years (White, 2001) found that approximately one quarter of the sample had deliberately sniffed volatile substances at least once during their lives. In addition, 19% of the sample had done so in the last month and 7% in the last week. Interestingly, the extent of volatile substance use was related to age. However, unlike the patterns of use that were seen for other drugs, the lifetime prevalence decreased significantly from the youngest to the oldest students. Approximately one third of the 12 year old students had ever used volatile substances. However this proportion decreased to approximately 25% among the 15 year olds and to 16% of those aged 17 years. The study found that there were few significant differences in the use of volatile substances between male and female students. There was, however, a striking difference in the proportions of younger and older students reporting weekly use of volatile substances. For example, 12-13 year old students were more than five times more likely than 17 year olds to report use in the last week. Overall, 18% of boys and 14% of girls reported using volatile substances 10 or more times in the previous year and this pattern of frequent use was inversely related to age.

The Victorian Youth Alcohol and Drug Survey 2003 (Premier's Drug Prevention Council (PDPC), 2004) found relatively low levels of volatile substance use among young people in that jurisdiction. In particular, PDPC (2004) found that 4.3% reported having ever used volatile substances. Of these 23% had used in the past 12 months and 10% in the past month. Only 0.2% of respondents had used volatile substances in the past week. Of those who had ever used volatile substances, during the previous year 18% had used them only once, 15% had used them used only once or twice and a further 25% had used them every few months. The data from this survey has limitations similar to those in the AIHW (2002) data in that it was drawn from respondents living in private dwellings in metropolitan and non-metropolitan Victoria. In this way, no institutionalised, hospitalised or homeless people were

included in the survey and all respondents were over the age of 16 years.

D'Abbs and MacLean (2000) reported that both in Australia and overseas, volatile substance use is particularly prevalent within certain ethnic and low socio-economic groups of young people. For example Rose, Daly and Midford (1992 cited in d'Abbs & MacLean, 2000) found that among young people from Perth who were at risk of volatile substance use, Aboriginal youth were more likely to use volatile substances than were non-Aboriginal youth.

Indeed the use of volatile substances (notably petrol) by some Aboriginal and Torres Strait Islander Australians warrants special focus in this paper.

Volatile substance misuse in some Australian Aboriginal and Torres Strait Islander Communities

Focussing on volatile substance misuse in Australian Aboriginal and Torres Strait Islander communities does not imply that this is exclusively a problem associated with Aboriginal and Torres Strait Islander Australians, or indeed that it is a problem in all Aboriginal and Torres Strait Islander communities. Nevertheless, as d'Abbs and MacLean (2000) noted, petrol sniffing by some people in some remote Australian Aboriginal communities in conjunction with other manifestations of poor health and lack of social opportunities, appears to have more serious consequences than does volatile substance misuse among non-Aboriginal people.

Much of the research that has been conducted into volatile substance use among Aboriginal and Torres Strait Islanders has taken place with Aboriginal (rather than Torres Strait Islander) communities. For this reason the paper refers to volatile substance misuse in Aboriginal communities. This paper cannot, however, hope to do justice to the range of complex issues surrounding petrol sniffing and other volatile substance misuse in Aboriginal communities. A more thorough consideration of these issues can be found in d'Abbs and MacLean (2000) and Brady (1992).

The major volatile substance misuse problem among Aboriginal communities is associated with the sniffing of petrol. In seeking to understand the extent and nature of volatile substance use among Aboriginal communities it is critical to appreciate that there are often vast differences between individual communities in terms of the extent of volatile substance misuse (if any) that occurs. There are also significant differences in the meaning of that misuse to the communities and the outcomes that stem from it. As Brady (1992) noted it is important to:

... call into question stereotypes that depict indigenous or minority groups as substance abusers en masse, and as being homogenous populations who have responded similarly to the historical and political stresses placed upon them. The reality is that indigenous and minority populations are rarely homogenous, and have resorted to substance abuse in varying degrees and with diverse outcomes. My own research has indicated distinct regions where petrol sniffing is practised and others where it is not. (p. 19)

In this way, great caution needs to be used in drawing conclusions about the extent, nature and dynamics affecting petrol sniffing in one community based on the experiences of another.

As d'Abbs and MacLean (2000) noted, there is an important difference between the pattern of petrol sniffing that occurs in some Aboriginal communities and pattern of volatile substance use that occurs among young people in urban settings. Specifically, volatile substance misuse among young urban people appears to involve a relatively high proportion of experimental or occasional users and a very small number of chronic users. On the other hand, in those Aboriginal communities where petrol sniffing occurs, the sniffing population often contains a relatively high proportion of chronic sniffers, particularly among older age groups.

As MacLean and d'Abbs (2002) reported, estimates of the numbers of petrol sniffers in Aboriginal communities are notoriously imprecise and often conflict with one another because petrol sniffing is a semi clandestine activity often carried out at night. In addition, they reported that in most communities where it occurs, its prevalence fluctuates widely even within a period of a few weeks. In addition, MacLean and d'Abbs (2002) indicated that in some places petrol sniffing becomes quiescent for periods of time, perhaps with a small group of chronic sniffers maintaining their habit in an almost invisible way and that it then re-emerges, often as a result of movements of young people and their families between communities. Indeed Chivell (2002) found that despite the fact that a considerable amount of research has been undertaken on this topic, governments still do not have a clear idea of how many people are involved and the extent to which they have already suffered serious harm.

Brady (1992) estimated that in 1992, petrol sniffing was occurring in 56 of the 837 rural and remote Aboriginal communities in Australia. She also reported that, at that time, there was very little petrol sniffing occurring in Queensland and New South Wales, the States with the largest proportion of the total Aboriginal population. On

the other hand South Australia and the Northern Territory were substantially over represented as far as the extent of petrol sniffing is concerned. Brady (1992) noted that deaths associated with petrol sniffing are most likely to occur in far northern and western regions of South Australia and in the eastern and lower central parts of Western Australia.

MacLean and d'Abbs (2002) reported that the prevalence of petrol sniffing in Aboriginal communities diminished in the mid 1990s as a result of the introduction of aviation fuel (avgas, comgas) as an alternative to conventional petrol. Avgas / comgas is a useful substitute in this regard because it is less volatile than petrol and causes severe headaches and stomach cramps in would-be sniffers. Another factor that led to a reduction in petrol sniffing at that time was the introduction of a range of community based interventions.

MacLean and d'Abbs (2002) noted that where petrol sniffing occurs in Aboriginal communities the majority of participants are male (with a male to female ratio of approximately 3:1) although this appears to be changing slowly. They also reported that while petrol sniffing occurs mainly among adolescents and even young children, it also occurs among young adults, with the latter group being more likely to become chronic sniffers. Indeed, Shaw (1999 cited in MacLean & d'Abbs, 2002) reported that in recent years chronic sniffers over 30 years of age have been identified.

There are clearly some Aboriginal communities in which petrol sniffing is having a major detrimental effect. In a Coronial Inquest into the deaths of three Aboriginal men in the Anangu Pitjantjatjara Lands, Chivell (2002) noted that:

Petrol sniffing is endemic on the Anangu Pitjantjatjara Lands. It has caused and continues to cause devastating harm to the community, including approximately 35 deaths in the past 20 years in a population of between 2,000 and 2,500. Serious disability, crime, cultural breakdown and general grief and misery are also consequences. (p. 1)

D'Abbs and MacLean (2000) discussed a range of problems associated with petrol sniffing in some Aboriginal communities. These included:

for the petrol sniffers themselves:

- increased sexual promiscuity and the associated spread of venereal diseases;
- effects on unborn children of petrol sniffing during pregnancy;
- poor school attendance and performance;
- loss of opportunity to learn cultural knowledge;

- alienation from family support;
- ostracism from non-sniffing peers, kin and other families; and
- increased risk of involvement with the criminal justice system;

for the families of sniffers:

- loss of control over sniffers and the associated shame;
- grief and hardship due to caring for long term disabled petrol sniffers; and
- fear of violence if they intervene to stop petrol sniffing;

for the local community:

- intensification of inter-familial fighting through blaming;
- damage to property and other vandalism;
- flouting of Aboriginal and non-Aboriginal authority and the associated social disruption;
- adverse effects on morale and turnover among non-Aboriginal staff; and
- the loss, temporarily or permanently of a proportion of the community's young people;

for the wider society:

- demands on hospital-based and other health resources, including aerial medical evacuations;
- long term care for those disabled by petrol sniffing; and
- demands on the criminal justice system arising out of petrol sniffing.

As d'Abbs and MacLean (2000) noted, the most common explanation for substance misuse such as petrol sniffing in Australian Aboriginal communities, is that it occurs as a result of the cultural disruption (particularly to family structures) caused by colonisation and dispossession. On the other hand, Brady (1992) argued that factors related to the individual user's motivation and perceptions as well as the influence of peer groups are often not considered as contributing to petrol sniffing. For example, she argued that petrol sniffing is at times present in some of the most traditionally oriented communities and often absent in communities with a long association with the pastoral industry. She also suggested that petrol sniffing can be a means for young Aboriginal people to express power over their bodies by becoming thin (which occurs as a result of petrol sniffing inhibiting appetite). She argued that many of the petrol sniffers were neither unloved nor neglected and suggested that the focus of Aboriginal drug problems should be deflected from a preoccupation with pathogenesis.

D'Abbs and MacLean (2000) suggested that there are many causes of petrol sniffing in Aboriginal communities which relate to each other in complex ways. They noted that as with all drug use, young people use experimentally or chronically for a whole range of reasons. In addition, although issues such as historical dispossession or contemporary poverty can influence this use, it is not easy to trace the causal themes of petrol sniffing to a single factor. D'Abbs and MacLean (2000) reported that petrol sniffing (or membership of a petrol sniffing group) appears to offer young Aboriginal people excitement and a sense of identity amidst the massive change and lack of life opportunities experienced by some Aboriginal communities.

D'Abbs and MacLean (2000) (see also MacLean & d'Abbs, 2002) undertook a comprehensive examination of interventions that have been trialled to address petrol sniffing in Aboriginal communities. Although their efforts were hampered by a paucity of program evaluation data, they were able to make a series of valuable recommendations about a whole range of programs to address petrol sniffing in Aboriginal communities. Their recommendations dealt with:

- primary interventions (actions to prevent the emergence of petrol sniffing);
- secondary interventions (actions targeted at populations deemed to be at risk or already in the early stages of petrol sniffing); and
- tertiary interventions (treatment programs and other actions aimed at those who are engaged in harmful petrol sniffing).

They called for the implementation of programs that are integrated and coordinated across these three levels of intervention, have a high degree of involvement along with the acceptance of community members and involve a high level of coordination between service providers. This is entirely consistent with that outlined in the National Drug Strategy Aboriginal and Torres Strait Islander Peoples Complementary Action Plan 2003-2006 (Ministerial Council on Drug Strategy (MCDS), 2003).

New Zealand

Volatile substance use (or 'solvent abuse' as the problem is generally termed in New Zealand) does not appear to be a major issue facing police in New Zealand at present (Webb, 2004 pers comm). Despite this Webb (2004 pers comm) indicated that frontline New Zealand police officers have dealt with an increase in the number of recorded volatile substance use incidents from 570 incidents in 1998, to 837 in 2003 (a 46% increase over six years).

Wilkins, Casswell, Bhatta & Pledger (2002) reported that in the 2001 National Drug Survey 2.2% of respondents aged 15-45 years had ever tried solvents. This was up from 1.9% in 1998. However in 2001, 0.2% of respondents had used solvents in the past year, a decrease from 0.4% in 1998. The proportion of respondents who were current solvent users also declined from 0.2% to 0.1% over this period.

The New Zealand Ministry of Health (2001) also reported that in the 1990-1996 period, there were 35 deaths associated with solvent related conditions in that country. Of these 19 were due to solvent dependence or the misuse of solvents and the rest were due to accidental poisonings and suicides where solvents were used by the deceased.

New Zealand appears to have less significant problems with volatile substance use than does Australia, however this has not always been the case. Meredith (2002) reported that in the early 1980s, volatile substance misuse was a significant problem in that country. She also reported that by the late 1980s there had been a significant decline in the prevalence of this problem and that while there are still small groups of volatile substance misusers in New Zealand, the problem has not resurfaced to any large extent. The DCPC (2002) reported that this reduction was due to the development of a strong partnership between the New Zealand Government, the police and the community sector.

Meredith (2002) noted that Maori is the group that is most commonly associated with volatile substance use. In addition, she noted that, as in Australia, there is a peak of use of these substances at about 13 years of age and that volatile substance use is now most often evident in suburban areas.

Legislative frameworks to address volatile substance use

Legislation to reduce volatile substance use can either address the user or the substance itself, especially its supply. Each of these issues is discussed in turn.

The user

As the Alcohol and other Drugs Council of Australia (ACDA, 2003) reported, the inhalation of volatile substances is not criminalised or penalised anywhere in Australia. Nor is it illegal in New Zealand (Webb, 2004 pers comm), although that country has had vigorous debates in the past about the possibility of criminalising it (Meredith, 2002). ADCA (2003) reported that in Australia there is significant opposition from both the law enforcement and health sectors to the criminalisation of volatile substance use. This is because such an approach is

likely to lead to adverse outcomes for the users that far outweigh the potential benefits of such an approach.

On the other hand, all Australasian jurisdictions have legislation that allows police to civilly apprehend persons who are publicly intoxicated to the extent that they are a risk to themselves or to other people. In addition, all Australasian jurisdictions have child welfare laws which allow police and other human service providers to take children into care when they are at risk or in need of protection. As ADCA (2003) noted, however, as far as Australia is concerned, in many instances the existing legislative tools are unclear regarding actual police powers to respond to volatile substance misuse. Ideally, as ADCA (2003) reported, police should have powers to seize volatile substances from people who they believe will inhale them and to take the person to their home, or place them in the care of a responsible adult or agency.

Some Australian jurisdictions have these powers. For example, Victoria recently passed the Drugs, Poisons and Controlled Substances (Volatile Substances Act, 2003). This legislation empowers police to search for and seize volatile substances or items used to inhale volatile substances. In addition, police in that jurisdiction are now empowered to detain individuals (including young people) if they are intoxicated to the extent that they may cause immediate harm to themselves or others. Similar powers are found in the Queensland Police Powers and Responsibilities Act (2000).

One of the difficulties faced by police is a paucity of safe places to which they can take individuals affected by volatile substances. This prompted the Queensland Government to seek tenders to trial the establishment of 'places of safety' in each of five locations for a period of 12 months. The aim of the trial is to assess whether the Queensland legislation including the 'place of safety' approach assists in reducing the harm associated with volatile substances.

In this way, it seems that the most appropriate role for legislative powers regarding the users of volatile substances relates to the removal of volatile substances and related equipment, the protection of the users themselves and ensuring the safety, amenity and property protection needs of other members of the community are met.

The volatile substances

Most Australasian jurisdictions have offences relating to the sale of volatile substances where the retailer could reasonably be expected to know that the substance was to be misused. Proving that retailers *knowingly* sold volatile substances for the purpose of misuse can be particularly

difficult (Victoria Police, 2002). As DCPC (2002) noted, debates over restricting the supply of volatile substances revolve around three issues, notably:

- whether retailers and distributors of volatile substances should be penalised for selling them in the knowledge that they will be misused;
- whether the sale of volatile substances should be restricted to those over a certain age; and
- whether the volatile substances should be secured in ways that make them less conveniently accessible.

The DCPC (2002) noted that:

- the huge number of volatile substances on the market makes a general ban on the sale of products to those under the age of 18 years impractical; and
- restrictions on the sale of certain volatile substances may result in the displacement of use towards other more dangerous products or obtaining the restricted volatile substances by other means.

Despite these potential problems, the DCPC (2002) received submissions to the effect that point of sale restrictions were likely to be a useful part of an overall strategy to reduce the harm associated with volatile substance misuse. The DCPC also mentioned the potential value of voluntary codes of practice by retailers and the development of community partnerships to reduce the supply of volatile substances. At the same time, the DCPC expressed some reservations about the sustainability of such approaches in the absence of legal enforcement.

The New Zealand Expert Advisory Committee on Drugs recently recommended that the Misuse of Drugs Act 1975 be amended to change the classification and restriction of 'lower risk' substances with the potential for misuse. These 'lower risk' substances are likely to include volatile substances. This proposal was subsequently endorsed by Cabinet and relevant legislation is currently being drafted. The legislation is likely to divide these substances into two categories. The first of these categories includes those substances which have legitimate industrial, commercial or residential uses, but these uses are limited in nature and the products are not sold from a wide range of outlets. The second category includes substances which are sold and marketed as chemicals for industrial, commercial or residential use, have the potential to be abused or have a history of being abused, but which have a wide range of uses and are sold widely.

Arguably, the categorisation of the substances in this way facilitates the application of controls on the supply of substances. These controls would be based on both the need to reduce the risk and harms from the substances and the practical ability to do so. The proposed regulatory

controls include restrictions on the age of purchase, marketing and advertising restrictions, labelling and consumer information requirements.

In addition, Meredith (2002) reported that local by-laws to address the supply of volatile substances have been effective in the New Zealand context. An example of such a by-law in Australia is the Pitjantjatjara Land Rights Act, 1981 and the subsequent 1987 amendment. This makes it an offence to possess or supply petrol for the purposes of inhalation in the Anangu Pitjantjatjara Lands. The Act also gives police the power to confiscate petrol or equipment being used for petrol sniffing. However, MacLean and d'Abbs (2002) reported that there is disagreement about the effectiveness of these by-laws.

As discussed earlier, some volatile substances are far more dangerous than others. For example, butane and LPG seem to be far more dangerous than petrol or spray paint. Therefore, in the development of supply control strategies it is important that this does not change the pattern of use towards substances that are more hazardous.

Summary of legislative approaches to volatile substance misuse

Clearly there could be substantial advantages for police in terms of their ability to reduce the harm to volatile substance users if they have the ability to civilly apprehend those users who are a danger to themselves or others and to confiscate the volatile substances and any items being used to inhale them. However, the value of other legislative powers to reduce the supply of volatile substances requires careful consideration.

The role of educational strategies to reduce volatile substance misuse

One key non-legalistic approach is the use of educational strategies to prevent and reduce problems associated with volatile substance misuse. The DCPC (2002) noted that there were a number of groups in the community for whom educational programs concerning volatile substance use would be valuable. These included parents and parent groups, teachers, police and other emergency workers, youth workers, health workers, local government staff, traders and industry representatives, railway personnel and journalists and media representatives. A number of resources have been developed for these groups. For example, in Victoria educational resources have been developed for:

- retailers - (*Responsible Sale of Volatile Solvents*);
- health and welfare workers - (*Responses to Inhalant Use: Management Response to Inhalant Misuse* -

Guidelines for the Community Care and Drug and Alcohol Sector, and About Inhalant Misuse for Health and Community Workers and The Koori Chroming Kit);

- teachers - (*Volatile Solvents - A Resource for Schools*); and
- for parents and health professionals - (*Chroming Information Resources*).

Educational resources have also been developed for police and other emergency workers. For example in Queensland a 'Z' card has been developed for police and ambulance personnel to carry. The card outlines the measures to be implemented if police and ambulance officers encounter individuals affected by their use of volatile substances. Further information for police, including a flow chart of policing actions, has also been provided on the Queensland Police Service intranet.

The provision of education programs to young people about volatile substance use is far more controversial in that, if conducted inappropriately, it is highly likely to promote use in those who are not already using these substances. Rather than having a specific focus on volatile substances in generic drug education programs for adolescents, the DCPC (2002) considered that it would be preferable to approach this issue from the perspective of these substances being hazardous chemicals and materials. In this way, the focus is removed from the potential of the substances for misuse. As is evident, this has implications as far as the provision by police of drug education programs is concerned.

While the provision of education programs en masse to young people is unlikely to be helpful, the DCPC (2002) found that the provision of educational resources to those who are already using volatile substances could have some benefits in terms of better informing users about the potential risks of that use.

In summary, there is considerable scope for the provision of education programs to relevant groups. However, this must be done in such a way that it does not encourage the uptake of volatile substance use.

Implications for police

There are two groups of implications for police regarding problems associated with the use of volatile substances. The first of these concerns dealing with individuals acutely affected by their use of volatile substances. The second group of implications concerns the role of police in assessing, preventing and responding to volatile substance use problems at a more strategic level. Each of these is considered in turn.

Dealing with individuals affected by their use of volatile substances

Perhaps the major role of police in dealing with individuals affected by their use of volatile substances concerns reducing the risk of death or injury to the user associated with various forms of misadventure. As has been discussed earlier, the intoxicating effects of volatile substances at relatively low levels are similar to those associated with alcohol consumption, which makes volatile substance users more prone to accidents and injury. The actual extent to which volatile substances contribute to death and injury is unclear. However, it is important for police to take any measures that are reasonably possible to reduce the risk of death or injury amongst this group. In this context, death or injury can occur as a result of accidents, falls, car crashes and drowning, as well as burns and explosions from the volatile substances themselves.

As discussed earlier, the use of volatile substances has the effect of sensitising the heart to the effects of adrenaline. When this sensitisation occurs in the context of other stressors, physical exertion or high levels of anxiety, there is a risk of sudden cardiac arrest (sudden sniffing death). Therefore there are good reasons for police to approach volatile substance users cautiously and not to unnecessarily give chase to them or startle them. Where possible and permissible, police should also remove the volatile substance and related materials from the person and ensure that the affected person has access to fresh air.

In addition to the risk of death from cardiac arrest, there is also a risk of death from asphyxiation as a result of either pulmonary oedema or, in the case of aerosol sprays, from the freezing of the larynx of the user. Therefore, it is important for police to have a relatively low threshold in deciding whether or not to seek medical attention for those affected by their use of volatile substances.

Naturally in the case of overdose resulting in the loss of consciousness, seizures or convulsions the normal principles of airway management should apply, along with the need to seek emergency medical assistance.

In the custodial setting, there is a risk of offenders withdrawing from volatile substances 24-48 hours after longer term, high level use. There is a need for police to be aware of this possibility and to seek medical advice as appropriate.

Strategic approaches to volatile substance misuse issues

It is to be hoped that the National Inhalant Abuse Task Force established by the MCDS will assist in the development of national strategic approaches to this issue in Australia. A similar approach was adopted in New

Zealand in 1984, with the establishment of the National Advisory Committee on Solvent Abuse (Meredith, 2002). This was followed in 1985 by the appointment of a National Solvent Abuse Coordinator. These measures do seem to have been of substantial benefit in coordinating the interagency responses to volatile substance use problems in that country.

A number of Australian jurisdictions have also established coordinating committees to address this issue. These include the Western Australia Solvents Abuse Working Party, the Queensland Volatile Substance Misuse Steering Group and the South Australian Intergovernmental Interagency Collaboration Committee on Anangu Pitjantjatjara Lands and its Petrol Sniffing Task Force.

There are a number of possibilities to enhance strategic responses to volatile substance misuse problems that police can either advocate for or directly implement. A number of possible strategies are discussed here, but this is far from an exhaustive list, particularly in relation to possible interventions to reduce petrol sniffing in Aboriginal communities. For a more complete list of possibilities in this area see d'Abbs and MacLean (2000).

Better understanding the problem

In order to respond to problems strategically it is first necessary to have a clear understanding of their extent and nature. D'Abbs and Brady (2003) were highly critical of the level of research commitment to the issue of petrol sniffing in Australia. They called for more research to gather epidemiological data (including data on the links between patterns of use and harmful consequences), and data regarding the efficacy and effectiveness of interventions as well as knowledge about the ways in which petrol sniffing affects physical and mental functioning. As the DCPC (2002) noted, the same dearth of knowledge applies to the whole spectrum of volatile substance misuse issues.

In response to the lack of information concerning appropriate policing responses to volatile substance misuse in Aboriginal and Torres Strait Islander Communities, the National Drug Law Enforcement Research Fund has funded the National Drug Research Institute to conduct a study to determine best practice in this area. The results from this research will be available in mid 2005.

One of the important issues in this regard is the lack of clarity about the actual number of deaths in which volatile substances play a part. This prompted the Victoria Coroner (Johnstone, 2002) to highlight the important role that police can play in bringing the potential involvement of volatile substances in deaths to the attention of coroners. Johnstone (2002) suggested that police were the 'arms and

legs' of the coroner in this regard and called for national standardisation of the way that police investigate deaths and report them to coroners. This, he suggested, would ensure that all deaths that are associated with volatile substance use can be recorded as such, which would in turn provide an accurate picture of the extent of the problem.

A related issue is that there is currently no national uniform reporting process to measure mortality related to volatile substance use. Uniform reporting processes occur in the United Kingdom, for example, via the St. Georges Hospital Medical School, which publishes yearly national data on deaths (for example see Field-Smith et al., 2004). This reporting process has involved the adoption of a standard definition of volatile substance deaths. In particular, volatile substance related deaths are classified as such if the death was one that would not have occurred if the deceased had not abused volatile substances, regardless of the nature of the terminal event. The St. Georges Hospital Medical School has been collecting this data for 17 years and this continuity of reporting allows emerging trends to be plotted over a long period of time. Such a reporting process would provide a valuable gauge of the extent and nature of volatile substance related deaths in Australia.

Some jurisdictions have undertaken processes to better understand volatile substance misuse. For example, in Queensland, a wide ranging scan of the impacts of volatile substance use was undertaken in 2002 at the behest of the Queensland Police Service (2004). This involved holding a series of workshops in nine regions of that jurisdiction. The workshops involved police and other service providers meeting to specifically focus on volatile substance use. This strategy facilitated the development of an overview of volatile substance use in that jurisdiction, which included the associated harms to individuals and to the community. It also identified the risk and protective factors that were present in each locality thus enabling the development and implementation of strategies that were locally relevant.

In this way, any measures that police can take to encourage a better understanding of this problem are likely to better inform strategic approaches.

Better understanding the solutions

In their exhaustive examination of interventions to address petrol sniffing in Aboriginal communities, d'Abbs and MacLean (2000) were significantly hampered by a lack of sound program evaluations. Indeed they found that they had to make do with data and observations that were at worst impressionistic and in most instances far from conclusive. It is therefore imperative that all policing and other programs which are implemented to address the problem of volatile substance misuse are evaluated, so as

to build up a body of knowledge about effective strategies in this area. Indeed the DCPC (2002) recommended that all publicly funded programs to address this problem should have an evaluation component to determine their effectiveness.

Legislative tools

While as noted above, the criminalisation of volatile substance misuse does not appear appropriate, it is important for police to have powers to protect volatile substance affected individuals and to ensure the safety and amenity of other members of the community. These powers should include the ability to civilly detain individuals affected by volatile substances and to search for and seize volatile substances and implements for their use. If police are to civilly detain these people, then it is also necessary to ensure that there are places of safety to take them.

While exclusively legalistic approaches to the problems of volatile substance use are unlikely to be effective, the establishment of appropriate overarching legislation and local by-laws to deal with specific problems at the local level does appear to be of benefit.

The establishment and formalisation of cooperative approaches

As is evident, a range of organisations are involved in responding to volatile substance misuse problems. The establishment of protocols and memoranda of understanding between these agencies can more clearly delineate their respective roles. Existing examples of this include the *Interagency Protocol between Victoria Police and Nominated Agencies – Drugs Poisons and Controlled Substances (Volatile Substances Act, 2003)* and the *Queensland Police Service and Queensland Ambulance Service Response to Volatile Substance Misuse*. In addition, the development of codes of conduct and voluntary agreements with retailers of volatile substances can have a positive impact on their supply.

Supply reduction

Despite the difficulties associated with the wide range of volatile substances that have the potential for misuse, there is much that can be done to reduce their supply. The police role in this can range from enforcing petrol sniffing by-laws to liaising with industry groups, including retailers, concerning their responsibilities regarding the sale of volatile substances. In introducing supply control measures, it is important to be cognisant of the risks that can be associated with displacement of volatile substance use towards more dangerous products such as butane and LPG.

Learning needs of police

Police have a range of learning needs as far as responding to volatile substances is concerned. These include methods to deal with acutely intoxicated individuals and the legislative tools and health and welfare services available to assist in this regard (for example see Moran & Henderson, 2004). Also important in this regard is information about strategies that have been successful in reducing problems associated with volatile substance use at the local level.

Police and school based drug education

It is important that police who are involved in the provision of drug education programs in schools adhere to best practice in terms of addressing this issue in that particular environment. Specifically, there seems to be a consensus that in the school situation, volatile substances should not be discussed as a discrete pattern of drug use and examples of substances that can be misused or methods of misuse should never be provided to students.

Product development and modification

One possible strategy to reduce the impact of volatile substance misuse problems is the modification of the volatile substances themselves to make them less attractive or useable for this purpose. Given the huge range of products involved, this will be a difficult task. The MCDS (2004) noted that the Australian Government has provided funding of \$291,000 for research to be conducted by the Commonwealth Scientific and Industrial Research Organisation to investigate the feasibility of adding a bittering agent to substances often used as inhalants in order to discourage their use.

MacLean and d'Abbs (2002) reported that this approach had been tried in the context of petrol sniffing by the addition of ethyl mercaptan or 'skunk juice' to petrol. Unfortunately the petrol sniffers soon found that if the mixture was left out in the sun, the would-be deterrent additive simply evaporated. While supporting the development of these additives, the DCPC (2002) cautioned that this should not be regarded as a panacea to this problem. The DCPC noted that the reasons why people inhale volatile substances are complex and modifying the products they choose to use will not of itself eradicate either the causes or the practice of volatile substance misuse. Nevertheless it is likely that this approach will be of benefit in some instances.

Effective media management

As Rose (2001) and DCPC (2002) pointed out, the media's reporting of volatile substance use problems can either be beneficial or detrimental, depending on the approach that is taken. When police either provide information to the

media about volatile substance issues or enlist the media as part of a strategy to respond to these issues, then it is important that any resultant media coverage does not aggravate the problem. The problems could, for example, be exacerbated by the media attention encouraging interest in volatile substance misuse where none existed previously or by naming specific products that are able to be misused or methods that can be used to inhale them. Such is the importance of this issue that the MCDS (2004) indicated its intention to write to media outlets asking for their cooperation in not displaying images of inhalant abuse. For further information on the appropriate use of the media to respond to volatile substance related issues, see Rose (2001).

Community safety issues

Chivell (2002) noted that particularly where petrol sniffing is a major problem, communities have a range of resultant safety and security needs. These needs become most acute when there are outbreaks of violence associated with petrol sniffing. As MacLean and d'Abbs (2002) noted, community safety issues are important from the perspective of the rights of communities to have a safe environment. In addition, if measures are introduced that reduce the incidence of petrol sniffing and related vandalism then this can give the communities some hope that the problems of petrol sniffing are not intractable. In this regard MacLean and d'Abbs (2002) concluded that community warden schemes, police aides and night patrols have an important but limited role in reducing the problems associated with petrol sniffing. They noted that these measures can be effective in terms of returning petrol sniffers to their families. However if these measures simply bring pressure to bear on those families, they are unlikely to be effective.

The development of other specific local initiatives

Police are well placed to take a leadership role in the development of local initiatives to address volatile substance use. Queensland Police Service (2004) reported that the scan of volatile substance misuse issues undertaken in that jurisdiction has led to both the initiation of strategies in some regions and the enhancement of existing strategies in others (for example, see Taylor & Lawson, 2004). Key findings from the work conducted in Queensland work were that local strategies implemented to address volatile substance use should:

- be collaborative;
- be culturally appropriate;
- ensure that volatile substance use and issues associated with it are not advertised to young people;
- be evidence based and based on local needs, which are identified before program commencement;

- be planned carefully with realistic short- and long-term objectives established;
- regularly re-visit program objectives to ensure that the initiatives are flexible enough to meet local needs and implemented appropriately; and
- be thoroughly evaluated.

Specific local level policing initiatives described by Moran (2003) were:

- involvement in local committees to deal with volatile substance related concerns;
- provision of referral information to young people with whom police come into contact concerning services that are available;
- involvement in discussions with local retailers regarding substance supply reduction and staff safety issues;
- increased patrols or enforcement of relevant legislation regarding volatile substances;
- the development of local protocols or memoranda of understanding between police and other agencies (in particular hospitals) in responding to volatile substance use incidents; and
- involvement with the provision of diversion activities for young people including camps, sporting activities or cultural activities.

Conclusion

A key theme in the literature surrounding effective strategic responses to volatile substance misuse is the need for multilayered responses by government, the community and private sector individuals and organisations to address this problem. As is evident, there are significant differences between volatile substance misuse and other kinds of drug problems. Indeed volatile substance misuse is a drug problem that is characterised by its heterogeneity. As a result, a wide variety of locally appropriate strategies are needed to address it.

In addition, d'Abbs and Brady (2003) noted that, as a form of substance abuse, the problem of volatile substance misuse occupies a marginalised position, at least in Australia. They further observed that:

To begin with, [volatile substances] do not fit neatly into the prevailing dichotomy of licit drugs (chiefly alcohol and tobacco) and illicit drugs (such as cannabis, amphetamines, opiates). As a result they are usually included in the residual 'other drugs' category, where they may or may not be further distinguished as petrol sniffing, glue sniffing,

chroming or whatever. Secondly, it is questionable how helpful some of the key concepts used to understand drug abuse – such as dependency and addiction – are when it comes to dealing with petrol sniffing. (p. 5)

In short, the response to volatile substance misuse in recent decades in Australia seems to have been largely reactive in nature with funds being provided often on a short term basis in response to specific problems. As d'Abbs and Brady (2003) pointed out, short term projects are unlikely to have sustained effects in this area. As the DCPC (2002) observed there is much that Australia can learn from New Zealand's approach to this issue.

In addition, the problems associated with volatile substance use in Australia are not well delineated. Not having a clear picture of the nature of the problem is a significant impediment to addressing it.

If the problems associated with volatile substance use in Australasia are to be decreased, then it will be essential that the broad spread of primary, secondary and tertiary intervention approaches are adopted. The actual mixes of these approaches and the nature of interventions adopted will vary from location to location. In this regard, police are well placed to inform the development of these approaches, given the extent to which they have to deal with the effects of the misuse of these substances.

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