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**Department of Health and Ageing**

# Volatile Substance Misuse: a review of interventions

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Drug Strategy*

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# VOLATILE SUBSTANCE MISUSE: A REVIEW OF INTERVENTIONS

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**Abbreviated terms**

ADAC	Aboriginal Drug and Alcohol Council (South Australia)
AERF	Alcohol, Education and Rehabilitation Foundation
APY	Anangu Pitjantjatjara Yankunytjatjara
BYS	Brisbane Youth Services
CARF	Common Assessment Referral Form
CAYLUS	Central Australian Youth Link-Up Service
CDEP	Community Development Employment Program
CFC	chlorofluorocarbon
CIAG	Cairns Inhalant Action Group
CMC	Crime and Misconduct Commission (Queensland)
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DASWEST	Drug and Alcohol Services in the West (Melbourne, Victoria)
DHS	Department of Human Services (Victoria)
GRC	Get Real Challenge (Brisbane)
HALT	Healthy Aboriginal Life Team
HRA	high risk adolescent
MCDS	Ministerial Council on Drug Strategy
NDHS	National Drug Household Survey (Australia)
NSW	New South Wales
NIAT	National Inhalant Abuse Taskforce (Australia)
NT	Northern Territory
NPY	Ngaanyatjarra Pitjantjatjara Yankunytjatjara
NZ	New Zealand
PSPP	Petrol Sniffing Prevention Program
SA	South Australia
SAID	Substance Abuse Intelligence Desk
SEER	Safety, Engagement, Education and Recreation program (Victoria)
UK	United Kingdom
US	United States
VSM	volatile substance misuse
WA	Western Australia
WHO	World Health Organization
YSAS	Youth Substance Abuse Service (Victoria)



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### *A note on terminology:*

Throughout this review, the terms ‘Indigenous Australians’ and ‘Aboriginal Australians’ are used interchangeably. Strictly speaking, the former term has a broader connotation, in that it includes indigenous peoples of the Torres Strait Islands as well as those of the Australian mainland and Tasmania, whereas ‘Aboriginal Australians’ excludes Torres Strait Islanders.

Figure 1: From petrol sniffing to community



*This painting was created in a remote community beset by intermittent petrol sniffing. The artists do not wish to be identified.*

## Executive summary

This review examines published and unpublished literature about interventions designed to combat volatile substance misuse (VSM), defined as the deliberate inhalation of a volatile substance in order to achieve a change in mental state. The review is an updated edition of one initially published by the Cooperative Research Centre for Aboriginal and Tropical Health<sup>1</sup> as *Petrol Sniffing in Aboriginal Communities: a Review of Interventions* (d'Abbs & MacLean, 2000). Whereas the earlier review was restricted in scope to petrol sniffing, the updated review covers other forms of VSM such as inhalation of aerosol paints, and other settings besides remote Indigenous communities.

In this executive summary, findings about specific interventions are itemised. In reality, the impact of any intervention is in part a function of the context in which it occurs. This caveat should be kept in mind when considering all findings presented here.

Volatile substances (also known as inhalants) are usually classified into four groups:

- solvents—liquids or semi-liquids that vaporise at room temperature, such as glues and petrol;
- gases—medical anaesthetics and fuel gases, such as lighter fuels;
- aerosols—sprays containing propellants and solvents, such as aerosol paints;
- nitrites—amyl nitrite or cyclohexyl nitrite found in room deodorizers.

This review covers the first three categories. While nitrites are volatile substances, they do not directly affect the central nervous system and are generally used to enhance sexual experience.

The review is divided into three parts. The first—entitled ‘VSM as a problem’—covers prevalence, patterns, causes and consequences of VSM. Part Two is concerned with interventions, which are grouped under four categories:

- *supply reduction*—actions taken to limit the availability of volatile substances, either by restricting their accessibility or by substituting products with less toxic alternatives;
- *demand reduction*—measures aiming at discouraging VSM;
- *harm reduction*—measures which reduce the risk of harm from VSM, without necessarily reducing its prevalence; and
- *law enforcement*—statutory and community-based measures aimed at enforcing laws, by-laws or other sanctions relating to VSM.

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<sup>1</sup> The Cooperative Research Centre for Aboriginal and Tropical Health has since been superseded by the Cooperative Research Centre for Aboriginal Health.

Part Three, entitled ‘From interventions to strategies’, integrates findings from Part Two into a framework which provides a basis for planning interventions.

### **VSM as a problem: prevalence, causes, consequences**

Data on VSM are often of poor quality, partly because VSM is not a criminal offence, partly because it is often a clandestine activity, and partly because many users are below the minimum age covered by drug use surveys.

Around the world, VSM most commonly occurs among young people from poor (often indigenous minority) groups. It is likely that poverty and marginalisation, rather than cultural attributes of particular groups, account for most VSM. In remote Indigenous communities in Australia, petrol sniffing is the most common form of VSM, whereas in urban and regional centres sniffing aerosol paints (‘chroming’) is the preferred form of VSM among both Indigenous and non-Indigenous youths.

A distinction is normally made between ‘occasional’ (or ‘experimental’ or ‘recreational’) and ‘chronic’ VSM, although none of these terms has a standardised usage. Among urban young people VSM appears to involve a relatively large number of experimental users and a smaller number of chronic users. In Aboriginal communities, however, the sniffing population often contains a high proportion of chronic sniffers, particularly among older age groups.

Australian studies reveal similar age and gender-related patterns of VSM to those found in the UK and US. As elsewhere, prevalence peaks early compared to other drug use, being highest among 12–14 year olds and diminishing thereafter. National surveys indicate a low prevalence of VSM within the Australian population. In 2004 only 2.5% of people aged over 14 years acknowledged ever using inhalants, with 0.4% saying they had done so within the preceding 12 months (Australian Institute of Health and Welfare, 2005). School-based studies, however, indicate that a significant minority is involved. In 2002, 21% of Australian 12–17 year old students surveyed reported ever having used inhalants, compared with 25% reporting having used cannabis (White & Hayman, 2004).

A survey of petrol sniffing in remote Indigenous communities conducted between 2005 and early 2007 indicated that just under 5% of persons aged between 5 and 40 years were current users.

In Australia since 1994 the prevalence of petrol sniffing in some Indigenous communities where it has been present for a long time, especially in Central Australia, appears to have declined. This has occurred alongside reports of increasing VSM in regional and urban centres.

VSM has been linked with a number of markers of deprivation and marginalisation. Inhalant users have been found to exhibit relatively high rates of psychological disorders, including depression, anxiety, stress, anti-social personality disorder and poor self esteem. They are disproportionately involved in petty crime and more likely than other young people to be incarcerated. VSM has been identified as both a cause and a consequence of poor schooling outcomes and early school leaving (Allanson, 1979; Bates, Plemons, Jumper-Thurman, &

Beauvais, 1997; Best et al., 2004; Chadwick, Yule, & Anderson, 1990). It has also been linked with both co-occurring and future drug use (especially alcohol and cannabis), family alcohol dependence or other problematic drug use, childhood physical or sexual abuse, and homelessness or over-crowded housing.

Although VSM has been shown to correlate with these and other indicators of disadvantage, the causal pathways linking indicators with VSM remain poorly understood. Young people have reported using inhalant-induced intoxication to block hunger pains and to dull both physical and emotional pain, or as an escape from otherwise unbearable life situations. One often overlooked reason why young people, Aboriginal and non-Aboriginal, use drugs is because it is exciting and *pleasurable*. VSM products are easily accessible and cheap compared with other drugs, and produce hallucinations that can be both frightening and entertaining.

The consequences of VSM are experienced not only by users themselves, but by their families, communities, and the wider society. For individual sniffers, VSM poses significant threats to health, both short- and long-term, which require preventative and rehabilitative interventions. It can and does also result in death. For the families and carers of sniffers, VSM is often extremely distressing and adds to difficulties and hardships already being experienced by those families. (Interventions should at best enhance, and at the least not undermine, these capacities of family and kinship systems.) For Aboriginal communities, petrol sniffing by young people poses challenges both to traditional authority and cultural patterns and to more ‘Westernised’ authority systems. Finally, VSM generates demands on the juvenile justice and health systems of the wider society.

As a problem, VSM cuts across the work of a range of Commonwealth and state/territory departments, as well as that of many local community councils and non-government organisations.

### **Interventions: supply reduction**

Compared with frameworks in place for regulating supply of other legal drugs such as alcohol or tobacco, there is currently little regulation of inhalant product availability in Australia.

One objection frequently raised to reducing supply of volatile substances is that users will simply substitute other, possibly more harmful, sources of intoxication. This concern is not without foundation. In the UK, the introduction of legislation and education targeting sales of glue products was followed by an increase in deaths from more dangerous butane and aerosol misuse.

Three approaches to VSM supply reduction can be distinguished: product modification; locking up supplies of petrol; and measures (both statutory and voluntary) restricting sales of inhalants.

## **Product modification**

Product modification in turn can take three forms: **replacement of harmful or psychoactive components of inhalants**; addition of deterrent chemicals; and package modification.

The limited evidence available suggests that the most successful of these is the first—that is, reformulating products by replacing particularly harmful chemical components with more benign alternatives. However, not all products can be reformulated in this way.

One well documented example of product modification has been the use of a low-hydrocarbon vehicle fuel, known as Opal, and introduced as part of a Commonwealth-funded Petrol Sniffing Prevention Program in more than 70 Australian Aboriginal communities. Opal cannot be sniffed for intoxication. Anecdotal evidence suggests that, since its introduction early in 2005, it has led to a reduction in petrol sniffing. A formal evaluation of the impact of Opal is currently underway.

Prior to the introduction of Opal, some communities used aviation fuel (known as Avgas) as an alternative to vehicle fuel. Like Opal, Avgas contained low levels of aromatic hydrocarbons, making it unsuitable for sniffing. In 1998 the Commonwealth Government introduced a scheme, known as the Comgas Scheme, under which the use of Avgas as a petrol sniffing prevention measure was partially subsidised. However, Avgas contained high levels of lead, as a result of which it had to be phased out for environmental reasons. An evaluation of the Comgas Scheme found that its introduction was associated with reduced petrol sniffing and associated harms, particularly when implemented alongside other measures.

Product substitution measures for volatile substances commonly misused in urban areas should be further investigated; for instance, restricting spray paint sales to relatively low-toxicity products.

The two remaining ways of modifying inhalants—by adding deterrent chemicals or packaging so as to deter misuse—have both been tried in various settings, without evidence of success.

Evidence suggests that product modification has maximum effect on early and/or occasional users, rather than chronic users.

## **Locking up petrol**

Although many attempts have been made to prevent petrol sniffing by restricting access to supplies, especially in remote communities, evidence suggests that such efforts are almost invariably unsuccessful.

## **Statutory and voluntary restrictions on sales of VSM products**

Most Australian jurisdictions prohibit the sale of specified VSM products where the vendor could reasonably be expected to know the goods are intended for misuse.

A number of jurisdictions have also introduced statutory restrictions on supply of specified VSM products to persons under 18 years. The effects of legislating to restrict sales of volatile products are unclear.

Several local attempts to reduce VSM prevalence have entailed efforts to reduce supply through voluntary agreements with retailers. The limited evidence indicates that targeting retailers has been an effective strategy when introduced through a local community development process entailing retailer education.

### **Interventions: demand reduction**

Measures to reduce demand for inhalants include preventive programs such as educational and recreation-oriented interventions, counselling and family support, and treatment and rehabilitation services. In addition, over the past 20 years several multi-faceted, community-based approaches to preventing and managing VSM have also been implemented, in both remote and urban/regional centres.

#### *Community-based programs*

Evidence from community-based programs in remote regions suggests that:

- There are benefits to be derived from adopting a regional approach, and complementing service provision with brokerage and advocacy activities aimed at promoting local community capacity.
- Remote communities can benefit from dedicated town-based staff who are able to visit to provide support, education, advocacy and information about VSM. Drug and alcohol workers placed in remote communities very often require support and backup from others with specific skills in working with people who use volatile substances.
- Successful community-based interventions in remote communities require support from non-Aboriginal agencies such as police, clinics and schools, as well as Aboriginal agencies and groups.

Effective community campaigns in urban and rural locations have included:

- involvement of a range of community members and agency representatives;
- research and consultation to determine specific features of VSM within the local area;
- improvement of communication mechanisms between local service providers (for instance, police and welfare agencies);
- community education to increase parental and worker sensitivity to the issue;
- retailer education; and
- targeting VSM ‘hotspots’.

### *Education*

Australian educational authorities continue to pursue a policy of not providing education about VSM under school-based drug education programs, on the grounds that such education may inadvertently encourage experimentation with inhalants. Some information about volatile substances is provided through occupational health and safety training. In England and Wales, by contrast, schools are required to include information about solvents in drug education programs. The UK Government is currently funding a five-year follow up study of the impact of school-based drug education on subsequent drug use.

Education targeting known inhalants appears to be ineffective when it adopts scare tactics. However, education highlighting the potential impact of VSM on valued activities, such as capacity to play sport, may be useful.

Education about inhalants for parents and professional people likely to come into contact with VSM, such as teachers and welfare workers, and for communities where VSM occurs, has been shown to be of value.

Several innovative programs have been developed using Indigenous cultural practices as vehicles for combating VSM, in particular through art forms, story telling and restoration of important caring relationships. The impact of such activities is difficult to determine, and few initiatives have been evaluated.

Skills training, remedial education and employment have all been shown to contribute to reducing VSM.

### *Recreation and youth programs*

Recreational activities that are sufficiently exciting to provide an alternative to sniffing, and are available out of hours, can help to prevent VSM, although they are unlikely to attract chronic users.

Successful programs:

- include measures to avoid stigmatising drug users;
- focus on skill and capacity development;
- offer a range of activities including opportunities for risk-taking;
- are offered on a flexible basis;
- utilise local resources; and
- are sustainable.

Youth and recreation programs should not be the primary component of an anti-VSM program in communities with high proportions of chronic sniffers.

Youth work in remote communities is challenging and requires diverse skills, such as operating 4WD vehicles, hunting, painting, crisis support, sporting activities, and applying for grants. Activities must be run during evenings, nights, on weekends and through holidays.

Little research has been conducted into the impact of recreational programs on VSM in urban and regional centres. However, there is some evidence to suggest that they are most effective with young people among whom VSM has not become entrenched.

### *Clinical management of VSM*

There is limited literature to guide clinical management of VSM, and much of what is available warns of poor outcomes compared with other substance misuse.

Thorough client assessment is recommended, to include assessment of family function, co-occurring poly-drug use, co-occurring mental health disorders and a thorough medical examination including screening for cognitive impairment which may impede treatment. The effect of the person's family and social situation on their drug use should also be assessed. For chronic users an assessment of neurological impairment is advised, with follow-up testing to check for improvement during treatment.

Some researchers argue that as intensive VSM is a marker of 'global vulnerability' or part of a 'risk behaviour syndrome', interventions should address the constellation of risks or associated problems, rather than focusing specifically on VSM. Many people engaged in VSM treatment are poly-drug users and treatment attention should not focus solely on one substance.

The requirement for detoxification from VSM is contested. No pharmacotherapies are available to treat inhalant dependence, although anti-depressive and anti-psychotic medications are often used to treat co-occurring mental health concerns.

Some studies argue that developing therapeutic relationships with young people who use volatile substances is particularly important as a precursor to any useful intervention. These kinds of relationships often take time to establish.

Recommendations for clinical management and treatment of VSM focusing on Indigenous youth include investigating the young person's sense of cultural identity and belonging, ensuring access to culturally appropriate services, role models and opportunities to learn about and participate in cultural activities.

The Central Australian Rural Practitioners Association (CARPA) Standard Treatment Manual includes advice for health staff on acute and ongoing care of petrol sniffers.

### *Counselling, family interventions and after-care*

Counselling is the most common form of intervention in response to VSM by Australian alcohol and other drug agencies, although there is little evidence to guide intervention approaches. Inclusion of users' families in counselling interventions is recommended in both Indigenous and non-Indigenous contexts, as is the need for outreach and provision of diversionary activities.

Published guidelines for working with inhalant users stress the need to use counselling techniques such as motivational interviewing, self-monitoring strategies, relapse prevention and goal setting, and skill development in areas such as managing emotions, decision-making and communication.

Difficulties in working with VSM users, particularly in employing cognitive therapies with very young users, and assisting clients to change their behaviour, can lead to despondency among health workers.

Volatile substance users are likely to require intensive after-care and monitoring for relapse. After-care is often provided through an outreach model, focusing on monitoring and reinforcing skills learned in treatment.

#### *Residential treatment and rehabilitation*

Several Australian states and territories have recently established residential facilities for VSM. The most developed residential treatment models for VSM are found in Canada, where treatment consists of a blend of Native American and Western treatment strategies aiming to increase young people's resilience. Most Canadian facilities are well funded, operate under Indigenous control, have structured programs, and emphasise formal education as a means of returning clients to active participation in society.

Outcome studies of Canadian programs point to mixed results. No recent evaluations of Australian residential programs have been published.

#### *Care for people with acquired brain injury (ABI)*

Few options are available for long-term care of young people who have become severely disabled as a result of petrol sniffing or other forms of VSM, and their care generally falls to family members.

#### *Homeland centres (outstations)*

The strategy of sending sniffers to homeland centres, or outstations, has been used by some Aboriginal communities as a means of culturally appropriate banishment, inculcating behaviour change, and providing relief for communities themselves.

To be successful, such programs require adequate resources, a sustainable model of intervention, and community involvement both in the outstation programs themselves, and in providing after-care programs in the communities.

Homeland centres are not equipped to meet the complex medical and psychological needs of some VSM users. The use of homeland centres for VSM intervention has also been criticised on the grounds that they do not provide clients with skills necessary to engage with the wider society, such as education and training.

### Interventions: harm reduction

The application of harm reduction approaches to VSM is controversial, insofar as its primary objective is not reducing drug use *per se*, but rather reducing risk of adverse consequences among those who choose to engage in VSM. However, precisely because VSM does entail such a high risk of serious, including fatal, consequences, there is a strong case for making inhalant users aware of harm reduction options.

Two main harm reduction strategies are available: minimising risk associated with the *settings* in which VSM occurs, and adopting *practices* when sniffing that reduce the risk of accidental harm.

Options relating to settings include:

- avoiding small, enclosed spaces where reduced oxygen supply may lead to loss of consciousness;
- avoiding areas near busy roads, or other places where an accidental fall may have dangerous consequences;
- being in the presence of someone who is not intoxicated, and who can therefore seek help if necessary.

Another strategy—supervising people who will not otherwise desist from VSM while they inhale—is highly contentious.

Options relating to sniffing practices include:

- choosing small containers with small surface areas from which to inhale;
- avoiding covering the head with a plastic bag to intensify exposure;
- avoiding concurrent use of other drugs.

Precautions should be taken against asphyxia resulting from sniffers falling asleep with containers against their faces or blankets over their heads, choking on vomit, accidental burning, and suddenly alarming sniffers.

Whether or not sniffers should be advised that some inhalants are more or less dangerous than other inhalants is a matter of controversy.

### Interventions: law enforcement

While VSM is widely acknowledged to be a health and welfare issue, rather than a criminal justice issue, the high risk that inhalant users pose to themselves and others means that it is also an issue for law enforcement agencies.

VSM is not a criminal offence in any Australian jurisdiction. In recent years several Australian jurisdictions have amended police powers to intervene in VSM episodes, in two main ways: by authorising police to confiscate inhalants and related equipment; to apprehend young people engaged in VSM and release them into the care of a responsible person or a place of safety.

An evaluation of the ‘places of safety’ measures in Queensland in 2005 found that, while the facilities had provided a safe haven for inhalant users, they had not been extensively used by police as a custodial option.

A number of Aboriginal communities and organisations have imposed sanctions on VSM in the form of by-laws. However, in some places the effectiveness of these has been compromised by a lack of suitable places to which apprehended inhalant users can be taken, and/or by an absence of police to enforce the by-laws.

Aboriginal community-based police liaison officers can play a useful role in complementing sworn police officers; however, their capacity to act is sometimes constrained by local cultural factors, and they should not be seen as an alternative to sworn police officers.

Community patrols, also known as night patrols and street patrols, can provide an important mechanism for communities themselves to maintain peace, mediate conflicts and reduce harm related to VSM and other substance misuse. Their effectiveness is dependent upon a number of factors, including clear and mutually satisfactory relationships with local police, and adequate funding.

In order for law enforcement agencies to work effectively against VSM, a number of pre-conditions must be met. These include an adequate police presence, appropriate short-term custodial options, appropriate sentencing options, trained and supported community-based agencies such as night patrols, and clearly defined relationships linking police with health and welfare agencies.

## **From interventions to strategies**

The development of a strategy involves a number of steps:

- identifying and describing a problem or problems;
- clarifying and prioritising objectives;
- identifying resources available, and resources needed, in order to pursue those objectives;
- selecting the best interventions for pursuing prioritised objectives;
- implementing the interventions;
- identifying and addressing barriers to implementation that arise in the course of the program;
- identifying and addressing unforeseen consequences;

- monitoring implementation processes and outcomes;
- feeding-back information obtained to relevant stakeholders; and
- modifying the strategy in light of information gathered.

*How* each of these steps is undertaken is no less important than *what* is decided.

This review demonstrates that when communities have been successful in doing something about VSM, a number of conditions have been present. **First, there has been sufficiently strong community resolve for families and community decision-making structures to act cohesively in deciding on and supporting strategies, and community members and key agency representatives have been actively involved in implementing them.**

Second, not one but a range of interventions must be put in place. The ways in which mind-altering drugs, including volatile substances, are used in any given context, and the consequences of those usage patterns, are a product of the inter-related effects of three factors: pharmacological-toxicological properties of the drug; attributes of the drug user; and aspects of the social and physical environments in which drug use takes place (Zinberg, 1984). Strategies against VSM are most likely to be effective when they comprise interventions designed to influence each of these three factors.

Interventions addressing VSM are too rarely critically evaluated. Sensitive program evaluation is essential to ensure a rational deployment of effort and allocation of resources.

The majority of VSM interventions have focused on individual users and/or their families. These include education, counselling, residential treatment, removal of sniffers to homeland centres or outstations, and some harm reduction measures. These interventions have a useful role to play but need to be complemented by other measures to reduce the availability or toxicity of substances and provide an environment where VSM becomes less attractive to potential users.

Three main ways of changing the settings in which VSM occurs are identified:

- restricting the availability of inhalants;
- providing recreational, training and/or employment programs;
- imposing legal sanctions and/or community-based sanctions.

Although more resources are available today for VSM interventions, and although governments in Australia have committed themselves to a national policy framework for addressing VSM, many interventions even today are not evaluated, and the quality of morbidity and mortality data on VSM remains deficient.

Ultimately, the most effective interventions into VSM are likely be those activities that redress social and economic disadvantage and enhance the opportunities, capacities and confidence of young people.



# 1 Introduction

The purpose of this study is to review interventions that have been implemented to combat volatile substance misuse (VSM), defined as the ‘deliberate inhalation of a volatile substance in order to achieve a change in mental state’ (Advisory Council on the Misuse of Drugs, 1995, p. 14). The focus is on interventions in Australia, but we have also sought and incorporated evidence from overseas. The review is an updated edition of one initially published by the Cooperative Research Centre for Aboriginal and Tropical Health<sup>2</sup> as *Petrol Sniffing in Aboriginal Communities: a Review of Intervention* (d’Abbs & MacLean, 2000).

As well as incorporating literature published since 2000, the updated review is broader in scope than its predecessor. The 2000 review focused on petrol sniffing in remote Australian Indigenous communities. Coincidentally, around the time of publication of the earlier review, other forms of VSM such as inhalation of aerosol paints also began to arouse concern. These new patterns emerged mainly in urban and regional settings, and involved non-Indigenous as well as Indigenous young people. In response to this trend, we have expanded the scope of this review to cover other forms of VSM besides petrol sniffing, and other settings besides remote communities.

Volatile substances are so-called because they give off fumes at room temperature. Volatile substance misuse differs from other forms of psychoactive drug use in that direct inhalation is almost always the only means of self-administration (National Institute on Drug Abuse, 2005). Around 250 household, medical and industrial products—many of them readily available—contain potentially intoxicating inhalants (Australian Drug Foundation, 2005). They are usually classified into four groups:

- Solvents—liquids or semi-liquids that vaporize at room temperature, such as glues and petrol;
- Gases—medical anaesthetics and fuel gases, such as lighter fuels;
- Aerosols—sprays containing propellants and solvents;
- Nitrites—amyl nitrite or cyclohexyl nitrite found in room deodorizers.

This review covers the first three of these categories. **Aerosol paint sniffing is the form of VSM mostly commonly reported within urban and rural areas.** This practice is known in some settings as ‘chroming’ for the silver and gold ‘chrome’ coloured paints preferred by users. In remote Indigenous communities petrol sniffing remains the most common form of VSM. Gases (often butane and propane) are among other products subject to VSM in Australia. **We do not consider nitrites in this review. While strictly speaking they are volatile substances, nitrites are used primarily to enhance sexual pleasure (on nitrites see French & Power, 1998; Romanelli, Smith, Thornton, & Pomeroy, 2004).**

<sup>2</sup> The Cooperative Research Centre for Aboriginal and Tropical Health has since been superseded by the Cooperative Research Centre for Aboriginal Health.

Much of the literature on interventions into VSM consists of unpublished or ‘grey literature’. We have endeavoured to survey both published and unpublished reports, by taking the following steps:

- searching databases for post-1999 literature, using the keywords volatile substance, solvent, and inhalant;
- following up articles referenced in literature accessed through the search;
- writing to Australian Government departments, non-government organisations known to be associated with VSM interventions, and key international researchers.

Despite our efforts, it is likely that we have overlooked some material. We should also acknowledge drawing on a number of major inquiries and reports on VSM that have taken place since 2000. In particular, the report of a Victorian Parliamentary inquiry released in 2002 provides a detailed consideration of VSM and associated interventions, in both rural and urban contexts (Parliament of Victoria Drugs and Crime Prevention Committee, 2002). In 2006 the Community Affairs Reference Committee of the Commonwealth Senate reported on an inquiry into petrol sniffing in Australian Indigenous communities (Senate Community Affairs Reference Committee, 2006). Also in 2006 the final report of the Australian National Inhalant Abuse Taskforce (NIAT), a body established by the Ministerial Council on Drug Strategy in 2003, was released under the title *National Directions on Inhalant Use* (2006). A list of VSM research and reports is provided in the NIAT report (National Inhalant Abuse Taskforce, 2006, pp. 31 & A5).

Since publication of the first edition of this review, there has been a shift towards both more systematic literature reviews, and towards viewing evidence hierarchically, with randomised control trials at the top of most hierarchies, and purely descriptive studies at the bottom. Almost all of the published evidence relating to VSM interventions belongs in the lower orders of evidence. We are not aware of a single relevant randomised controlled trial, and few studies use ‘controls’ of any sort. Many reports of interventions contain little more than a program description and some quantitative or qualitative post-intervention data; a few include pre- and post-intervention data, quantitative and/or qualitative. In many cases, although the scientific quality of the evidence is poor, the reports still contain insights or observations that we believe are relevant to likely readers of this review. That, indeed, has been our principal criterion for inclusion.

We have aimed to provide a broad overview of the literature for people with reasonable English skills. We imagine our readers to be either living in affected communities, members of non-government organisations dealing with VSM, or policy makers. People for whom English is not a first language may not find the review easy to read. We refer them to the Aboriginal Alcohol and Drug Council of South Australia’s plain language resource kit for communities wishing to address VSM (Aboriginal Drug and Alcohol Council (SA) Inc, 2000).

The review is also limited to documents written in English. Some accounts of petrol sniffing interventions in Aboriginal languages—for instance the CD set produced by CAYLUS (2006b)—have not been translated into English and thus we have been unable to draw upon them.

The review is divided into three parts. The first part focuses on ‘VSM as a problem’, and includes chapters on prevalence and patterns of VSM both overseas and in Australia, causes of VSM, and the large number of associated problems. Part Two is concerned with interventions, and is divided into chapters dealing with supply reduction, demand reduction, harm reduction and legislation. In the context of VSM, these are defined as follows:

- **supply reduction**—actions taken to limit the availability of volatile substances, either by restricting their accessibility (i.e. through retailer education) or by substituting the products with a less toxic alternative;
- **demand reduction**—measures aiming at encouraging individuals and groups of people not to misuse volatile substances;
- **harm reduction**—measures which reduce the risk of harm from VSM, without necessarily reducing its prevalence;
- **law enforcement**—statutory and community-based measures aimed at enforcing laws, by-laws or other sanctions relating to VSM.

The final part, entitled ‘From interventions to strategies’, is an attempt to summarise and integrate the findings from the previous chapters into a framework which provides a basis for planning interventions. This framework draws on the work of Zinberg (1984), who argues that the manner in which mind-altering substances are used, and the consequences of those patterns of use, are a product of the interrelated effects of three sets of factors: pharmacological properties of the *substances* concerned, attributes of individual *users*, and characteristics of the *environment* in which use takes place. No single factor, taken by itself, provides an adequate framework for explaining the use and effects of a mind-altering substance, and consequently no single factor constitutes, by itself, an adequate basis for intervention. One major reason why so many interventions addressing VSM in the past have had little or no effect is that they were focused exclusively on one of these factors, without consideration being given to interactions with other factors.

Finally, in considering intervention options, one qualification should be borne in mind. People who misuse volatile substances often use a range of drugs (Australian Institute of Health and Welfare, 2005). In the main, interventions that address the issues underlying drug use will have a more profound effect than attempts to stop them from using a specific substance. Indeed, the most effective measures against VSM by Indigenous and marginalised people may prove not to be drug-related interventions at all, but other developments which change the mix of economic, cultural and spiritual contents of people’s lives and environments. Brady concludes a major study of petrol sniffing by pointing out that members of Aboriginal society, like those of all societies, need opportunities for meaningful productive activities. ‘People abandon their drug use when it begins to interfere with too many other valued aspects of their lives. If there are no other valued aspects to life then there is simply no compulsion to abstain’ (1992, p. 193).



**PART ONE:  
VOLATILE SUBSTANCE  
MISUSE AS A PROBLEM**



## 2 Prevalence and patterns

Data on prevalence and patterns of VSM are notoriously inadequate, for several reasons. Firstly, in many places inhalation of volatile substances is not, in itself, an offence, and therefore tends not to be recorded in law enforcement statistics. Secondly, much VSM is a clandestine activity that takes place at night and, in the case of petrol sniffing, often in remote locations; monitoring trends in use is therefore not easy. Thirdly, surveys of drug use by young people are typically based on samples of school students or on general population samples of people aged 14 years and over. Many inhalant users are aged less than 14 and do not attend school regularly, so do not appear in such surveys. With these constraints in mind, we here review evidence relating to patterns and prevalence of VSM in Australia and elsewhere.

### 2.1 Patterns of volatile substance misuse

Just as the term ‘volatile substance’ covers a wide variety of intoxicants, the label ‘VSM’ also embraces several distinctive populations of users, with different patterns of use. Following Rose (2001), it is useful to distinguish four groups:

- ‘average’ young people who experiment with inhalants—and usually do not persist;
- marginalised young people who engage in VSM. In urban settings in Australia, this most frequently involves ‘chroming’ or sniffing aerosol paints. The Parliament of Victoria Drugs and Crime Prevention Committee (Parliament of Victoria Drugs and Crime Prevention Committee, 2002) found that of 243 Children’s Court Search Warrants involving children aged 11 years and over, issued in the state of Victoria between December 2001 and March 2002, 30% included evidence of VSM;
- young people in some remote Indigenous communities who engage in petrol sniffing;
- marginalised and often homeless adults who sometimes use inhalants when they cannot obtain alcohol.

Researchers in the United States (US) have schematised a continuum of three types of inhalant user—young users, adolescent poly-drug users and chronic adult users—linked with progressively diminishing prospects for rehabilitation (May & Del Vecchio, 1997; Oetting, Edwards, & Beauvais, 1988).

Within specific inhalant using sub-populations, a further distinction is commonly made between ‘occasional’ (or ‘experimental’ or ‘recreational’) and ‘chronic’ use. None of these terms has a standardised usage; however, ‘occasional’ and ‘chronic’ are terms used to differentiate infrequent and less intensive VSM from long-term and generally also more problematic use.

Epidemiological research in the US reveals a correlation between early initiation of VSM (at age 13 or 14), regular use, and subsequent volatile substance dependence as measured by DSM-IV criteria (Wu, Pilowsky, & Schlenger, 2004). There is also general agreement in the

literature that the people who are the hardest to help stop sniffing are chronic sniffers. This is a critical point for those planning interventions: it is much easier to help people to stop VSM if the practice has not yet become entrenched. By the time someone has become a chronic sniffer, the likelihood of their stopping is substantially reduced.

Among urban young people volatile substance misuse appears to involve a relatively large number of experimental users and a smaller number of chronic users. In Aboriginal communities, however, the sniffing population often contains a relatively high proportion of chronic sniffers, particularly among older age groups, although the proportion so labelled depends in part upon one's definition of a chronic sniffer. For instance, a study of sniffers in Maningrida found that the mean period which current sniffers had been inhaling petrol was eight years (Burns, d'Abbs, & Currie, 1995), giving them significant opportunity to sustain neurological damage.

## 2.2 Volatile substance misuse around the world

It is difficult to assess VSM prevalence accurately within any population. Many general population drug use surveys exclude people aged less than 14 or 15 years, and/or—as they are conducted by phone—people without a fixed address. Studies of school populations exclude those who have left school early. Nonetheless, international research has identified inhalant use as a problem with particular prevalence among young people from poor and Indigenous (often minority) groups (Dinwiddie, 1994). VSM has been identified as a concern for North and South American First Nation peoples, Inuits, Indians and Pakistanis, black South Africans, Indigenous Australians, Maoris, Pacific Islanders and gipsy children in Eastern Europe (Chaudron, 1978; Moosa and Loening, 1981; Brady, 1988; Beauvais and Oetting, 1988; Flanagan and Ives, 1994). Beauvais and Trimble (1997) estimate that nearly 20 million people in Central and South America—mostly street children—sniff inhalants.

Despite its prevalence in developing countries, the highest national levels of 'lifetime'<sup>3</sup> use among young people have been recorded in the developed world. A United Nations report lists 41 countries where prevalence data is available, and found the highest rates in the US, the UK (United Kingdom) and Australia (Commission on Narcotic Drugs, 1999). Inhalant use in the US appears to have recently increased in prevalence, at a time when most illicit drug use has either declined (cannabis, ecstasy and amphetamines) or held steady (heroin, cocaine and crystal methamphetamine) (Johnston, O'Malley, Bachman, & Schulenberg, 2006).

Prevalence of VSM also varies between ethnic groups. In both the UK and US, higher rates are recorded among Caucasians than Asians, Afro-Caribbeans (UK) or African-Americans (US) (Kurtzman, Otsuka, & Wahl, 2001; McGarvey, Clavet, Mason, & Waite, 1999). In the US, Native American youth are more likely than members of other ethnic groups to use inhalants (Mosher, Rotolo, Phillips, Krupski, & Stark, 2004), although one study reports a downward trend among American Indians (Beauvais, Wayman, Jumper-Thurman, Plested, & Helm, 2002).

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3 Measures of 'lifetime' use indicate whether research participants report having ever used a particular substance.

Because Indigenous minorities in some countries contain a disproportionate number of poor and/or otherwise marginalised people, they tend to be over-represented among inhalant users; however, it is likely that poverty and marginalisation, rather than Indigenous status *per se*, account for this pattern. Within Indigenous populations, prevalence is also varied. For instance, while Canadian Indians are more likely than the general population to sniff petrol, some communities maintain low rates or are free of the practice (May & Del Vecchio, 1997).

Few inhalant-users become long-term or chronic users (Flanagan & Ives, 1994; Ramsey, Anderson, & Bloor, 1989). Only 1% of Australian 17 year olds said they used inhalants more than 10 times in 2002 (White & Hayman, 2004). In a study of adolescents in the US only 0.4% of respondents met the DSM-IV criteria for inhalant abuse or dependence (Wu et al., 2004).

### 2.3 Patterns of VSM in Australia

Australian studies reveal similar age and gender-related patterns of VSM to those found in the UK and US. As elsewhere, prevalence peaks early compared to other drug use, being highest among 12–14 year olds and diminishing rapidly thereafter (Premier's Drug Prevention Council, 2004; White & Hayman, 2004). National Drug Household Surveys (NDHS) indicate a low prevalence of VSM within the general Australian population. In 2004 only 2.5% of people aged over 14 years acknowledged ever using inhalants, with 0.4% acknowledging VSM within the preceding 12 months (Australian Institute of Health and Welfare, 2005).

Studies of school-age cohorts, however, indicate that a significant minority is involved. For instance, in 2002, 21% of Australian 12–17 year old students surveyed reported ever having used inhalants, compared with 25% reporting having used cannabis. Around 9% of 12 year olds and 2% of 17 year olds had used inhalants in the week preceding the survey (just over 2% of 12 year olds had used cannabis during this period) (White & Hayman, 2004). Males tend to use volatile substances at higher rates than females, other than among young adolescent users, where girls report similar or higher prevalence (Australian Institute of Health and Welfare, 2005; Drug Treatment Services Unit, 1999). Males also appear to use more intensively and problematically and are over-represented in treatment populations (Matthews et al., 2004; White & Hayman, 2004).

People who report inhalant use also frequently use other drugs (Pearson & Squires, 2003; Premier's Drug Prevention Council, 2004). The 2004 NDHS found that of those who had used inhalants within the last 12 months, 55.7% had combined this use with alcohol, 40.9% with cannabis, 30.8% with ecstasy/designer drugs and 24.3% with amphetamines (Australian Institute of Health and Welfare, 2005). A study of 110 inhalant-using clients of a Melbourne drug treatment service indicated that approximately four-fifths were also users of cannabis and alcohol and smaller proportions also took amphetamines, heroin and benzodiazepines (Lane, 2005).

During the late 1990s VSM became a matter of increasing concern in Australian cities and towns. In April 1997, for instance, 60 people were reported to be sniffing inhalants (mostly aerosol paints) in Alice Springs (Mosey 1997). Through the early 2000s it became apparent that VSM was by no means confined to the Indigenous population. By 2002 the VSM problem in

Queensland appeared to have spread from ‘beyond the Indigenous and rural communities to other young people, some as young as 12, across the state’ (Coleman, 2002, p. 5). Paint inhalation and other forms of VSM by both Indigenous and non-Indigenous people were recorded as matters of concern in urban and rural areas including Mount Isa, Cairns, Brisbane, Gippsland, Melbourne and Perth (Gray et al., 2006; Murphy, 2005; Ogwang, Cox, & Saldanha, 2006; Youth Affairs Council of North Queensland, 2005). However, just as petrol sniffing does not affect all remote Indigenous communities so also its prevalence varies between states, towns and cities. The literature contains few references, for instance, to VSM in either Sydney or Tasmania although this does not mean that it does not occur in these localities.

*Figure 2: Examples of aerosol cans used for graffiti and ‘chroming’*



## 2.4 VSM among Indigenous Australians

Studies of VSM in specific Indigenous communities suggest a higher prevalence than across the Australian population. While there are more non-Indigenous than Indigenous users of volatile substances in Australia, Indigenous people are nearly twice as likely as non-Indigenous people to use these substances (National Inhalant Abuse Taskforce, 2006). Moreover, petrol sniffing in some remote Australian Indigenous communities, in conjunction with other manifestations of poor health and lack of social opportunities, has consequences for individuals and their communities that are far greater than might be expected from the numbers of young people involved (Shaw et al., 2004).

Petrol sniffing remains the most common form of VSM in remote Indigenous communities, whereas in urban and regional settings spray paint appears to be the VSM product most frequently used by both Indigenous and non-Indigenous youth. We have argued previously that patterns of VSM appear to be determined by the user's location (i.e. whether they live in a remote community or in town), rather than by whether or not they are Indigenous (MacLean, d'Abbs, & Robertson-McMahon, 2005).

Petrol sniffing has been observed in some Central Australian Indigenous communities since the early 1940s, although levels of use were then low (Brady, 1992). Brady (1988) reported petrol sniffing in 1985 as being present in 29 Aboriginal communities in the Northern Territory (NT) and 26 communities in other states. At that time, according to Brady, petrol sniffing was not a problem in the Kimberleys or the Pilbara region of Western Australia (WA), or in the Barkly Tablelands, NT. It occurred mainly in Arnhem Land, and in Central Australia among desert Aborigines, and had also been reported in the Riverina region of New South Wales (NSW). Brady estimated the total number of habitual petrol sniffers in WA, South Australia (SA) and NT at between 600 and 1000 (Brady, 1992).

In 1994 Brady and Torzillo argued that petrol sniffing patterns had changed, with intensity of use increasing over the preceding 20 years, and with more users sniffing over longer periods, resulting in rising morbidity and mortality (Brady & Torzillo, 1994, p. 176). Since then, further shifts have been noted. Some communities have succeeded in reducing VSM, especially where Avgas (aviation fuel) and more recently Opal have been used as non-sniffable substitutes for unleaded petrol, in conjunction with a range of community-based interventions such as outstation programs (Shaw et al., 2004; Stojanovski, 1999).

Despite these successes, by the late 1990s petrol sniffing was being reported in some previously unaffected communities—in the Katherine region of the NT, Cape York in Queensland, south-west Queensland, western NSW and northern Victoria. The East Arnhem and Katherine regions also reported sniffing but the Barkly tablelands and communities to the west of Katherine did not (Select Committee on Substance Abuse in the Community, 2004). In 2005 petrol sniffing was reported to be entrenched in parts of the western corridor of Central Australia, and the tri-state region of SA, WA and the NT (Access Economics Pty Ltd, 2006).

During 2006 and 2007 d'Abbs and Shaw oversaw a series of surveys of petrol sniffing prevalence in more than 70 communities that had introduced Opal fuel (d'Abbs & Shaw, 2007). The methodology, adapted from a procedure developed by Nganampa Health Council, involved obtaining population lists of all persons aged 5–40 years in the communities concerned, and then asking at least three community residents to indicate whether persons on the list were current sniffers, former sniffers, or had never sniffed<sup>4</sup>. The estimated numbers of sniffers derived from this methodology are listed in Table 2.1 below. Overall, just over 1000 people were found to be currently sniffing, representing 4.8% of the total population aged 5–40 years.

<sup>4</sup> In some cases, population lists could not be obtained, and estimates of numbers of sniffers were collected, again by asking local community residents such as health workers. In the Anangu Pitjantjatjara Yankunytjatjara (APY) Lands the population lists were compiled by Nganampa Health for their own survey of petrol sniffing in APY communities; they used a base of population aged 10-40 years.

*Table 2.1: Estimated number of current petrol sniffers in remote communities in seven Australian regions*

Region	Population 5–40 yrs	No. of users	% users
APY Lands	1969 (10–40 yrs)	219	11.1
East Kimberley	547	32	5.8
Top End*	12 985	266	2.0
Far North Queensland	1861	96	5.2
Ngaanyatjarra Lands (WA)	1035	145	13.9
Eastern Goldfields	92	5	5.4
Central Australia	4418	244	5.5
<b>Total</b>	<b>20 938</b>	<b>1007</b>	<b>4.8</b>

\* Data not available for four small Top End communities omitted from list.

Most Indigenous petrol sniffers are between 8 and 30 years of age, with a concentration in the 12–19 years range (Brady & Torzillo, 1994; Senate Community Affairs Reference Committee, 2006). Recent evidence, however, points to a broadening of the age range of users in Aboriginal communities. A 2006 NT inquiry heard evidence that the range included sniffers as young as five years and as old as thirty (Legislative Assembly of the Northern Territory, 2004; Senate Community Affairs Reference Committee, 2006). A similar trend towards an ageing inhalant user population was observed also in Victoria (Premier’s Drug Prevention Council, 2004). Increased prevalence in VSM among 18–25 year olds has also been recorded in the US (Wu et al., 2004).

Like long-term users in the mainstream population, Indigenous petrol sniffers are more likely to be male than female. In Central Australian remote communities Mosey (1997) reported that about a quarter of sniffers were girls. Similarly Shaw (1999) found that in 1996, 28% of sniffers in the community she studied were female, but that this proportion was increasing.

Indigenous petrol sniffers are more likely than other young inhalant users to become chronic users. In a study of a sniffing population in a Central Desert community, Shaw categorised 16% as chronic, 28% as regular and 56% as occasional. Chronic sniffers were more likely to be older, most of them between 20 and 29 years. A disturbing finding from this study was that more than two-thirds of occasional sniffers aged between 15 and 19 years of age were likely to become regular or chronic users as they got older (Shaw, 1999).

## 2.5 Summary

- Data on VSM are often of poor quality, partly because VSM is not a criminal offence, partly because it is often a clandestine activity, and partly because many users are very young and are not counted in drug use surveys.
- Around the world, VSM most commonly occurs among young people from poor (often indigenous minority) groups. It is often associated with poly-drug use.
- In remote Indigenous communities in Australia, petrol sniffing is the most common form of VSM, whereas in urban and regional centres sniffing aerosol paints ('chroming') is the preferred form of VSM.
- In Australia, since 1994 there appears to have been a reduction in intensity of petrol sniffing in some areas where it has been prevalent for a long time, particularly in Central Australia, although some communities still experience high levels. VSM by marginalised Indigenous and non-Indigenous youth has become a matter of community concern in some Australian cities and towns.
- A survey of petrol sniffing in remote communities conducted between 2005 and early 2007 indicated that fewer than 5% of persons aged between 5 and 40 years were current users.

### 3 Why do some people inhale volatile substances? Correlates and causes

Interventions addressing VSM are invariably informed by beliefs about its causes. If boredom is seen to be the cause, recreational programs might be developed. If VSM is considered to be a disease or illness, a treatment program is the logical response. This section looks at explanations that have been offered for VSM. We begin by summarising literature on correlates between VSM and a host of psychological and social factors, then examine attempts to establish causal pathways leading to VSM.

A question that emerges from our reading of this literature is the extent to which Indigenous Australian VSM should be treated as a separate issue in its own right, or as an instance of VSM that happens to occur in a particular population. As the following review shows, instances of both approaches can be found.

#### 3.1 Correlates of inhalant use

The correlation between VSM and increased rates of psychological disorder—**depression, anxiety, and stress**—is recurrently stressed in the literature (Best et al., 2004; Sakai, Hall, Mikulich-Gilberts, & Crowley, 2004; Wu et al., 2004). Inhalant users have been found to have particularly high incidence of attention-deficit hyperactivity disorder (Lane, 2005; Matsumoto, Kamijo, Yamaguchi, Iseki, & Hirayasu, 2005), antisocial personality disorder (Brouette & Anton, 2001; Dinwiddie, Reich, & Cloninger, 1991) or poor self-esteem (May & Del Vecchio, 1997).

Inhalant users are disproportionately likely to be involved in petty crime and violent, anti-social behaviour, to spend time with other ‘deviant’ youth, and to be incarcerated (Best et al., 2004; McGarvey, Canterbury, & Waite, 1996; Swadi, 1996; Wu et al., 2004). VSM has been identified as both a cause and a consequence of poor schooling outcomes and early school leaving (Allanson, 1979; Bates et al., 1997; Best et al., 2004; Chadwick et al., 1990). It has also been linked with both co-occurring and future drug use, including intravenous and other poly-drug use, cigarette smoking and excessive alcohol use (Best et al., 2004; Dinwiddie, Reich, & Cloninger, 1991; Flescher, Tortolero, Baumler, Vernon, & Weller, 2002; Kurtzman et al., 2001; National Inhalant Abuse Taskforce, 2006; Sakai et al., 2004; Storr, Westergaard, & Anthony, 2005; Swadi, 1996; Wu et al., 2004; Wu, Pilowsky, & Schlenger, 2005). Family alcohol dependence or other problematic drug use is also seen as a predictor or correlate of inhalant use (Gutiérrez & Vega, 2003). Inhalant use has been linked with family problems such as high levels of conflict, early leaving of the family home and parental death, and experiences of the child welfare system (Frank, Marel, & Schmeidler, 1988; Lara, Romero, Dallal, Stern, & Molina, 1998; Smith, Joe, & Simpson, 1991; Swadi, 1996). Links have been established between childhood physical or sexual abuse (Fendrich, Mackesy-Amiti, & Wislar, 1997; Howard, Walker, Cottler, & Compton, 1999; Lane, 2005; Sakai et al., 2004; Segal, 1997) or emotional deprivation (Zur & Yule, 1990).

Homelessness and living in over-crowded housing appear to correlate with VSM across a range of cultures (Cheverton, Schrader, & Scrogings, 2003; Gutiérrez & Vega, 2003; Mallett, Edwards, Keys, Myers, & Rosenthal, 2003). In Brisbane, 23 of 50 surveyed clients of an outreach service for homeless youth identified themselves as daily or weekly users of inhalants (Pearson & Squires, 2003).

### 3.2 Causes and reasons

The social sciences offer two kinds of explanations for phenomena: those based on empirically established relationships between which a causal link is asserted (e.g. some young people do X because they have low self-esteem) and those based on the reasons people give for doing something (e.g. some young people do X because they want to defy authority, or because they like the particular kind of ‘high’ that X offers). Although attempts to explain inhalant use have drawn on both approaches, the causal connections between inhalant use and its correlates remain far from clear (Oetting et al., 1988). For example, one study comparing heroin users with and without a history of inhalant use concluded that inhalant use was a causal factor in later heroin use (Holger & Kindermann, 1986). Later longitudinal research appeared to confirm, after controlling for confounding factors, that young people who had used inhalants by age 16 were at least nine times more likely to use heroin in the future (Johnson, Schutz, Anthony, & Ensminger, 1995). Did this mean that VSM *caused* heroin use? A more recent study cautions that a general susceptibility to drug use is more likely to be responsible for the link between early inhalant use and future opiate use, rather than a direct causal relationship (Storr et al., 2005).

Although an association between inhalant use and low socio-economic status is frequently reported (Beauvais & Oetting, 1988; Dinwiddie, 1994; Howard, Walker, Cottler, & Compton, 1999; Lara, Romero, Dallal, Stern, & Molina, 1998; Shah, Vankar, & Upadhyaya, 1999), the nature of this relation is rarely explored. A recent US study concludes that adverse socio-economic conditions, rather than ethnicity or race, account for most VSM. For instance, Native Americans living on reserves with poor access to schooling or other opportunities report higher rates of VSM than Native Americans living in other settings (National Institute on Drug Abuse, 2005).

Solvent use, whether by Aboriginal or non-Aboriginal young people, is generally a social activity (Brady, 1992; Carroll, Houghton, & Odgers, 1998; MacLean, 2005). Marginalised young people in both urban and remote communities speak of using volatile substances to alleviate boredom (Cheverton et al., 2003). Young people both in Australia and elsewhere have been reported to use volatile substance-induced intoxication to block hunger pains and to dull both physical and emotional pain (Cheverton et al., 2003). Some young people speak of VSM as providing an ‘escape’ from unbearable life situations (MacLean 2006).

Like other drug use, VSM also functions as a way of communicating information about one’s identity. Brady has argued that in Aboriginal communities sniffing is seen as a means for young people to express power over their bodies—one of the few forms of authority available to many Aboriginal young people. Some users, according to Brady, are motivated by a desire to do this

through becoming thin, which in turn occurs as a result of petrol sniffing inhibiting appetite (1992, pp. 78–82). Petrol sniffing is also practised, according to Brady, in order to deliberately provoke outrage in sniffers' own communities and among local non-Indigenous staff.

Like petrol sniffing, inhaling spray paint in an urban context is also symbolically charged, and may be used to shock and disturb others. Non-indigenous young people in one study reported deliberately using VSM to upset parents, carers or members of the public (MacLean, 2006). Another study (Ogwang et al., 2006) concluded that paint sniffing in public places in Brisbane enabled young Indigenous people to express resistance at white domination and their own marginality. Policing responses to VSM, the authors argue, only served to intensify young people's alienation and hence perpetuate the social setting in which VSM becomes attractive for them.

A study of current, ex- and non-volatile solvent users in Perth, only a minority of whom were Aboriginal, found that volatile substance users both had and wanted a more 'non-conforming reputation' than non-users (but not ex-users) (Houghton, Odgers, & Carroll, 1998, p. 205). The study found also that peer groups of volatile substance users could lend members a strong sense of identity: 'adolescents are using specific substances, such as volatile solvents, as a means to attain an ideal reputation, one which allows them to both achieve and experience success' (1998, p. 208). Although solvent users generally have a poor self-image, within peer groups of solvent users, chronic users have the highest status (Carroll et al., 1998).

One often overlooked reason why young people, Aboriginal and non-Aboriginal, use drugs is because it is exciting and *pleasurable*. VSM products are easily accessible and cheap compared with other drugs, and produce hallucinations that can be both frightening and entertaining. Some regular users report that their preferred inhalants offer not just one among several ways of getting high, but a distinctive and valued hallucinatory experience. Users report visions of ancestors or spiritual beings, characters from popular culture and hallucinatory engagement with contemporary film or electronic games (Brady, 1992; MacLean, 2005, 2007a). As Langton remarks:

If you look at why white kids do heroin, or coke or ecstasy, it's not necessarily because they're powerless. Some of them are quite powerful. So why do they do it? For pleasure. I think that fundamental factor is ignored in much of the discussion on alcohol and substance misuse (Collinge, 1991, p. 22).

A few studies also ask the question: Why do inhalant users stop? A small qualitative study undertaken in NSW (Finney Lamb, Dillon, & Copeland, 2007) found that factors contributing to VSM cessation included unpleasant side-effects, lack of a 'high', perceived stigma and concerns about harms associated with the practice. Some participants stopped after a bad experience with a volatile substance or because of a health scare. Relationships with family or friends also helped some young people to cease VSM, as did a change in the availability of other preferred drugs.

In Aboriginal communities, changes in social circumstances appear to be associated with cessation. In a study of young men living in an Indigenous community in northern Australia, Burns et al.

(1995) found that male ex-sniffers interviewed had most commonly ceased VSM on the advice or instruction of a parent or senior community member. Obligation to children, a wife or a job was the second most cited reason for giving up petrol sniffing. Shaw (2002), in a Central Australian study, reported that three young men stopped sniffing after experiencing a significant life event (marriage or moving to an outstation) at a time when community pressure to stop sniffing petrol was most intense (Shaw, 2002). Brady (1992) also found that people would stop sniffing after a major life change such as getting married, having a child or becoming Christian.

### 3.3 Explaining VSM in Indigenous communities

Whereas most explanations for substance misuse draw on the pathology-oriented perspective of Western clinical science, attempts to explain VSM in Australian Aboriginal communities have tended to turn to other frameworks, citing community-level stress or the wider social and cultural impact of 200 years of dominance at the hands of non-Indigenous Australians. Some Indigenous writers describe VSM as an illness or addiction caused by cultural disruption (particularly to family structures), colonisation and dispossession. For instance, Divakaran-Brown and Minutjukur (1993) argue that petrol sniffing must be seen as part of a process of social deterioration, pointing out that petrol sniffing is a malady which besets lonely young people who have experienced family breakdown or whose parents or other family members have died.

In an early analysis based on communities in Arnhem Land, NT, Eastwell (1979) argued that petrol sniffing frequently occurred in large settlements in which different clan-language groups lived in unaccustomed mutual proximity, and in which traditional patterns of social order are threatened. Nearly 20 years later, Burns (1996) attributed petrol sniffing in one such community to a combination of conflicts between landowners and other groups living in the community, government domination of community affairs, and widespread social and cultural dislocation.

Brady (1992), however, has questioned the utility of ‘socio-political’ explanations on the grounds that they characterise petrol sniffers as victims and thereby as powerless to control their drug use. She points out that petrol sniffing is prevalent in some of the most ‘tradition-oriented’ communities on Aboriginal-owned land and often absent in communities with a long association with the pastoral industry.

Aboriginal leader Noel Pearson has mounted an even stronger attack on what he decries as ‘symptom theory’—that is, the view that Indigenous substance misuse can be explained as a symptom of colonisation, dispossession and contemporary socio-economic disadvantage. Whatever its origins, he argues, substance misuse today is no longer simply a set of harmful behaviours engaged in by some members of otherwise functional communities; rather, the norms, values and practices that legitimise and sustain substance misuse have insinuated themselves into the social and cultural systems of the communities themselves. Substance misuse has become a self-perpetuating ‘social epidemic’, and the prime obstacle in the way of restoring wellbeing. ‘Symptom theory’, in Pearson’s view, diverts attention away from the fundamental causal significance of substance misuse (Pearson, 2001, 2002, 2004).

### 3.4 Summary

- Inhalant use has been correlated with a number of indicators of individual psychosocial dysfunction, including depression, anxiety and stress. It has also been associated with poor schooling outcomes, anti-social behaviour, co-occurring and future drug use, a family background of problematic drug use, family conflict, a history of physical or sexual abuse, homelessness and involvement with the welfare and criminal justice systems.
- The causal pathways leading to VSM, however, are not well researched. For example, although VSM is associated with particular ethnic groups, it is not clear from available research how much of this association should be attributed to socio-economic disadvantage rather than ethnicity *per se*.
- Studies addressing the reasons why people use inhalants have drawn attention to several factors, including a desire to block hunger pains, dull physical and emotional pain, assert opposition to familial and institutional authority, and establish a non-conformist identity. One important reason not to be overlooked is that inhalant users engage in VSM because they find it exciting and pleasurable.
- A few studies have explored people's reasons for ceasing inhalant use. Reasons have been found to include negative sniffing experiences and health-related scares and also, especially in Indigenous communities, changes in life circumstances such as getting married or starting a job.
- Whereas most general explanations for VSM focus on individual characteristics of sniffers, attempts to explain VSM in Australian Indigenous communities often emphasise historical and social factors, such as colonisation and intra-community tensions. These frameworks, however, have recently come under criticism, notably from Aboriginal leader Noel Pearson who argues that substance misuse (including VSM) has become so pervasive in some Aboriginal communities that it is no longer helpful to see it as a symptom of historical and social injustices, but rather as a 'social epidemic' and root cause, in its own right, of other social, psychological and economic harms.

## 4 Problems associated with VSM

In identifying problems associated with a particular form of substance misuse, it is useful to distinguish between problems experienced by the users themselves and problems experienced by their families, the local community and the wider society of which they are part. These problems, as reported in the literature, are discussed in the following section. Table 4.1 provides a summary of reported problems. The table should be read with two qualifications in mind. Firstly, the problems identified are not universal; that is, they are not reported as being experienced by *all* sniffers, all families of sniffers, or all communities. Secondly, no implications of causality should be read into the table. The problems identified have been *associated with* VSM; as argued above, they are not necessarily directly attributed to it. For example, it is not at all clear from the literature whether the alienation from families widely associated with sniffing is purely a result of sniffing, or whether it might not in some cases have been a factor leading to sniffing.

Table 4.1: Key problems associated with VSM

Those experiencing	Problems
Those who misuse volatile substances	<ul style="list-style-type: none"> <li>• Intoxication; auditory, visual and sensory hallucination; irrationality; grandiosity; aggression; disinhibition; confusion; incoordination; headaches; poor memory; slurred speech; vomiting; headache; fits</li> <li>• dependence</li> <li>• burns, pneumonia, vulnerability to accidental trauma, increased incidence of STDs</li> <li>• (Chronic sniffers): brain injury including cognitive impairment, impaired vision, hearing or movement; dementia; and damage to heart, lungs, liver and kidneys. Diverse medical consequences are produced by the variety of chemicals found in VSM products</li> <li>• possible effects on unborn children caused by sniffing during pregnancy</li> <li>• poor school attendance and performance</li> <li>• loss of opportunity to learn cultural knowledge</li> <li>• alienation from family support</li> <li>• social stigma and ostracism from non-sniffing peers, kin, other families</li> <li>• increased likelihood of involvement with the criminal justice system, homelessness and future problematic drug use</li> <li>• death</li> </ul>

Families of volatile substance misusers	<ul style="list-style-type: none"> <li>• Loss of control over sniffers, and associated shame</li> <li>• worry, grief and hardship due to caring for long-term disabled</li> <li>• fear of violence if they intervene to stop sniffing</li> </ul>
Local community	<ul style="list-style-type: none"> <li>• Intensification of inter-familial fighting through blaming</li> <li>• damage to property and other vandalism</li> <li>• flouting of Indigenous and non-Indigenous authority and associated social disruption</li> <li>• adverse effects on morale</li> <li>• loss, temporarily or permanently, of a proportion of community young people</li> </ul>
Wider society	<ul style="list-style-type: none"> <li>• Demands on hospital-based and other health resources, including aerial medical evacuations</li> <li>• long-term care health care for those disabled through VSM</li> <li>• demands on criminal justice system, arising out of sniffing-related crime</li> </ul>

#### 4.1 Problems experienced by volatile substance misusers

The effects of exposure to any of the chemicals contained in volatile substances depend not only on chemical composition but also on other factors including the method of administration, air concentration of the substance, and physical activity by the person at the time of exposure (Ridgeway, Nixon, & Leach, 2003; White & Proctor, 1997). Inhalant products have been classified as solvents, gases, aerosols and nitrites, as outlined in the table below.

*Table 4.2: Chemicals in commonly used inhalants*

Group	Substances	Some chemical components
Volatile solvents	nail polish remover	acetate, ethyl acetate
	paint stripper	toluene, acetone
	correction fluid and thinner	trichloroethylene
	dry-cleaning degreaser	tetrachloroethylene, xylene
	petrol	benzene compound, toluene, aliphatic hydrocarbons
	modelling glue	toluene, ethyl acetate
	'Kwikgrip' (superglue)	benzene, n-hexane, xylene
	rubber cement	

Aerosols	spray paint	butane, toluene
	hair, deodorant and cooking oil sprays	butane, propane toluene, acetate
Gases	gas and lighter fluid	butane, isopropane
	fire extinguisher	bromochlorodifluoromethane
	whipped cream bulbs	nitrous oxide
Nitrites	video head cleaner and room deodorisers	(iso)amyl nitrate (iso)butyl nitrate and isopropyl nitrate

Adapted from: Department of Human Services (2003, 1)

#### 4.1.1 Immediate effects

Hydrocarbons present in volatile substances are easily absorbed into fatty tissues in the brain where they act as depressants (Dinwiddie, 1994; Evans & Balster, 1991). Intoxication is rapid and short-acting. Various stages of inhalant intoxication are reported: lower doses producing euphoria and then drowsiness or stimulation and disinhibition, and higher doses generating hallucination and leading in some circumstances to loss of consciousness and death. The initial phase of VSM has been compared with the intensity of injecting drug use (Dinwiddie, 1994). Other immediate effects include muscular incoordination, headache, tinnitus, palpitations, abdominal pain, nausea or vomiting, flushing, coughing or hyper-salivation. Intoxicated sniffers have suffered a range of traumatic injuries and burns through accidents where petrol or other products ignite.

Intensive use of inhalants (even during only one session) may result in irregular heart rhythms and death within minutes, a syndrome known as 'sudden sniffing death'. This syndrome is particularly linked with inhalation of butane and propane fuels. Other causes of VSM-associated death include blocking of the oxygen supply, seizures, trauma, accidents, burns and suicide (National Institute on Drug Abuse, 2005; Steffee, Davis, & Nicol, 1996). Currie et al. (1994) suggest, however, that sudden death is less common as a result of petrol sniffing than from other inhalant misuse. Of 70 encephalopathic petrol sniffers evacuated to Royal Darwin Hospital, the subsequent seven deaths reported by Currie et al. were all related to septic complications, most commonly aspiration pneumonia. The risks associated with inhaling fuel gases signal potential problems when young people transfer to other forms of VSM.

#### 4.1.2 Longer-term effects

The central nervous system (particularly the brain) is vulnerable to damage from VSM. Toluene and other solvents appear significantly responsible for neurological damage in long-term users. Chronic solvent exposure has been related to a range of changes to cognitive capacities including attention, problem solving, visuo-spatial skills and short-term memory. These problems range in

severity ‘from mild impairment to severe dementia’ (National Institute on Drug Abuse, 2005). Other deficits attributed to inhalant use include problems relating to movement, spasticity, and loss of hearing, feeling or sight. Inhalant-associated brain injury appears to be cumulative. In one study, white matter changes were apparent in those who had used toluene for more than four years (Aydin et al., 2002).

The extent of VSM-related brain damage is, however, contested. One study detected marked differences in cognitive skills among those reporting VSM; however, these differences became statistically insignificant when measures for socio-disadvantage were factored in (Chadwick et al., 1990; see also Jansen, Richter, & Griesel, 1992).

As well as the brain, chronic use of particular inhalants is also believed to damage the kidneys, liver, heart and lungs (National Institute on Drug Abuse, 2005). Long-term use is linked with muscle weakness, epilepsy, reduced bone density and possibly leukaemia and other cancers. Solvent exposure appears related to early onset and increased severity of Parkinson’s disease and other forms of neurological disorder (Hageman et al., 1999; Pezzoli et al., 2000; Ramon et al., 2003).

The World Health Organization (WHO) ISD-10 now recognises ‘mental and behavioural disorders due to use of volatile solvents’ characterised by the same physiological and behavioural indicators as other drug dependency (World Health Organization, 2003). Studies have detected tolerance and a ‘withdrawal syndrome’ of two to five days in toluene and butane users (Bowen & Balster, 2006; Dinwiddie, 1994; Evans & Balster, 1991; Páez-Martínez, López-Rubalcava, & Cruz, 2003; Wiley, Bale, & Balster, 2003). This dependence is generally considered mild in comparison with that produced by heroin or tobacco (Wiley, Bale, & Balster, 2003) and is experienced as craving, irritability, psycho-motor retardation, dry mouth, and insomnia (Shah et al., 1999).

As the neurological damage caused by petrol sniffing is cumulative, chronic sniffers are more likely to sustain permanent brain injury or to die as a result of this activity than infrequent sniffers. Maruff et al. (1998) found that blood lead levels and length of time sniffing correlated with the degree of neurological and cognitive impairment experienced by sniffers. Early studies depicted VSM-associated brain injury as permanent (Byrne, Kirby, Zibin, & Ensminger, 1991; White & Proctor, 1997). More recently, clinicians have suggested that significant recovery from the effects of either petrol sniffing or other solvent use is possible if the person becomes abstinent prior to the occurrence of cerebellar atrophy (Cairney, Maruff, Burns, Currie, & Currie, 2004a; Cairney, Maruff, Burns, Currie, & Currie, 2004b, 2005; Rosenberg, 1997; see also Schiffer et al., 2006).

Maternal inhalant use has been linked with spontaneous abortion, congenital malformation, increased risk of developmental delay and behavioural problems in later life for children (Bowen & Hannigan, 2006; Bukowski, 2001; Burry, Guizzetti, Oberdoerster, & Costa, 2003; Jones & Balster, 1998). A study of infants born to petrol sniffing mothers found increased prevalence of

still birth, low birth weight, low Apgar scores (assessments of newborn health), and likelihood of being admitted to a neo-natal ward or placed in protective care (Dodd, 2001), although the author cautions that it is difficult to isolate which of these are a result of the pharmacological effects of VSM and which are due to petrol sniffing-associated lifestyle factors. Sniffing presents additional complications to antenatal care, including maternal malnourishment, erratic behaviour including frequently missing antenatal appointments, often inadequate social support, and an increased likelihood of contracting sexually transmitted diseases (Dodd, 2001; Gell, 1995).

#### 4.1.3 *Mortality and morbidity*

There is currently no systematic collection of inhalant-associated mortality or morbidity at either a national or state/territory level in Australia. The NIAT has recommended that data on morbidity and mortality be collated annually (National Inhalant Abuse Taskforce, 2006). Sniffers commonly present to clinics and hospitals with illness such as pneumonia or injury such as burns which have volatile substance inhalation as an underlying cause and are therefore not recorded as VSM-associated.

Brady (1992, pp. 55–7), on the basis of coronial and other evidence, lists 35 Aboriginal deaths as having occurred in Australia between 1980 and 1988 as a result of petrol sniffing, all but one of them involving males. Victims were aged between 12 and 30, with a mean age of nineteen. These figures, Brady points out, almost certainly underestimate the true extent of petrol sniffing mortality. She estimates that between 1981 and 1991, 63 Aboriginal people died from petrol sniffing-related causes in Australia (1995). Of these, only three were female.

Between January 1984 and December 1991, 25 patients were admitted to Perth teaching hospitals for petrol-related illnesses. Eight of the 20 chronic sniffers subsequently died; all had altered mental state and most had generalised toxic-clonic seizures (Goodheart & Dunne, 1994)

A 2005 Coronial Inquest was advised that 50–60 Indigenous people in Central Australia had died in the past eight years as a result of petrol sniffing (Cavanagh, 2005). Thirty-seven petrol sniffing-associated deaths were recorded between 1998–2003 in the Central Australian region (Shaw et al., 2004).

Information about urban or rural VSM-associated deaths and illness is, if anything, even more scant. The best data was compiled from coronial files for the Victorian *Inquiry into the Inhalation of Volatile Substances* (Parliament of Victoria Drugs and Crime Prevention Committee, 2002). In Victoria from 1991–2000, 38 deaths were linked with inhalant products, with an average age at death of 16 years (Parliament of Victoria Drugs and Crime Prevention Committee, 2002).

No national data is available estimating VSM morbidity; however, some state-based data is collected. For instance, from 2002–2003, inhalant use was the main presenting drug problem in 1% of Victorian specialist drug treatment courses (comprising 474). This increased to 1.5% (726 courses) in 2003–2004 (Stoové et al., 2006). Inhalant-related ambulance attendances jumped by 22% between equivalent periods in 2002 and 2003 (to 197) (Matthews et al., 2005). Thirty-five

inhalant-related hospitalisations during 2003–2004 resulted in 214 bed days; more than in any preceding year (Stoové et al., 2006). Western Australia recorded an annual average of 32 VSM-related hospital admissions between 1994 and 2000 (National Inhalant Abuse Taskforce, 2006).

#### 4.1.4 *Social effects*

The consequences of petrol sniffing discussed above all involve the health of sniffers. However, as Table 4.1 indicates, regular VSM also entails a number of social consequences.

In urban communities VSM is a highly stigmatising activity that, over time, damages family relationships, reduces users' chances of school completion and employability, and exacerbates the social isolation of those involved (MacLean, in press). Freeman (1986, p. 91), discussing petrol sniffing in a Pitjantjatjara community, states that many chronic sniffers were 'lost to the normal family support mechanisms', living divorced from their families in gangs which perpetrated much of the violence and breaking and entering on the community. Chronic sniffers suffer additional social problems such as social dislocation and an increased involvement with the criminal justice system. In Maningrida one study found that 80% of sniffers and ex-sniffers had criminal justice system involvement (Burns, Currie et al., 1995).

There is little written about Indigenous (or indeed non-Indigenous) perceptions of the spiritual effects of sniffing. Some Aboriginal people believe that petrol sniffing, like alcohol misuse, pushes out and replaces the spirit, and can eventually kill it (Brady, 1995; painting by Minutjukur in Healthy Aboriginal Life Team, 1991)

## 4.2 **Problems experienced by families**

Much of the sadness and worry about VSM falls on the families of those involved. The following extract from a story told by an elderly Pitjantjatjara woman to the Ngaanyatjarra Pitjantjatjara Yankunytjatjara (NPY) Disability Project illustrates the sense of helplessness felt by many carers:

I have three sons who sniff petrol and I have to care for them on my pension. I have to lose sleep to look after them. They make me so sad the way they throw rocks around and axes. I feel so sorry for them now they've become really sick.

He was my sister's son but she passed away and he's mine now. I try to look after him and I try to take good care of him, but he keeps throwing stones, even though I ask him not to. I give him good food, which I cook for him from my pension money. It's not much but I'm doing my best. I've been on my own for many years now. My husband passed away. I have to spend a lot of time looking after my son, even though he is a grown man now. He's been sniffing petrol for a long time now, since his father passed away. I can't do anything about it now. I'm a widow now and a woman alone, looking after a sick son. He is nyumpu (sick spirit) and weak and he is so sad and depressed. Though I try to feed him food he can't stop sniffing, poor thing.

His older sister she tries to look after him too. She is a good sister to him. But he is getting weak now from years of sniffing. Too many years have passed by now. He's very thin. I keep asking for extra financial help but I haven't got any.

Petrol is killing him off and he is weakening. He's starting to refuse the food I make for him. He's too disturbed. He won't do anything for me and his older sister now. He can't understand anything any more. He can't talk, he doesn't ask about money, nothing. He can only see out of one eye and he is getting blind. I'm trying to get him to sleep more. His brain is beginning to shrivel and he's lost his mind.

He is very sick. Years ago when he was a child and living with his mother and father, grandmother and grandfather, he was a good kid and he did what he was told and he listened to us. My son listened to us properly. But as he grew up he started doing what he wanted to do and he demanded to have his own way. He'd say 'Ngayuku kututu nyangatja!' 'This is my spirit not yours!' He used to say that to us (quoted in Mosey, 1997, pp. 23–4)

Impacts on the families of long-term urban and rural users of volatile substances may be slightly different to those encountered in remote settings. A far greater range of welfare and drug treatment agencies is available in urban settings. Young people who regularly use inhalants in urban areas often become homeless and disengage from their families, rather than remaining in close proximity to them. Nonetheless, one urban mother's despair at her daughter's VSM echoes the sense of despair evident also in the account above made by an Indigenous mother living in a remote community:

My 16 year old daughter is slowly dying, her memory is fading, her sight, hearing, lungs, kidney, bone marrow and liver are being damaged. Her blood oxygen is being depleted and this can directly induce heart failure. Her personality has changed.

Her system is slowly being poisoned.

She buys a can of paint legally from a store, sprays it into a plastic bag and breathes the fumes deeply into her lungs.

She doesn't notice the paint stains on her mouth and hands. I do.

My beautiful daughter is a 'chromer'.

The girl I gave birth to 16 years ago is killing herself.

And I cannot stop her, help is too far away, hands are tied, this practice is not illegal ... (Parliament of Victoria Drugs and Crime Prevention Committee, 2002, p. 1)

### 4.3 Problems experienced by local communities

Even a small number of regular inhalant users can cause community-wide damage out of all proportion to their numbers. South Australian coroner Chivell concluded that the impact of petrol sniffing in the Anangu Pitjantjatjara Yankunytjatjara (APY) Lands in South Australia threatened ‘the very substance of the Anangu communities’ (South Australia Coroner’s Court, 2002).

VSM creates law and order problems in both urban and remote communities. Volatile substance users (or brain damaged ex-users) have committed crimes of violence such as murder and rape, both in remote Indigenous communities and urban settings (Jackson, 2002; Stojanovski, 1999). Property damage is also commonly associated with VSM. Intoxication-related crimes, friction between families, youth suicides and other damage to physical, mental and emotional health all debilitate communities. Energy which could be used to address long-term cohesion and health of the community is exhausted and depleted by the ongoing effects of petrol sniffing on community morale (Senate Community Affairs Reference Committee, 2006). The distressing nature of petrol sniffing and the media treatment that it attracts mean that its spectre often overshadows efforts to focus attention on positive achievements in preventing or addressing it, or deflects energy from other less sensationalist but nevertheless critical Indigenous health issues, such as diabetes.

Similarly, young people with experience of chrome paint inhalation in Melbourne argued that this intoxication released anger, often leading to violence. As one young user reported, ‘it makes you wanna hurt people and make them feel embarrassed’ (quoted in MacLean, 2006).

### 4.4 Problems experienced by the wider society

VSM also has an impact on institutions in the wider society, especially the juvenile justice and health systems. Access Economics (2006) estimated the total cost of petrol sniffing in Central Australia in 2005 as \$78.9 million, of which:

- \$38.1 million was the net cost of disease burden;
- \$16.2 million was the cost to the crime and justice system;
- \$8.3 million was productivity loss; and
- costs of health, long-term care and rehabilitation impacts were estimated at \$4.1 million, \$4.2 million and \$3.7 million respectively.

Similar estimates for other parts of Australia have not been made.

#### 4.5 Summary

- VSM poses not just one problem but a bundle of problems; for users, families and communities.
- For individual sniffers, it poses significant threats to health, both short- and long-term, which require preventative and rehabilitative interventions.
- For the families and carers of sniffers, VSM is often extremely distressing and often adds to difficulties and hardships already being experienced by those families. Interventions should at best enhance, and at the least not undermine, these capacities of family and kinship systems.
- For Aboriginal communities, petrol sniffing by young people poses challenges both to traditional authority and cultural patterns and to more ‘Westernised’ authority systems. An important goal of at least some interventions must be that of promoting the community’s capacity to control petrol sniffing.
- VSM generates demands within the wider society, particularly on the juvenile justice and health systems.
- VSM cuts across the work of a range of Commonwealth and state/territory departments, as well as that of many local community councils and non-government organisations. Cooperation and consistent action across all these agencies and with affected families is therefore essential.



# PART TWO: INTERVENTIONS



## 5 Supply reduction

Unlike many other drugs, licit and illicit, volatile substances are not marketed and used primarily as intoxicants. Compared with frameworks in place for regulating supply of other legal drugs such as alcohol or tobacco, there is currently very little regulation of inhalant product availability in urban Australia. Where measures to modify either the availability or content of products subject to inhalant use have been taken, subsequent effects on either prevalence or harm have rarely been evaluated.

One objection frequently raised in response to efforts at reducing supply of volatile substances (as other drugs) is that users will simply substitute other sources of intoxication (Ives, 1994; Parliament of Victoria Drugs and Crime Prevention Committee, 2002). There is some evidence to support this concern: in the UK, the introduction of legislation and education targeting sales of glue products was followed by an increase in deaths from more dangerous butane and aerosol misuse (Esmail, Anderson, Ramsey, Taylor, & Pottier, 1992; Taylor, Field-Smith, Norman, Ramsey, & Anderson, 2000). Similarly, early anecdotal reports from some Cape York communities in north Queensland, where sniffable petrol is no longer available due to substitution with Opal non-sniffable fuel, suggest that paint sniffing has been observed (Robertson & Martin 2006 in Shaw, Watson, Wakerman, & Dewhurst, 2006).

In this section we review evidence relating to the effects of three approaches to VSM supply reduction: product modification, locking up supplies of petrol, and statutory and voluntary measures restricting sales of inhalants.

### 5.1 Product modification

Three ways of modifying volatile substances in order to deter VSM have been identified: replacement of harmful or psychoactive components, addition of deterrent chemicals, and package modification (Advisory Council on the Misuse of Drugs, 1995; World Health Organization, 1999). In discussing each of these in turn, we draw on an article published in 2006, where they are considered in more detail (MacLean & d'Abbs, 2006).

#### 5.1.1 *Replacement of harmful or psychoactive components*

This kind of intervention involves reformulating products either to reduce their psychoactive effect (and thus make misuse less attractive) or to replace particularly harmful chemical components with more benign alternatives. The approach has been described as the most effective form of volatile substance product modification (MacLean & d'Abbs, 2006; World Health Organization, 1999). The best known examples in Australia are the Comgas scheme, which involved substituting aviation fuel for unleaded petrol in Central Australia in the 1990s, and a subsequent scheme in which a new non-sniffable fuel known as Opal was substituted for unleaded petrol in remote communities (Shaw et al., 2004). Because of their importance, both of these schemes are described separately below.

In compliance with the Montreal Convention (an international environmental agreement), all products in Australia previously containing chlorofluorocarbons (CFCs) or trichlorethane (the intoxicating component of correction fluids) have now been reformulated. Some products are now produced without propellant chemicals, in pump packs (Flanagan & Ives, 1994; World Health Organization, 1999); however, not all products can be reformulated in this way. VSM products which have been modified to remove their intoxicating potential have subsequently been associated with reduced morbidity. Since 1995 there have been no UK deaths associated with correction fluid or pain relief sprays and only one associated with use of an old (unmodified) fire extinguisher (Field-Smith, Butland, Ramsey, & Anderson, 2006).

One Australian company, Barloworld, has reformulated its ‘White Knight’ spray-paint range to make these products less attractive to chromers (Drugs and Crime Prevention Committee, 2002). Toluene has been removed from paints in this range. It is unfortunate that no research has been undertaken to explore whether ‘White Knight’ paints have subsequently become less attractive as intoxicants. In Alice Springs promising information is emerging about the effectiveness of restricting paint sales to low-toxicity products. After meeting with CAYLUS staff, local retailers voluntarily agreed only to sell low-toxicity forms of spray-paint. Sales of paint have since dropped dramatically with some slight increase observed in glue sniffing (personal communication, Tristan Ray).

#### *5.1.2 Addition of deterrent chemicals*

Adding deterrent chemicals to VSM products is viable as an option only where the modification does not adversely affect legitimate users, a factor which has consistently confounded attempts of this nature (Akerman, 1982; Kerner, 1988; Sharp, Beauvais, & Spense, 1992).

In 1968 Testor Corporation, an American company, added oil of mustard (a deterrent chemical) to model aeroplane glues, then an inhalant popular with teenagers. This resulted in dramatic reductions not only in glue misuse but also in sales of the product (Bauerlein, 1993; Jeffrey, 1995). Oil of mustard has also been added to correction fluids. The Parliament of Victoria Drugs and Crime Prevention Committee (2002) reported claims by one agency that the addition of mustard oil to Liquid Paper in Australia in the 1980s reduced a fad of correction fluid sniffing. Nonetheless, one of the few published articles mentioning this intervention documents one young man’s death in the US from the direct effects of inhaling Liquid Paper despite the presence of a mustard oil additive (Troutman, 1988).

Concerns have been raised in relation to the irritant effects of oil of mustard including blistering, slow healing ulcers, asthma, watery eyes, sneezing and contact dermatitis (Akerman, 1982). Some chronic inhalant misusers, having already severely damaged their nasal tissues, might be unable to detect deterrents or develop a tolerance to them.

In Australia, the CSIRO has conducted research into the technological issues relating to adding deterrents to petrol, spray paints and butane gas. Their study concludes that the modification of petrol is not feasible, as adding the substance at a level with potential to deter misuse would

breach legislation limiting sulphur content of petrol (National Inhalant Abuse Taskforce, 2006). Technological problems also undermine the potential to add deterrents to fuel gases. A dedicated production line would be required if mustard oils are to be added to butane gas to guard against release of sulphur into the atmosphere. The smell may also deter legitimate users. Adding deterrents to spray paint does not impair product performance but again might make products distasteful to legitimate users (National Inhalant Abuse Taskforce, 2006).

A further strategy involving addition of deterrent substances was tried in some remote Australian Indigenous communities during the 1980s. The Senate Select Committee on Volatile Substance Fumes reviewed four cases in which communities had added ethyl mercaptan to petrol (Commonwealth of Australia Senate Community Affairs References Committee, 2006, pp. 204–6). In none of the four communities did the addition prove successful. In one instance, residents objected to the offensive smell of the additive; in another, parents became distressed at the sight of their children vomiting (which, as the Senate Committee suggests, may simply point to the need to educate parents prior to introducing the additive). In another there was no genuine community support for the intervention, and in yet another, the resident medical officer concluded that the effects of the additive were no less harmful than those of petrol sniffing, particularly in the case of chronic sniffers who continued to inhale both petrol and the additive.

As an additive, ethyl mercaptan is also of limited use in VSM prevention because it is more volatile than petrol. Sniffers have discovered that it can be removed from petrol by ‘weathering’; that is, leaving the petrol out in the open, which causes the ethyl mercaptan to evaporate preferentially (Commonwealth of Australia Senate Community Affairs References Committee, 2006).

Experimental, social and chronic inhalant users may respond differently to this form of product modification. A sample of 33 users and ex-users of volatile substances at four research sites in Victoria and Queensland named cannabis and other inhalants (followed by alcohol, amphetamines and other drugs) as substances most likely to be substituted if their inhalant of choice became modified through addition of deterrent chemicals (MacLean et al., 2005, p. 39). Research participants argued that supply reduction strategies were most likely to affect the behaviour of experimental or new users, and least likely to influence chronic or long-term users who would find ways to access drugs or substitute alternative intoxicants.

### *5.1.3 Package modification*

The third method of volatile substance modification—modifying packaging so as to deter misuse while not interfering with legitimate use—has little support in the literature. Modification to aerosol can nozzles was trialled in the UK. Determined inhalers of these products managed to puncture cans or remove nozzles to access the contents, a practice that may in itself be hazardous (Parliament of Victoria Drugs and Crime Prevention Committee, 2002).

## 5.2 Introducing non-sniffable substitutes for petrol: aviation fuel and Opal

As mentioned above, one successful instance of supply reduction through product modification has been the use, firstly, of aviation fuel and, subsequently, of a low-hydrocarbon fuel known as Opal in Australian Aboriginal communities.

In the early 1990s several remote Aboriginal communities in the Top End of the Northern Territory began to use aviation fuel (known as Avgas) as a fuel substitute for petrol. Avgas had a relatively high lead content but was not volatile enough to be sniffed for intoxication. It could, however, be used safely in motor vehicles and other petrol-using engines, making it a potential alternative to unleaded petrol in communities beset by petrol sniffing.

Burns found that the use of Avgas as an aversion strategy was critical at Maningrida in eradicating petrol sniffing; however, community resolve and support were also key elements in this success. Four months after it was introduced at Maningrida in 1993, along with employment and skills training programs, petrol sniffing ceased (Burns, Currie et al., 1995). Although some sniffers tried Avgas, they did not persist (Burns 1995b, 1996). Following the Maningrida experience, Petrol Link-up (discussed in section 6.1.4) recommended that Central Australian communities consider using Avgas instead of petrol, at the same time cautioning against Avgas on its own being seen as the answer to petrol sniffing (Shaw et al. 1994, p.16).

In the next few months, more than 20 Anangu Pitjantjatjara communities switched to Avgas as part of a regional strategy. *Moving On* (Roper & Shaw, 1996) assesses the impact of its introduction on Anangu Pitjantjatjara Yankunytjatjara (APY) Land communities. The report found a marked decline in petrol sniffing between 1984 and 1995, with a particularly steep decline occurring following introduction of Avgas in 1994. In communities where sniffing continued, it had become episodic, as availability was irregular. Those who did continue sniffing were older, chronic sniffers; few young people commenced sniffing. Over the same period, petrol sniffing-related arrests dropped dramatically. Two years later, sniffing was reported to have increased, but not to pre-Avgas levels (Nganampa Health Council, 1996, 1997).

In 1998, the Australian Government raised the level of excise on Avgas when used for non-aviation purposes, making the cost of Avgas to communities considerably higher than unleaded fuel. In response, several communities successfully petitioned the government for assistance, leading to the introduction of a subsidy scheme known as the Comgas Scheme, under which the Commonwealth subsidised each litre of fuel purchased by participating communities to enable them to maintain price parity with unleaded petrol (Shaw et al., 2004; Youth Solvent Addiction Committee, 2003). By 2004 more than 30 communities were participating in the scheme.

An evaluation of the Comgas Scheme published in that year concluded that, while the strength of the effect varied, communities which had maintained the use of Avgas over a sustained period had eliminated regular petrol sniffing and associated harms. The degree of success depended on the consistency of application and the proximity of alternative sources of vehicle fuels. The scheme was also found to be popular in those communities where it had been maintained. The evaluators recommended not merely its continuation but an expansion (Shaw et al., 2004).

By now, however, the high lead content of Avgas meant that for environmental reasons it was no longer considered an acceptable fuel. In mid-2004 BP Australia, producer of Avgas, announced its intention to change the formula for Avgas fuel by reducing the lead content and increasing the level of aromatic hydrocarbons. The new fuel would be environmentally friendly—but no longer unsniffable. At around the same time, BP also began work on a potential replacement for Avgas in Aboriginal communities by producing a new vehicle fuel containing no lead and very low levels of the aromatic chemicals that give other forms of petrol their intoxicating properties.

The new fuel, known as Opal, was launched in February 2005 (Australian Government Department of Health and Ageing, 2007). Like Avgas, Opal was subject to a Commonwealth subsidy. However, whereas the original subsidy had been paid to distributors, under the new version a subsidy of around 33 cents per litre was paid to BP Australia in recognition of the higher production costs of Opal fuel.

Initially, the government's intention was to make Opal available to all 42 communities registered under the Comgas scheme or with 'registration pending' status. The Australian Government allocated \$9.6 million in the 2005–2006 budget to cover the Opal subsidy over the next four years (Minister for Health and Ageing (Tony Abbott MP) & Minister for Immigration and Multicultural and Indigenous Affairs (Senator Amanda Vanstone), 2005). Almost from the beginnings of the Opal rollout, however, pressures for its expansion emerged, probably the most influential being a report prepared by Access Economics and released in March 2006 (Access Economics Pty Ltd, 2006). Entitled *Opal Cost Benefit Analysis*, the report was commissioned by the Opal Alliance, a group comprising the GPT Group, owners of the Ayers Rock Resort, the Ngaanyatjarra Pitjantjatjara Yankunytjatjara (NPY) Women's Council and the Central Australian Youth Link-Up Service (CAYLUS). The report concluded that petrol sniffing in Central Australia cost an estimated \$79 million a year, and that governments would save \$27 million a year by rolling out Opal universally in Central Australia. The case for a regional rollout of Opal gained further support in June 2006 when the Senate Community Affairs References Committee tabled the results of an inquiry into petrol sniffing (Commonwealth of Australia Senate Community Affairs References Committee, 2006).

By this time, the Commonwealth had already expanded its commitment to Opal by acknowledging the need for a regional rather than a community-by-community approach. In September 2005 it successfully enlisted support from the state/territory governments of SA, WA and NT for an 'Eight Point Plan' to combat petrol sniffing, under which the respective governments committed themselves to:

- adopting consistent legislation with strong penalties for offences relating to sale or supply of volatile substances for sniffing;
- appropriate levels of policing;
- further rollout of Opal fuel;
- developing diversionary activities for young people;

- providing treatment and respite facilities;
- developing communication and education strategies;
- strengthening and supporting communities; and
- evaluating interventions (Minister for Families Community Services and Indigenous Affairs (Mal Brough MP) & Minister for Health and Ageing (Tony Abbott MP), 2006).

At the same time, the Commonwealth allocated an additional \$9.5 million to addressing petrol sniffing in Central Desert communities, an area of approximately 128,000 sq. km that included Yulara Resort and other roadhouses on the Lassetter and Stuart Highways (Minister for Health and Ageing (Tony Abbott MP) & Minister for Immigration and Multicultural and Indigenous Affairs (Senator Amanda Vanstone), 2005). In October 2005 the government officially renamed the Comgas scheme the Petrol Sniffing Prevention Program (PSPP) (Australian Government Department of Health and Ageing, 2007).

In July 2006 the Australian Government committed \$12 million to supply unleaded Opal fuel in all petrol stations in Alice Springs. In February 2007, the then Minister for Health and Ageing, Tony Abbott MP and the then Minister for Families, Community Services and Indigenous Affairs, Mal Brough MP, jointly announced an expansion of the Central Desert Region to incorporate Alice Springs and extending north to just above Ti Tree and west of the Stuart Highway, as well as a new region in the East Kimberley. The regions covered by these decisions are shown in Figure 3.

*Figure 3: Regions involved in Opal rollout*



As of September 2007, there were 72 communities, 3 pastoral properties and 29 service stations/roadhouses receiving Opal fuel under the PSPP program. In December 2007 the Department of Health and Ageing commissioned an independent evaluation of the impact of the Opal rollout in PSPP communities. The evaluation is expected to be completed by mid-2008.

In the months following the introduction of Opal, a number of observers claimed to have witnessed (or, more frequently, heard of) adverse consequences, including black marketeering in unleaded petrol, trading petrol for sex, and mixing Opal fuel with various additives in attempts to get high from it (Bockmann, 2006; Chapman, 2006; Hughes, 2005). More recent evidence suggests that the overall impact has been beneficial. A 2006 survey of petrol sniffing prevalence among communities in the APY Lands served by Nganampa Health Service revealed a 60% drop on 2005 levels, which in turn represented a 20% reduction on 2004.

In May 2007 Nganampa Health Service repeated its prevalence survey and found evidence of a further decline in sniffing—to just 38 individuals, or 1.3% of the total population of the NPY Lands (Nganampa Health Council, 2007). In all but two communities, no sniffing was reported between October 2006 and May 2007. The report states:

The lack of availability of sniffable fuels is likely to have contributed significantly to the marked and to date sustained reduction in petrol sniffing on the APY Lands. The introduction of Opal fuel has largely (though not completely) eliminated supply. Active policing is required to eradicate illegal dealing in sniffable fuels. Although not specifically investigated, informal comment from informants suggests that whilst some other volatile substance abuse had occurred (e.g. sprays, paint or glues), this has not been widespread (Nganampa Health Council, 2007, p. 4).

Wilson (2007) cites several local observers as reporting that the petrol sniffing crisis in Central Australia appeared to be over; that while some sniffing was still taking place in Alice Springs itself, numbers of users in remote communities had dropped sharply and, on the NT side of the border, the practice had virtually disappeared. According to Wilson, there was widespread agreement that the introduction of Opal had played a major role in the change, but in at least one community local leaders insisted that community concern had also been important. Wilson also urged caution in interpreting the short-term findings, noting that Comgas had also brought about a short-term sharp reduction in sniffing, followed by relapses in some places. Some communities were reported to be expressing concern about an apparent increase in marijuana use, while some motorists in Alice Springs were also reluctant to use Opal in the mistaken belief that it would damage their engines. The decline in sniffing apparently brought about by Opal, Wilson concluded, should be used as a window of opportunity to address other causes, such as the lack of alternative activities.

### 5.3 Locking up petrol supplies

The 1985 Senate inquiry into VSM concluded that the strategy of restricting or preventing access to petrol, being the most obvious response to sniffing, had been tried in just about every place where sniffing had become a problem—with just about universal lack of success (Commonwealth of Australia Senate Select Committee on Volatile Substance Fumes, 1985). Even where petrol supplies are carefully controlled in remote communities, people have found ingenious ways to access sniffable fuel. A petrol sniffer in a remote NT community was known to simulate ‘vehicle breakdowns’ in order to plead with passing tourist traffic for petrol (Fietz, 2005). As the Senate Committee pointed out, regardless of the measures employed—and these included fitting locking petrol caps, surrounding pumps with weldmesh cages and using guard dogs—sniffers would cut fuel lines, break into the pumps or break open petrol tanks. Watson (1986) documents the failure of protective measures at one Top End community in the early 1980s. Despite the fact that the local council had installed a second cyclone fence around the petrol pumps in the main vehicle yard, and employed both a guard dog and, subsequently, a patrolman, an estimated 600 litres of fuel were stolen each month.

This does not, of course, mean that sniffable petrol should be left unsecured in any community where VSM might occur. However, as the basis for a VSM prevention strategy it is clearly inadequate.

### 5.4 Restricting sale of VSM products

Most inhalable substances are exempt from scheduling as drugs or poisons in Australia, with a result that their supply is not restricted in the same way that governments manage availability of other intoxicating substances (see National Inhalant Abuse Taskforce, 2005, p. 55 for a discussion of this matter). However, a number of jurisdictions have introduced statutory restrictions on supply of specified VSM products to persons under 18 years, while some community-based groups have successfully negotiated agreements with retailers under which the latter voluntarily reduce availability of such products, for example by agreeing to keep spray paints under a counter rather than on open shelves.

#### 5.4.1 *Legislative approaches to sales restriction*

The benefits of legislating to restrict sales of volatile products are unclear. Some commentators have argued that compulsory sales restrictions are hard to enforce, and alert young people to the potential misuse of products or simply encourage users to substitute other, potentially more harmful, inhalants (Ives, 1994; Parliament of Victoria Drugs and Crime Prevention Committee, 2002). As observed above, this was evident in the UK when introduction of legislation and education targeting sales of glue products was followed by an increase in deaths from butane and aerosol misuse (Esmail et al., 1992; Taylor et al., 2000). Also in the UK, regulations introduced in 1999 banned the sale of cigarette lighter refills to persons under 18 years. Deaths associated with lighter fuel VSM among under 18s fell in 2000, 2003 and 2004 but returned to earlier levels in the

intervening years of 2001 and 2002 (Field-Smith et al., 2006). Other governments considering the efficacy of VSM product sales restrictions will no doubt be watching these trends closely.

Some Australian states restrict sale of inhalant products. In South Australia it is illegal to sell spray paint cans to people under 18 years of age, and such products must also be stored in locked cabinets. It is also illegal to sell petrol to people under 16. New South Wales similarly prohibits spray-paint sales to minors. In both instances legislation was introduced to deter graffiti rather than chroming, but effects on either practice have not been evaluated (National Inhalant Abuse Taskforce, 2005). In 2007 South Australian legislation was introduced extending restrictions to the sale of wide-tip markers as well as paints, and requiring retailers to maintain a register of VSM product sales. Amendments to legislation in Queensland prohibited the sale of spray paints to under-18 year olds from September 2007 (Queensland, 2007).

In most Australian jurisdictions it is an offence to sell VSM-affected products where the vendor could reasonably be expected to know they are intended for this purpose. It is of course very difficult to prove that a retailer was aware of intended misuse when selling a product (National Inhalant Abuse Taskforce, 2005).

#### *5.4.2 Voluntary approaches to sales restriction*

Many local attempts to reduce VSM prevalence have entailed efforts to reduce supply through voluntary agreements with retailers. The limited evidence indicates that targeting retailers has been an effective strategy when introduced through a local community development process entailing retailer education (Helfgott & Rose, 1994; Mosey, 2004).

For instance, a campaign in Alice Springs involved a project officer visiting all retail outlets that stocked spray paints, asking vendors to keep affected products locked away and advising them of legislation making it an offence to knowingly sell products that will be used for VSM. This intervention reduced spray can sales in Alice Springs by over 600 cans a week and numbers of sniffers fell from an estimated 70 to 17 sniffers (Mosey 2004). Those who persisted were generally more long-term and intensive users. Interestingly the community experienced only a small amount of transfer from spray paint misuse to misuse of deodorants, glues and cannabis. This strategy is unlikely to be as effective in a larger urban context where people may continue to access VSM products at retail outlets outside the targeted area. Staff at one Alice Springs store now maintain a registry of paint sales which is shared with police and staff of Central Australian Youth Link-Up Service (CAYLUS) (Central Australian Youth Link-Up Service, 2006a).

Also in the NT, a retailer resource kit to guide the responsible sale of solvents has been developed in the NT by Amity Community Services (see Central Australian Youth Link-Up Service, 2006a, p. 47). Amity have conducted a responsible sale of solvents campaign in the NT town of Palmerston and offered diversionary activities for young people. An evaluation of the project found the reduction in harm, supply and demand of solvents was addressed and arguably the major factor in the success of the project has been in providing recreational alternatives and a safer environment for the community (Entwistle, Piper, Ford, & Burch, 2007).

Figure 4: Poster from retailer resource kit developed by Amity Community Services, NT



Some retailers appear to be anxious about possible legal consequences of refusing to sell products subject to VSM. One anti-VSM project in Western Australia took the approach of meeting with staff at a shop to ascertain how young people were accessing affected products. It emerged that retail staff were concerned that denying young Aboriginal people's requests to purchase spray paints would leave them vulnerable to charges under racial discrimination

legislation. Retailers were assured that if the store had a written policy regarding sale of VSM products to people believed likely to use these substances as intoxicants, had signs displayed to this effect, and treated Aboriginal and non-Aboriginal customers equally, then no legislation would be breached (Helfgott & Rose, 1994). Staff were provided with training and a list of verbal responses to assist them in refusing to sell volatile substance products.

A similar project was initiated by police in Werribee in Victoria during 2000 (see Drugs and Crime Prevention Committee, 2002, pp. 263–5). Local police officers visited traders, advising them how to recognise the symptoms of VSM, and asking them to place VSM products in places where they would be difficult to steal and not to sell these products to youth at risk. Although a clear drop in VSM in public places occurred in the area concerned, staff could not be confident that users had not simply moved elsewhere and concluded that future campaigns should have a broader reach. The Sunshine Chroming Awareness Project (see section 6.2.1) found writing to major chains rather than visiting local outlets to be the most effective means of reducing VSM product sale (Parliament of Victoria Drugs and Crime Prevention Committee, 2002, p. 391).

During recent years education kits have been distributed by state governments to retailers in Victoria, Queensland, the Northern Territory and Western Australia advising them to display such products securely and of their right to refuse sales of products they suspect may be misused (see, for example, State Government of Victoria, 2002). The effectiveness of these campaigns has not been evaluated. Nonetheless young people in one study conducted in 2005 reported that VSM products had become harder to access, thus curtailing but not stopping the practice. A 17 year old man advised researchers that paint could not be purchased in larger chains, but that it was still possible to acquire these substances from smaller outlets or automobile product outlets:

You sniff what you can get. It's harder to get now. You need an 18 year old to get it [paint]. They [shop assistants] know now and ask what you are doing. Car shops are easy to get the paint from (rural participant cited in MacLean et al., 2005, p. 44).

## 5.5 Summary

- Supply reduction measures have been part of many apparently successful anti-VSM strategies, although few such measures have been evaluated.
- Because many current inhalant users are poly-drug users, there is a risk that supply reduction may lead to other, possibly more harmful, drugs. This has occurred in some instances.
- Three broad approaches to VSM supply reduction can be distinguished: product modification; locking up supplies of petrol; and statutory and voluntary measures restricting sales of inhalants.

*Product modification*

- Three ways of modifying volatile substances in order to deter VSM have been identified: replacement of harmful or psychoactive components of inhalants; addition of deterrent chemicals; and package modification.
- The limited evidence available suggests that the most successful of these is the first—that is, reformulating products by replacing particularly harmful chemical components with more benign alternatives. However, not all products can be reformulated in this way.
- One well documented example of product modification has been the use of a non-sniffable, low-hydrocarbon vehicle fuel, known as Opal, in more than 70 Australian Aboriginal communities. Anecdotal evidence suggests that, since the introduction of Opal early in 2005, it has led to a reduction in petrol sniffing. No formal evaluation of the scheme has yet been undertaken.
- The Opal scheme (which in September 2005 was officially renamed the Petrol Sniffing Prevention Program) was successor to an earlier scheme, under which Aboriginal communities received a subsidy from the Australian Government to enable them to retail aviation fuel (known as Avgas) at price parity with unleaded petrol. Avgas, being low in aromatics, was also un-sniffable, but was phased out from 2004 because of its high lead content, and therefore environmental implications. Evaluation of this initiative showed that its introduction was associated with reduced petrol sniffing and associated harms, particularly when implemented alongside other measures.
- Product substitution measures for volatile substances commonly misused in urban areas should be further investigated, for instance restricting spray paint sales to relatively low-toxicity products.
- The two remaining ways of modifying inhalants—by adding deterrent chemicals or altering packaging so as to deter misuse—have both been tried in various settings, without evidence of success.
- Evidence suggests that product modification has maximum effect on early and/or occasional users, rather than chronic users.

*Locking up petrol supplies*

- Although many attempts have been made to prevent petrol sniffing by restricting access to supplies, especially in remote communities, evidence suggests that such efforts are almost invariably unsuccessful.

*Statutory and voluntary restrictions on sales of VSM products*

- Most Australian jurisdictions prohibit the sale of specified VSM products where the vendor could reasonably be expected to know the goods are intended for misuse.
- A number of jurisdictions have introduced statutory restrictions on supply of specified VSM products to persons under 18 years. The effects of legislating to restrict sales of volatile products are unclear. In the UK, the introduction of legislation targeting sales of glue products was followed by an increase in deaths from butane and aerosol misuse (Esmail et al., 1992; Taylor et al., 2000). Also in the UK, regulations introduced in 1999 banning the sale of cigarette lighter refills to persons under 18 years have been followed by declines in deaths associated with lighter fuel VSM in some years, but not in other years.
- Several local attempts to reduce VSM prevalence have entailed efforts to reduce supply through voluntary agreements with retailers. The limited evidence indicates that targeting retailers has been an effective strategy when introduced through a local community development process entailing retailer education.

## 6 Demand reduction I: Community-based approaches

Given the ready availability and cheapness of many inhalants, and their intensive psychoactive effects, it is unlikely that any supply reduction measures, in themselves, will lead to sustained eradication of VSM. Measures to reduce demand for inhalants are also required. These can include preventive programs such as educational and recreation-oriented interventions, counselling and family support, and treatment and rehabilitation services. In this and the two following sections, we review evidence relating to interventions aimed at reducing demand. We begin by discussing several multi-faceted community-based approaches in remote, regional and urban settings. The following section will address educational, recreational and other preventive demand-reduction initiatives, while the third will consider treatment and rehabilitation.

We begin with initiatives in remote areas, then discuss interventions in urban and regional centres.

### 6.1 Community-based approaches in remote Indigenous communities

A recent Commonwealth Senate inquiry into petrol sniffing concluded that two factors shaped a community's capacity to prevent petrol sniffing, neither of which related directly to any anti-petrol sniffing activity (Senate Community Affairs Reference Committee, 2006). The first was the availability of other drugs for young people to use as alternatives to petrol; the other was the general level of community wellbeing: 'repeatedly the Committee was told that strong family and community support is essential for preventing and effectively dealing with petrol sniffing' (p. 17). Community wellbeing is influenced by broad social, economic and cultural factors that are well outside the purview of this review. Nonetheless some programs have had success in supporting communities and strengthening their capacity to respond to young people's drug use.

#### 6.1.1 *Western Australian Working Party on Petrol Sniffing*

In 1986 the Western Australian Government established a Working Party on Petrol Sniffing. Following consultations with communities in the Eastern Goldfields region of Western Australia, the Working Party established a community-based program to reduce petrol sniffing among the Ngaanyatjarra people. The area included eight communities with a combined Aboriginal population estimated in 1988 at 1388 (Lang & Kickett, 1989). The program took as its starting point the disempowerment and disintegration which, the Working Party argued, afflicted Aboriginal communities as a result of the imposition of European dominance. To counteract these effects, the program sought not only to impart skills which could be used to combat petrol sniffing, but also to promote the capacity of communities to act collectively to prevent petrol sniffing, support families who needed help, and to generate a sense of collective and individual pride.

The approach involved a number of key components. The first of these was the compilation of data for use as a baseline against which to measure progress. The Working Party gathered

hospital morbidity and mortality data and information from police records. A second component involved convening community workshops at which community members identified a range of possible strategic options and then selected one for action. One community, for example, decided to establish a camp for sniffers on a remote outstation. Sniffers would not only be given time to dry out, but also to work on tasks such as fencing, and to learn traditional culture and bushcraft. A third component involved the production of educational materials which in turn sought to impart skills, promote self-esteem, and disseminate information about the effects of petrol sniffing on the body. Finally, key informants in communities were selected as sources of information about the effects of the programs.

In an early report (Lang & Kickett, 1989), members of the Working Party presented an optimistic account of the program. Later, however, the same authors were much more critical of their own approach (Lang & Kickett, 1990). It had been a mistake, they now argued, to regard the community as the ‘primary system’ on which to focus the program; beneath a veneer of homogeneity, communities were in reality too divided—by language, religious affiliation, generational loyalties, to mention a few factors—to be able to act cohesively. Instead, the authors continued, the family should have been regarded as the major system. They pointed out that after two years the Working Party had been unable to establish a single core working group in any community. They also stressed the need for effective evaluation mechanisms to be built in from the outset of any project of this nature. Had this been done, they argued, those responsible for the program would have been much less likely to have misinterpreted early signs of community action.

### *6.1.2 Community-based approaches in Central Australia*

Community-based approaches to VSM have a long history in Central Australia (see Dalton-Morgan, 1987). Many successful and innovative programs are discussed (in English, Pitjantjatjara, Warlpiri, Arrente, Western-Arrente, Luritja and Pinturbi-Luritja) in a series of radio programs produced by Central Australian Youth Link-Up Service (CAYLUS) and available as a boxed CD set (Central Australian Youth Link-Up Service, 2006b) or in copies of their newsletter *Youth Link-up* available at: <http://www.users.on.net/~tangcnl/data/caylus/Our%20newsletters/>.

The Australian interventions discussed below are among the more significant of these and/or are relatively well documented.

### *6.1.3 Healthy Aboriginal Life Team (HALT)*

One intervention that attracted a lot of interest in the 1980s and early 1990s was the model developed by a Central Australian trio who, following their official formation in November 1985, initially called themselves the Petrol Sniffing Prevention Team, and later the Healthy Aboriginal Life Team, or HALT (Franks, 1989). HALT was a family counselling and education program based on the principles of community development. It grew out of a community-based program initiated at Yuendumu in 1984.

The model was based upon a view of petrol sniffing as ‘a systemic disorder arising from and contributing to a degree of broad social dependency which has resulted from many harmful forms of interaction with outsiders’ (Franks, 1989, p. 15). In other words, the explanation for petrol sniffing was to be found, not in the pathology of individual sniffers, or in particular types of families (e.g. fatherless families, alcohol-abusing families), but in the historically conditioned patterns of interaction between Aboriginal society and white Australian institutions.

Under the policy of assimilation, according to HALT’s critique, Indigenous social institutions were undermined. In particular, the nurturing and controlling capacities of the family and kinship systems were weakened; important social roles, particularly those occupied by males, all but disappeared and, in their place, emphasis was placed on the importance of biological parents (in keeping with Western family ideology). The outcome was a society characterised by systemic social dependency (Healthy Aboriginal Life Team, 1988, p. 9), fragmented and demoralised kinship systems, apathy, and a retreat into alcohol and other substance misuse as well as violence in an attempt to regain lost power and cope with unresolved grief.

Although the policy of assimilation had ended, HALT argued that the conventional mode of interaction imposed on Aboriginal communities by non-Aboriginal institutions continued to sustain dependency. From the standpoint of these communities, outsiders function as ‘provider or control agent’ (Healthy Aboriginal Life Team, 1988, p. 61). HALT claimed to operate from a radically different perspective, one governed by reciprocity rather than provision and control. Its role as an outside agency was not to deliver a service, but to release capacities inherent in the community. It aimed to work with Aboriginal family systems in order to help them recover their capacity to resolve problems; specifically in the case of petrol sniffers, it sought to reintegrate sniffers with their family systems and to promote the nurturing and controlling capacities of those systems (Franks, 1989; Healthy Aboriginal Life Team, 1988). HALT utilised counselling techniques to enable communities and families to redefine petrol sniffing as a problem which could be rectified by families.

HALT was evaluated in 1991 by Bryce, Scrimgeour and Rowse (1991, 1992). The evaluators held discussions with people at Yuendumu, who recalled a number of interventions in the mid-1980s, including HALT, as having contributed to successes achieved during this period. Bryce et al. conclude that HALT was one factor in Yuendumu’s success, but by no means the only one.

The evaluators found, moreover, that the successful Yuendumu actions departed at some points from HALT’s suggestion that adults nurture petrol sniffers. Adults had used terror and corporal punishment to discourage sniffing, and some sniffers appeared to have ‘graduated’ to alcohol when they reached manhood.

In 1985 HALT commenced work at the Central Australian communities of Kintore and Kiwirrkurra. Here the team further developed the technique of ‘family mapping’, where a child’s relationships was painted or drawn to reaffirm the role of kin in child rearing (Bryce et

al., 1992). They also appointed community workers and supported people in sending sniffers to stay with other family members. Bryce et al. reported that HALT had contributed to a reduction in petrol sniffing, but that a core of sniffers remained.

In the late 1980s the HALT model was also applied on the Anangu Pitjantjatjara Yankunytjatjara (APY) Lands, where, in contrast to Yuendumu and Kintore, HALT did not have prior relationships with community members. Bryce et al. conclude that this factor, along with competition from two other models favoured by APY communities for dealing with petrol sniffing, led to HALT's failure to influence petrol sniffing significantly. The two rival models, in Bryce et al.'s terms, were the 'work' model and the 'police aide/surveillance' model.

HALT's experience suggests that, in the hands of a skilled counsellor, orthodox counselling and community development techniques can be effective, if used with sensitivity and respect for Aboriginal perceptions and values. HALT may have been successful in Yuendumu because it was developed there. However, the failure of HALT to impact significantly on the APY Lands suggests that its use as a model for other groups and communities is limited.

In a later discussion of HALT, Rowse (1996, pp. 48–81) has argued that in emphasising the imperative for Aboriginal people to solve problems through reactivating traditional social authority structures, HALT may have underestimated the usefulness to Aboriginal people of outside, or new, interventions when dealing with new problems such as petrol sniffing. He argues that 'traditional' child rearing practices may discourage parents and elders from censuring petrol sniffers, through fear of losing the goodwill of young people. Brady has also identified problems which arise from an uncritical belief in the power of a revival of 'culture' to heal Aboriginal people of modern ills (Brady, 1995).

#### *6.1.4 Petrol Link-up*

Unlike HALT which originated in one community, the Petrol Link-up project was initiated as a regional approach to addressing petrol sniffing. Petrol Link-up was funded between July 1994 and March 1995 to work in the Northern Territory, South Australia and Western Australia cross-border region of Central Australia. Petrol Link-up was never formally evaluated.

Where HALT concentrated on families and individuals, Petrol Link-up's main focus was on creating mechanisms for the sharing of information between communities about petrol sniffing-related interventions, and on encouraging and supporting community action, in the belief that not all sniffers could be stopped by family action. Petrol Link-up also provided administrative assistance and liaison for communities in their search for funding. The program also supported and encouraged the adoption of Avgas by APY communities, the Ngaanyatjarra communities and Western Desert communities in the NT.

The 'Three Ways' model developed by the Petrol Link-up team advocates the use of a range of strategies in dealing with petrol sniffing (a view consistent with the main thrust of this review).

The model entails:

1. reducing the availability of petrol by its substitution with Avgas;
2. rehabilitating sniffers through removing them to outstations—giving respite to communities and giving sniffers an opportunity to ‘break’ their behaviour; and
3. providing positive alternatives through youth programs, recreational activities, employment opportunities and the like within communities (Shaw, Armstrong, & San Roque, 1994, p. 19).

The Petrol Link-up team contended that stopping petrol sniffing requires an enormous effort by adults; their major strategy involves fostering and supporting these endeavours. Where families were unable to stop their children sniffing, Petrol Link-up advocated community action:

Essentially the community action makes the statement that petrol sniffing is not acceptable ... We believe it is important to encourage the community to try *something*, and *whatever it is* to support them. An intervention that is up and running and experiencing problems can be changed according to people’s perception of a more positive approach. In communities that currently have no intervention we have found that there are invariably plans and dreams. We have encouraged people to embark on their plans and given every support we can. It is also clear that people have been inspired by the stories from other communities ... Activities of a program such as Petrol Link-up are a catalyst for reactivation of community will (Shaw et al., 1994, pp. 13–14) (their emphasis).

Petrol Link-up was involved in producing a number of resources still in regular use in Central Australia, most notably the Brain Story, discussed elsewhere in this review. The team were also keen to redeem the outstation movement which was not viewed positively in the literature at that time.

It is difficult to assess the overall impact of Petrol Link-up. However, two of the strategies that it advocated—Avgas and outstation programs—have since been critical in reducing petrol sniffing. The model developed by Petrol Link-up has also been influential in the development of subsequent programs.

#### 6.1.5 *Makin’ Tracks*

In 1999 the Adelaide-based Aboriginal Drug and Alcohol Council (ADAC) was funded to run a program entitled ‘Makin’ Tracks’. The project employed a mobile team of two workers and was externally evaluated (Gray & Stearne, 2004).

The project commenced with three aims, the first of which was to develop ‘a multi-strategy plan for intervention strategies for Aboriginal solvent and other drug misusers in a number of South Australian communities’ (Gray & Stearne, 2004, p. 1). Project aims altered when it became

apparent that objectives of developing individual community strategies and a multi-agency plan to tackle petrol sniffing in the cross-border region were not feasible within staffing levels.

A new objective was agreed: to provide support and training or backup to other individuals and agencies working (often in remote communities) with people misusing substances, a role not unlike that previously undertaken by Petrol Link-up. As the project evaluation found, this function was sorely needed in the region. For instance, a drug and alcohol worker in one community was employed solely on the basis of the qualification that he himself did not consume alcohol (Gray & Stearne, 2004, p. 22). Substance misuse workers in communities told evaluators that they had benefited from both formal and informal training and assistance provided by Makin' Tracks staff. A worker at Yalata commented:

Since yarning with Paul [Elliot] he has taught me counselling methods and drug and alcohol stuff. ... I'd find it much harder to do this if I didn't have help and assistance (Gray & Stearne, 2004, p. 30)

Other project strengths documented in the evaluation include employment of well-qualified staff. Staff of the Makin' Tracks project contributed expertise to a concurrent ADAC project, the *Petrol Sniffing and Other Solvents Kit* (Aboriginal Drug and Alcohol Council (SA) Inc, 2000). Makin' Tracks worked most intensively in places where workers had extensive family networks and thus were better able to engage community members. Gray and Stearne conclude that the following aspects of the program might be usefully replicated in other Aboriginal substance interventions:

1. The project had clearly defined objectives based on Aboriginal community needs.
2. Workers were able to respond to the changing needs of individual communities.
3. An evaluation framework linked to project objectives was established at the commencement of the project and supported by staff.
4. The project functioned cooperatively with other interventions at ADAC and with other agencies.
5. Staff were able to build capacity in other communities through training and supporting local workers.
6. Aboriginal staff members were highly aware of cultural issues such as kinship relations which provided 'recognition of potential obstacles and ... the opportunity to avoid them or turn them to positive use'. (Gray & Stearne, 2004, p. 36)

The scope of Makin' Tracks was, however, limited by its capacity to employ only two staff. Other difficulties included a high staff turnover due in part to the strain of spending long periods of time travelling and away from family. In the second phase of the project, staff made more frequent but shorter visits to communities. Additionally, events that occurred within communities sometimes made it difficult for workers to achieve the aims of particular visits.

### 6.1.6 Central Australian Youth Link-Up Service (CAYLUS)

Throughout the late-1990s continued calls were made in Central Australia for the establishment of a program that would take up the role which Petrol Link-up had previously fulfilled. The Central Australian Youth Link-Up Service (CAYLUS) was awarded funding in September 2001, but did not develop a governance and management structure acceptable to all stakeholders, or appoint a coordinator, until November 2002. CAYLUS was evaluated in 2004 (d'Abbs, Shaw, & Clough, 2004).

CAYLUS draws on the community development and capacity-building approach of Petrol Link-up. It is auspiced by Tangentyere Council in Alice Springs and employs two coordinators and a casework coordinator. The program has four main aims:

1. To reduce inhalant and other substance abuse among young people through community development aimed at improving the quality of life of young people in remote areas and Alice Springs.
2. To respond quickly to remote communities' requests for assistance in developing strategies to reduce supply and demand for inhalants. To assist in the implementation of these strategies including sourcing funds, workers, infrastructure and training/education.
3. To provide case work where no other agency can assist. To coordinate existing casework agencies to ensure clients do not fall through the gaps, especially for those people moving between remote locations to Alice Springs.
4. To advocate on behalf of the CAYLUS reference group and remote communities for resources to address inhalant abuse, including the rollout of non-sniffable Opal fuel and the provision of youth program infrastructure (Central Australian Youth Link-Up Service, 2006a).

Evaluated outcomes for CAYLUS include securing over half a million dollars for member communities. A further quarter of a million dollars was dispersed to communities in order to support anti-VSM activities. Twenty-two youth programs were initiated in Central Australia. An additional 36 school holiday programs were also organised. Two communities were supported to use funds that had been insufficient to employ youth workers by merging resources into one program. Eight communities held meetings to discuss how they might respond to petrol sniffing. Three outstations were also assisted. CAYLUS also lobbied various government bodies and developed submissions for coronial inquests. In Alice Springs CAYLUS worked successfully with retailers to restrict supply of spray paints (d'Abbs et al., 2004).

Difficulties encountered by CAYLUS included lack of clarity among colleagues in communities as to the services the organisation had capacity to offer, burdensome administrative requirements in divesting brokerage funds, tensions between time spent on case work and community development, and dealing with concerns over equal allocation of funds to communities involved.

CAYLUS has proved particularly effective as an advocacy body, both on its own and as part of the Opal Alliance—a group involving CAYLUS, NPY Women’s Council and the owners of Ayers Rock Resort—formed to bring the attention of Australians and their governments to the case for subsidising Opal petrol in areas affected by petrol sniffing.

#### *6.1.7 Mt Theo–Yuendumu Substance Misuse Program*

The Central Australian community of Yuendumu has for many years been active in addressing petrol sniffing and other forms of substance misuse. The Substance Misuse Program has three components: the Mt Theo Outstation (described at section 6.1.7); a Youth Diversion Program designed to generate regular activities for young people as a preventive measure; and the ‘Jaru Pirrjirdi Project’, established in 2003 to provide after-care and vocational training for older young people. Together, these interventions have enabled Yuendumu to dramatically reduce levels of petrol sniffing among its young people (see <http://www.mttheo.org/home.htm>).

Jaru Pirrjirdi was established with the intention of addressing the problems underlying petrol sniffing and other forms of substance misuse. The program’s name translates to ‘strong voices’ and endeavours to help young people aged 17–30 in the community find a way to ‘engage in meaningful and productive activity’ and to allow young people to articulate the issues facing them and visions for the future (Badger 2006 quoted in Saggars & Stearne, 2007, p. 4).

There are three progressive levels of involvement in Jaru Pirrjirdi. At level one, participants run the program of youth activities in the community, for instance supervising the pool table or other activities. They may also attend night school. After 3–6 months involvement, participants become ‘Jaru Workers’ (level 2). At this level they take responsibility for bush trips and cultural activities involving younger community members. Senior Jaru (level 3) are required to mentor other young people and to ‘take on meaningful and responsible positions in their community’ (Saggars & Stearne, 2007, p. 5). Jaru workers are paid under the CDEP scheme. An evaluation (Saggars & Stearne, 2007) found that the program had significantly improved young people’s sense of connectedness to community. Graduates of the program are now employed within a range of community programs and services including child care and community policing.

The evaluators argue that the most impressive component of the program is the care and mentoring offered to younger people in the community. Senior Jaru are supported by workers to mentor young people who are considered to be ‘at risk’. Jaru mentors are credible to young people because they have experienced many of the same difficulties (Saggars & Stearne, 2007).

#### *6.1.8 Factors inhibiting or enhancing the success of programs in remote communities*

Few cases of unsuccessful community development approaches to tackling VSM have been documented. Those that have suggest that efforts have sometimes foundered on lack of cooperation between Indigenous and non-Indigenous staff, lack of community support or lack of appropriate governance mechanisms. Senior and Chenhall (2007), for instance, describe one attempt by a community involving engaging young people in activities and attempting to

raise their self esteem thorough fostering a sense of belonging. This program, they argue, was undermined by a lack of support from the non-Aboriginal office bearers in the community:

Members of the River Town community considered that they should be able to construct a petrol-sniffing program entirely within the Aboriginal domain, and involve the Aboriginal employees of the key institutions of the Council, clinic, school and police. However, their positions within these key institutions did not afford them the authority to make decisions concerning the involvement of their organisations (Senior and Chenhall, 2007, p. 325)

Conversely, when a similar program was initiated by a non-Aboriginal resident a year later, few Aboriginal residents were willing to be involved. This process served to undermine the authority of Aboriginal leaders in the eyes of young people sniffing petrol. Senior and Chenhall conclude that community support and involvement are not, on their own, sufficient for a successful program. Awareness of the community's intentions and support from staff and funding bodies are also essential.

In some remote communities structures for program governance are altogether inadequate. This makes it very difficult to implement an effective program. For instance, in January 2002 the Darwin Skills Development Scheme was contracted by the Department of Health and Ageing to conduct a Youth Wellbeing Program involving responses to petrol sniffing. Evaluation of this program found that lack of viable administrative bodies in some local communities made it very difficult to access appropriate people or to expend funds (d'Abbs et al., 2004).

Conversely, Mosey (2000) has identified what she sees as key elements of any intervention strategy aimed at dealing with VSM in Indigenous communities:

- Programs also need enthusiastic support from non-Aboriginal institutions such as the council, school and police.
- Broad community and family support is required. Family members should be actively involved in roles such as becoming wardens or taking children to outstations, teaching them stories or law, and praying for them.
- Several strategies should be implemented as part of any one campaign, including both 'sticks' and 'carrots'.

## 6.2 Community-based approaches in urban and regional locations

In 1992 the World Health Organization hosted a conference on responses to VSM, at which participants concluded that local community strategies were the best way of dealing with the problem (Parliament of Victoria Drugs and Crime Prevention Committee, 2002). We do not attempt to review here all of the local programs that have been implemented in Australia over the past decade (few, in any case, have been formally evaluated or documented), but rather present a selection of community-based initiatives in urban or regional settings.

### 6.2.1 *Sunshine Chroming Awareness Program (Melbourne)*

The Sunshine Chroming Awareness Program operated for three years during 2000–2002 through the Salvation Army. The program is described in detail by the Drugs and Parliamentary Committee (Parliament of Victoria Drugs and Crime Prevention Committee, 2002).

Sunshine is a disadvantaged western suburb of Melbourne. In response to community concern about young people chroming in public places, representatives from a range of local agencies met regularly to develop a response. A major focus was on working with retailers to reduce supply of VSM products (discussed above, under Supply reduction). The project conducted research with school staff and young people to determine the extent of chroming and reasons for this form of drug use. Locations where chroming occurred regularly were identified. Welfare agencies made regular outreach visits to these places. On finding from their research that boredom was a major reason for chroming, the committee shifted its focus from drug use to look more broadly at improving young people’s sense of engagement and connectedness with the local community (O’Grady, 2001).

### 6.2.2 *Cairns Inhalant Action Group*

In early 2002 the Cairns Inhalant Action Group (CIAG) was convened by Wuchopperen Health Service, an Aboriginal and Torres Strait Islander community-controlled health service in Cairns, in response to an upsurge in VSM. The coordination of this group has been the core business of Wuchopperen’s Social and Emotional Health Service. Participants included the Cairns City Council, Queensland Police, non-government and government agencies. A Substance Misuse Worker was employed for four years at Wuchopperen until September 2006 through a grant from the Alcohol, Education and Rehabilitation Foundation (AERF). The CIAG has met monthly for five years. Measures adopted included:

- working with retailers to restrict product supply—through letters, visits, resource development and distribution of pamphlets;
- staff development—including assisting the local council’s development of protocols for dealing with street intoxication, a referral flow chart and running education workshops, and discussions on the development of a residential rehabilitation facility for remote-area youth;
- interagency case management of known users;
- development of an information card and other resources;
- conducting needs assessments among service providers and users and monitoring changes in VSM prevalence in order to further develop the group’s strategies;
- educating communities and families about responding to VSM, through development of a Streetwork Outreach Program with a focus on building capacity of families; and
- advocacy to government to improve service responses for people who use volatile substances (Robertson, 2002, 2007).

Detailed project achievements have been documented (Robertson, 2007). Recurrent funding has been obtained from OATSIH to enhance the Drug and Alcohol Program and secure the future of the Streetwork Outreach Program. VSM prevalence in Cairns reduced during the program's operation. As a result, as of July 2007 the CIAG had reduced its meetings to twice yearly with a commitment to convene more often if necessary.

### *6.2.3 Connecting Koori Kids and SEERS*

The Latrobe Valley is socio-economically disadvantaged and has a high Indigenous population compared with other areas of Victoria. Two programs were developed in the Latrobe Valley area of Gippsland, Victoria, in response to apparent increases in chroming.

'Connecting Koori Kids' was a short program that used a community development approach. The program worked with Indigenous young people aged from 22 to 25 who were at risk of using inhalants and with other community members (Hughes, 2003). It was developed collaboratively by the Youth Substance Abuse Service (YSAS) and the Ninde Dana Quarenook Indigenous Co-operative. Workers educated the Indigenous community about the risks of chroming and developed strategies with the community and affected families to strengthen young people's sense of connection. A youth group provided young people with alternative recreational options. Activities included the Koori Air Radio Program, cultural performances, sports and educational programs.

The Safety, Engagement, Education and Recreation (SEER) program, also in the Latrobe Valley, was developed after funding for Connecting Koori Kids expired. Local agencies had developed a referral system to ensure that adolescents found chroming or engaging in other high risk behaviours by police received follow-up care and support from health and welfare agencies. In 2003 legislation was introduced in Victoria that empowered police to search and seize volatile substances and to collect minors affected by VSM and take them to a place of safety. Service providers, however, were concerned that some of the volatile substance users did not have homes that could be considered safe and therefore a facility was required where these young people could be taken when affected by volatile substances. They also felt that an activities program should continue to be available for young people at risk of VSM. Data gathered through the referral process were used to substantiate the need for a day program, to create a 'place of safety and engagement'. Like the CIAG (above), the program received a limited period of funding from the AERF, from 2004 to 2005.

SEER targeted young people aged 12–15 years who were not attending school and either at risk of, or already using, volatile substances and was externally evaluated (Murphy, 2005). Police reported that SEER provided an appropriate place to take intoxicated young people. Various activity programs were provided, with staff finding that semi-structured activities engaged young people most effectively. Young people reported that they chromed less when other enjoyable activities were available to them. SEER initially aimed to link young people into courses such as TAFE. Participants had low levels of education and struggled to control

drug use so this aim proved unrealistic. The program evaluation concluded that one benefit was improved communication and cooperation between agencies providing services to ‘high risk’ young people. Visible use of inhalants in the Latrobe Valley diminished after the program was instituted; although to what degree this can be attributed to SEER is impossible to determine (Murphy, 2005).

#### **6.2.4 Mount Isa Volatile Substance Misuse Action Group**

Workers in the mining town of Mt Isa in Queensland noticed in early 2000 that the town’s previously episodic incidence of VSM had become more consistent. Young people’s interest in VSM was continually reactivated by alarmist media coverage of their activities (Polson & Chiauzzi, 2003). A meeting was convened by Mount Isa Police and the Department of Family Services to address the matter, which led to the establishment of a working group representing government, non-government and community members. The working group identified five areas for action:

- restricting supply through working with local retailers;
- training teachers, parents and other community members to recognise VSM;
- developing protocols between police and the local hospital to ensure appropriate care for affected users;
- developing programs to assist young people in developing self esteem and resilience; and
- establishing a ‘Family Healing Program’ to engage young people known to be chronic users. The program consisted of bush camps, life skills training, cultural teaching, counselling and family case management. Nine participants were involved in this program.

Eighteen months after this program began all male participants had stopped VSM. Some of the young women continued to use volatile substances, albeit only episodically (Polson & Chiauzzi, 2003).

#### **6.2.5 Local government responses**

Local governments have recently emerged as increasingly important participants in drug use policy and intervention. Councils responding to the Victorian Drugs and Crime Prevention Parliamentary Committee saw their optimal role as facilitative, drawing together concerned groups of people (Parliament of Victoria Drugs and Crime Prevention Committee, 2002).

Local councils have been key participants in many of the local strategies described above. Some local councils have also initiated their own programs. Two Victorian local council programs at Wyndham (on the western fringes of Melbourne) and Darebin (in the metropolitan north) are described in the *Inquiry into Inhalation of Volatile Substances* (Parliament of Victoria Drugs and Crime Prevention Committee, 2002).

### 6.3 Conclusion: meeting the needs of young people

VSM is only one of a range of ‘risk’ behaviours such as alcohol and other drug use, suicide, self-harm and drink driving which cause enormous worry and grief to communities, both Indigenous and non-Indigenous. Brady (1992) suggests that young people in Aboriginal communities have very little authority and that sniffing is one means by which they can exert power. Although the problems facing young people in Aboriginal communities, as elsewhere, cannot be reduced to the level of funding alone, several observers (Roper, 1998; Brady, 1992) have suggested that greater attention to young people’s needs and opportunities may in itself be protective against petrol sniffing. McFarland suggests that the availability of basic food, shelter, education, youth workers and youth-focused programs in remote communities would substantially reduce sniffing: ‘the way forward is by improving the lot of all youth in remote communities’ (McFarland, 1999, p. 7).

Given the coincidence of VSM in urban communities with experiences of marginality, such as involvement with child protection or juvenile justice services and poverty, it can also be argued that addressing the underlying disadvantage would impact most effectively on VSM among Indigenous and non-Indigenous urban youth alike (MacLean, 2006).

Local community action programs are time-consuming and often labour-intensive but very often appear to effect a reduction in VSM and associated harms. These kinds of campaigns are dependent on the energy of working group participants and project officers. Difficulty in securing funding for these groups, alongside the often episodic nature of VSM, means that when VSM declines in the community concerned it is difficult to implement ongoing preventive strategies.

### 6.4 Summary

- Over the past 20 years, many instances of multi-faceted, community-based approaches to preventing and managing VSM have been implemented, in both remote and urban/regional centres.
- Evidence from two programs in Central Australia (Petrol Link-up and CAYLUS) suggests that, in remote regions, there are benefits to be derived from adopting a regional approach, and complementing service provision with brokerage and advocacy activities aimed at promoting local community capacity.
- Remote communities can benefit from dedicated town-based staff who are able to visit to provide support, education, advocacy and information about VSM. Drug and alcohol workers placed in remote communities very often require support and backup from others with specific skills in working with people who use volatile substances.
- Successful community-based interventions in remote communities require support from non-Aboriginal agencies such as police, clinics and schools, as well as Aboriginal agencies and groups.

- Despite difficulties in securing ongoing funding, effective community campaigns in urban and rural locations have included: the involvement of a range of community members and agency representatives, research and consultation to determine specific features of VSM within the local area, improvement of communication mechanisms between local service providers (for instance, police and welfare agencies), community education to increase parental and worker sensitivity to the issue, retailer education, and targeting VSM ‘hotspots’.

## 7 Demand reduction II: Education, youth and recreational programs

In this section we review evidence relating to two major preventive approaches—drug education and recreational programs—and also touch briefly on two other preventive approaches: the role of education, training and employment in combating VSM, and the use of Indigenous cultural motifs as a vehicle for talking about VSM.

### 7.1 Information and education about VSM

As with other forms of drug use, education about VSM can be either universal or targeted. We consider in turn universal education, education targeted to known users and education targeted to communities.

#### 7.1.1 *Universal drug education*

Roper and Shaw (1996, p. 15) argue that education about VSM only draws attention to the practice and that information about VSM should not be offered to non-users in schools, a stance endorsed in several Australian jurisdictions. Some state education policies specify that schools should provide information about risks associated with VSM products through occupational health and safety rather than a drugs curriculum except where students are considered to be at risk of VSM or are already known users (Department of Education and Training, 2000; Drug and Alcohol Office (Western Australia), n.d.). A national policy statement on inhalant abuse recently endorsed by the Australian Ministerial Council on Drug Strategy also supports this approach (National Inhalant Abuse Taskforce, 2006). A Western Australian report on butane inhalation, however, found very little evidence on which to ground a decision whether or not to include VSM within mainstream drug education curriculum: ‘it appears that the approach is based on the repeated enunciation of basic behavioural principles rather than a significant body of research evidence’ (Western Australian Taskforce on Butane Misuse, 2006, p. 29). MacLean (2007b) has argued that the policy of excluding inhalants from mainstream drug education due to fear of exacerbating the practice is predicated on most children’s ignorance of the potential psychoactive effects of household products. This assumption is unlikely to hold for many young people growing up in disadvantaged areas.

In England and Wales it is a statutory requirement that schools teach a drug education curriculum including information about solvents (Advisory Council on the Misuse of Drugs, 1995). International research suggests that providing education about the effects of inhalant use to all young people might reduce subsequent drug experimentation and associated harm, although there is some dispute on this matter. Researchers in the UK have noted that inhalant-associated mortality has decreased since the early 1990s. They link this trend with a national campaign educating parents about inhalants, alongside inclusion of the issue of VSM as part of personal

and social education in schools (Field-Smith et al., 2006). Nonetheless, Ives (2006) argues that that education provided within UK schools has had little effect on young people's assessments of the dangers of inhalant use.

In the US, epidemiological data links a national anti-inhalant advertising campaign in 1995 with both an increase in 'perceived risk' associated with inhalant use among adolescents and a gradual decline in inhalant use. By 2003, when the campaign had ceased, this trend was reversed with an increase in use and corresponding reduction in the percentage seeing 'great risk' in using inhalants regularly (Johnston et al., 2006).

Early use of inhalants is associated with increased likelihood of a range of later problems. Wu et al. advise that any measures such as education to delay VSM initiation 'may help reduce the risk of progressing to abuse or dependence' (2004, p. 1213). Where education is provided universally on VSM, it should be designed in accordance with best practice research (see, for example, Coggans, Sherwan, Henderson, & Davies, 1991; Midford, 2006). UK and US researchers have recommended that volatile substance education be introduced early, during the late-primary school years (Coggans et al., 1991; Skellington Orr & Shewan, 2006; Substance Abuse and Mental Health Services Administration, 2003). Notwithstanding this, studies also acknowledge that raising the subject of VSM may have the unintended effect of encouraging initiation among students.

The UK Government is currently funding a five-year follow up study of the impact of school-based drug education for 11–13 year olds on subsequent drug use (Department of Health, Home Office, & Department for Education and Skills, 2005). In the absence of a comparable Australian study, the impact of UK drug education on levels of VSM will be important to monitor.

### *7.1.2 Education provided to known misusers of volatile substances*

The Senate Select Committee on Volatile Substance Fumes (Commonwealth of Australia 1985, pp. 217–18) reported widespread agreement that juvenile sniffers were well aware of the dangers of petrol sniffing, and that providing information on the dangers of sniffing was not only likely to be ineffective, but might prove counter productive, especially if scare tactics were used.

Hayward and Kickett's (1988) findings add weight to the Senate Committee's conclusions. Hayward and Kickett interviewed 103 school children from seven Western Desert communities. They found that 72 per cent of petrol sniffers considered petrol sniffing to be harmful, and 77 per cent agreed that 'petrol sniffing can kill you' (1988, p. 27). Sandover et al. (1997) found that Aboriginal petrol sniffers interviewed in prison knew of the dangers of petrol sniffing but felt powerless to cease the practice. McFarland (1999) argues that young Aboriginal people's lives are full of danger and risk and in this context petrol sniffing does not appear to be particularly hazardous. As Brady (1992) points out, sniffing has been present in some Indigenous communities for over 20 years, with a result that some young people today are the children or relatives of former sniffers, some of whom show no apparent signs of lasting damage.

It does not, however, follow from these observations that education about VSM has no place. Treatment guidelines advise that clear information should be provided to inhalant users on harms associated with the practice (Department of Human Services, 2003; Substance Abuse and Mental Health Services Administration, 2003). Interviews with current and ex-petrol sniffers in Maningrida suggested that neurological effects such as impaired coordination worried petrol sniffers, and that this was particularly the case if they felt that it may impact on their ability to play sport (Burns, d'Abbs et al., 1995). The authors recommend that educational programs focus consequences of this sort rather than more dramatic outcomes such as brain damage and death. A Melbourne-based study also found that dramatic or threat-based injunctions not to chrome in some instances also intensified the sense of danger and excitement associated with VSM. Young people in this study also felt they lacked credible information about the effects of VSM (MacLean, in press).

### 7.1.3 *Education targeting communities*

The role of education aimed at communities and parents is much clearer than that of education provision in schools. The 1985 Senate Committee saw a need for the education of parents, and of others associated with Aboriginal communities, such as health and welfare personnel, teachers, youth workers, police and counsellors.

Material such as films, videos and pamphlets need to be produced in languages appropriate for each region and should be presented in a way that encourages optimism and increases confidence, rather than generating despair and increasing the already evident sense of hopelessness in dealing with the problem (1985, para. 9.44).

Education and other forms of support for parents are useful, particularly as those who used experimentally in their own youth may not be aware of the consequences of more intensive VSM. Targeted education campaigns in Native American communities have been linked with decreasing levels of VSM since the mid-1990s (Beauvais, Wayman et al., 2002). An educational pamphlet for parents has been produced by the Australian Drug Foundation (Jacobs, 2005). Education tools which use Indigenous culture to explain VSM and its effects are described in section 7.2 below.

Providing information to communities about the health effects of sniffing, what other communities have done in response to it, and fostering links between communities for exchange of such information has been a useful strategy in the past. This is an important function of Central Australian services such as Petrol Link-up and CAYLUS.

In 2000 the Aboriginal Drug and Alcohol Council (ADAC) of South Australia published a resource kit *Petrol Sniffing and Other Solvents* (Aboriginal Drug and Alcohol Council (SA) Inc, 2000). One of the booklets in the kit deals specifically with forms of VSM other than petrol sniffing. A copy of the earlier version of this review (d'Abbs & MacLean, 2000) is also included. Evaluation of the kit found that it provided a valuable resource and workers reported that having the kit increased their sense of capacity to address VSM. The kit was found to be most suited

to the needs of professionals and policy makers working indirectly with communities and least useful for community members and parents (MacKenzie & Johnson, 2004).

The ongoing accumulation of knowledge and experience about VSM makes it necessary for resources to be updated frequently. The team evaluating the ADAC kit recommended that specific information formats be devised for use in Indigenous communities including flipcharts, interactive games (as board games or computer games), videos, CDs in local languages, flow charts and program outlines (MacKenzie and Johnson, 2004, p. 63). They suggest an updated version of the kit might be used as a template so that resources could be developed to meet the specific needs of local communities, by adding local images, language and context. All new resources, the authors argue, should be tested with Indigenous audiences prior to production.

Professional staff in contact with people using volatile substances, such as teachers, health workers and council workers, can also benefit from education and training about sniffing. Many users of inhalants access health or welfare services rather than specific drug and alcohol services (National Inhalant Abuse Taskforce, 2006). This means that staff of generalist health and welfare services (general practitioners, community health centre staff, mental health practitioners, and juvenile justice and child protection workers) should be equipped to assist people disclosing VSM. In the UK, focus groups were conducted with social workers, residential and foster carers and also with young people to determine social service staff's training needs in relation to VSM (Boylan, Braye, & Worley, 2001). A resource for social service staff entitled *Tackling VSA* has been developed in the UK and is available for order from the Re-solve website (<http://www.re-solv.org/publications.asp>). In Australia the recent evaluation of the ADAC kit found that workers require training in how to use information kits when working in communities (MacKenzie & Johnson, 2004).

## 7.2 Using Indigenous culture—painting, relationships and initiation

This section describes the use of Indigenous cultural practices as vehicles for preventing VSM. The practices span a range of functions such as teaching, counselling, cultural revival and strengthening communities. The impact of such interventions on VSM is difficult to assess, and to our knowledge virtually none have been evaluated. Such interventions do, however, offer the potential to influence ways in which people think about substance misuse through harnessing resources to be found within Aboriginal culture, as well as through promoting family and community ties and systems of care.

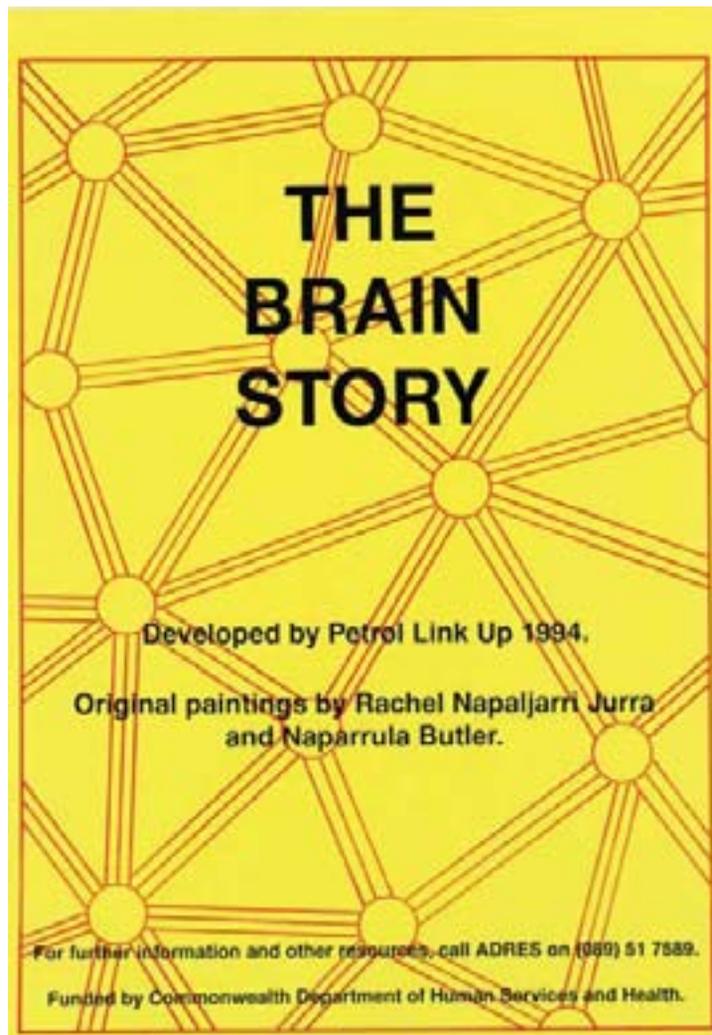
Canadian solvent treatment programs often combine Indigenous and Western healing techniques. One program is structured around the Medicine Wheel, with young people participating in four phases through their treatment cycle. Young people attend both schooling and traditional ceremonies (Coleman, Grant, & Collins, 2001).

The Healthy Aboriginal Life Team (HALT) in Central Australia used traditional paintings with specific reference to petrol sniffing. In 1984 Andrew Spencer Japaljarri, an Aboriginal member of the team and Warlpiri leader, painted a picture using Western Desert symbolism to portray

petrol sniffing in some Aboriginal communities. This painting, according to HALT, redefined the problem of petrol sniffing in Aboriginal terms, and suggested that solutions be sought within the social structures that had been damaged by sniffing (Healthy Aboriginal Life Team, 1988). The painting served as a health promotion instrument which triggered recognition that traditional styles of problem solving—consultation to achieve consensus, social cohesion and cooperation—would generate effective controls to stop the sniffing.

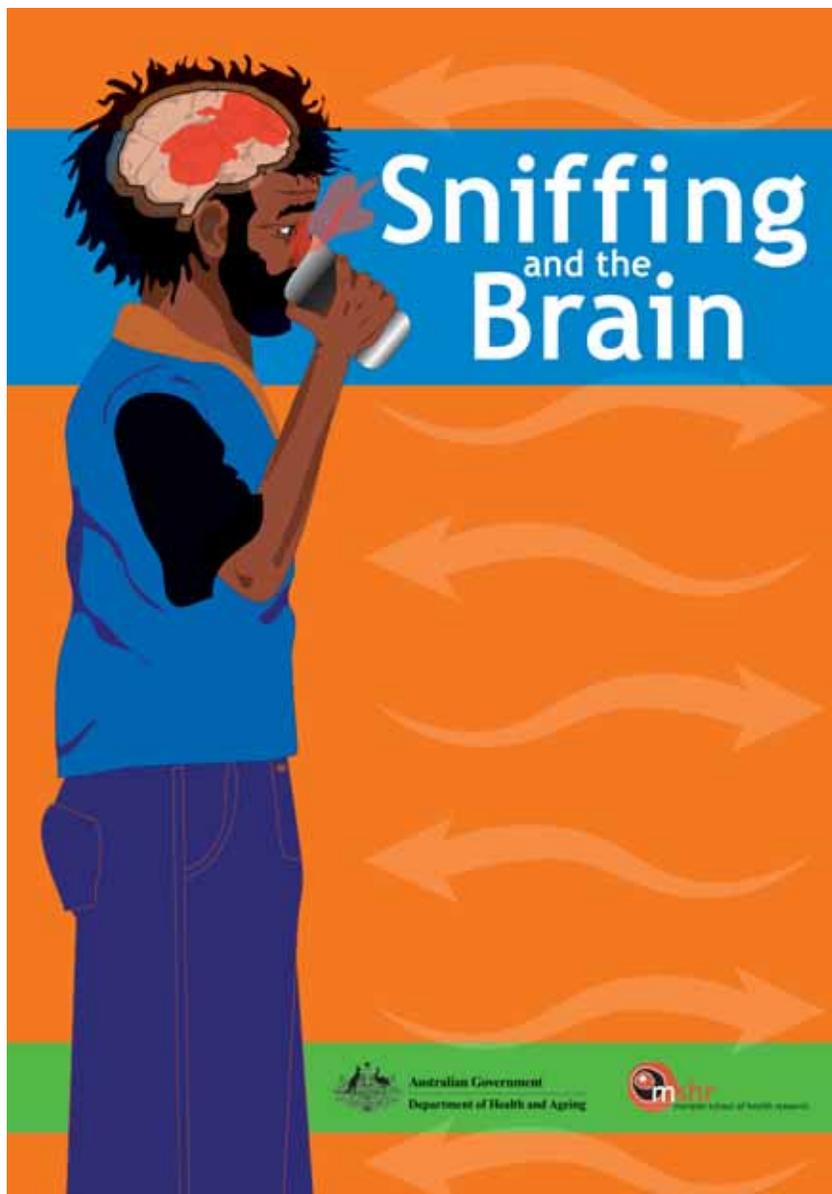
The ‘Brain Story’ developed by the Petrol Link-up team (1994) follows the HALT tradition of using Aboriginal art styles. It has been widely used in Central Australian communities as a catalyst to get people talking about petrol sniffing in their community. It depicts the effects of petrol sniffing on the brain in term of successive loss of functioning of different faculties. Cairney and Maruff (2007) have written an engaging chapter on the challenges involved in developing health education tools for Aboriginal people which make sense from both the perspectives of Western science and Australian Indigenous cosmologies. They use the Brain Story images to illustrate the possibility of combining Indigenous and non-Indigenous knowledge systems within one resource.

*Figure 5: From ‘The Brain Story’ developed by the Petrol Link-up team*



The ‘Sniffing and the Brain’ flipchart (Cairney & Fitz, 2005) is a further educational tool developed by the Menzies School for Health Research, designed to assist health and community workers explain the effects of petrol sniffing on the body to Indigenous audiences. Evaluation of the flipchart found that it was viewed positively by stakeholders, who emphasised that the story-telling format and use of images to explain the effects of petrol sniffing on the brain made it an effective tool (Cultural and Indigenous Research Centre Australia, 2006).

Figure 6: From ‘Sniffing and the Brain’ flipchart developed by Sheree Cairney and J Fitz



Telling young people stories can function as an expression of care and instruction. For instance, participants at a workshop on petrol sniffing held in Alice Springs in 1998 identified telling stories as a strategy for dealing with petrol sniffers (Central Australian Rural Practitioners’ Association, 1998). Another report explains how two young women who had been sniffing

petrol were taken out bush and sung back to health (Central Australian Youth Link-Up Service, 2006a). Learning traditional artistic techniques may also be therapeutic in itself. At Ngukurr, a remote NT community, a petrol sniffer was encouraged to develop a painting style which would enable him to communicate his ideas about petrol sniffing to others around him (Senior, Chenhall, & Daniels, 2006).

Numerous accounts exist of Indigenous families and communities managing to stop young people sniffing, either temporarily or in the long term, through activating caring relationships. In an anthropological study of relationships between men in the Kutjungka region of Western Australia, McCoy has argued that petrol sniffing is attractive to some young men because it offers social company and a right of passage into manhood (McCoy, 2004). He found that 40% of petrol sniffers in one community had fathers who were absent or deceased. Erosion of traditional caring relationships between older and younger men (*Kanyirninpa*) left young men relatively unrestrained and without a clear and recognised way to negotiate their changing roles as they mature: ‘Younger people were separated from important nurturing relationships with older people; older people felt helpless to watch over and protect the younger and following generation’ (McCoy, 2006, p. 2). Restoring and supporting caring relationships, argues McCoy, offers a way to draw young men away from risk or damaging practices such as VSM. One young man involved in the study was able to turn his life around when his stepfather demonstrated an interest in his welfare, suddenly stopping petrol sniffing, returning to school and playing football. Others stopped on the advice of an older man, even, in some instances, prison wardens.

The Intjartnama Group’s Western Line Project, based on a concept from Elva Cook’s painting in *Story About Intjartnama*, was an attempt at cultural healing through mobilising networks and relationships of care across country and between families: ‘Knowledge of and ability to work within these “lines” is an essential part of the Intjartnama strategy and is a privilege based upon the Intjartnama family’s own connections’ (Cook & Cook, 1997).

Writing in the early 1980s, Morice, Swift and Brady observed that petrol sniffing among boys often ceased with commencement of the initiation process. More recently, however, McCoy has pointed out that young men do not always cease petrol sniffing after initiation (McCoy, 2006).

The interventions discussed above are, in the main, controlled by Aboriginal people. Governments and organisations outside Aboriginal communities must be sensitive to the possible impact of the way in which they endorse programs aiming to reinstate Aboriginal ‘culture’ or ‘tradition’ in order to strengthen community responses to problems such as petrol sniffing. O’Malley (1994) points to some problems inherent in government-controlled efforts of this nature. In one such program, officials emphasised aspects of ‘tradition’ consistent with their program aims, and ignored or discredited others (such as the use of violent punishment or tolerance of sniffing). He concludes that the government department involved ‘cannot escape the fact that while setting out to shore up Ngaanyatjarra cultural and social autonomy, paradoxically it is setting itself as arbiter of another people’s tradition’ (O’Malley, 1994, p. 138).

In all, these projects are both interesting and innovative. How broad their potential appeal may be to various age, language and other groups might be, we cannot gauge. Culturally appropriate evaluation of such strategies would be useful.

### 7.3 Youth-work and recreational programs

‘We won the sniffers through disco, videos and football’, said Lloyd Jungarai Spencer after a recreational program at Yuendumu helped reduce numbers of sniffers (quoted in Stojanovski, 1994).

Providing young people with other meaningful activities assists in reducing the prevalence of VSM. On the basis of submissions placed before it, the Senate Select Committee on Volatile Substance Fumes (1985) specified several prerequisites for successful recreation-based interventions. These were:

- staff who were sensitive to the needs of the community, who understood something of the problems of petrol sniffing, and who would provide activities that were ‘purposeful, interesting, exciting and educational’ (207);
- activities during after-school hours, at evenings and weekends, and during school holidays;
- the need to include sniffers in activities, but not to give them preferential treatment; and
- the need for activities for females; in some instances separate programs and even youth workers of each sex may be needed.

The Committee’s conclusions, reached in 1985, are borne out by subsequent research on the role of recreation programs in addressing VSM, not only in remote communities but also in urban contexts. In the following section, we consider recreation programs in remote communities, then in urban and regional settings; the challenge of developing sufficiently exciting recreational options; and finally, the issue of targeting of programs to specific groups of users.

#### 7.3.1 *Recreation in remote communities*

Fewer recreation options are available in remote locations than in urban centres. A National Drug Strategy publication (Almeida, 1995) describes a program to develop out-of-school activities for young people and create a ‘stigma upon sniffing’. The program was non-competitive—rewarding group rather than individual achievement to ensure that no one felt ‘shamed’ as a result of participating—and activities included risk-taking experiences. The program targeted young people in the age range most vulnerable to sniffing (12–19 years) rather than known petrol sniffers. It attempted to ‘empower’ communities by identifying and training Anangu youth workers and teaching young people new skills.

Recreational programs are frequently run at periods where young people are at risk of VSM. For instance, the community at Nyirripi in Central Australia experienced an outbreak of petrol sniffing

during the 2004/05 school holidays. The next year a program of activities was implemented to ensure this did not happen again (Central Australian Youth Link-Up Service, 2006a).

In 2000 a football league was established by the Mount Theo-Yuendumu Substance Misuse Aboriginal Corporation. Eight teams from Warlpiri and Anmatjerre communities were formed and games were played seven days a week. So much prestige was associated with playing these games that young men known to sniff petrol had to work hard to convince team mates and coaches that were petrol-free in order to be allowed to participate (Campbell & Stojanovski, 2001).

Some have argued that youth workers rather than recreation workers should be employed on remote communities. This is because youth workers have a broader skill base, enabling them to work with young people who have very complex needs. Furthermore, youth workers operating within a community development paradigm might work to enhance the community's own capacity to run programs, rather than just providing activities (McFarland, 1999; Shaw, 2002). Mosey found that many communities and individuals whom she consulted in 1997 saw the lack of *non-sport focused* recreational facilities and of youth support staff as an important factor in the wave of 'social' sniffing which occurred that year (1997). Even where communities had a sport and recreation officer, people felt that this person's time was largely consumed by the activities of the (adult) local football team, which left him or her without time to organise activities such as discos which might appeal to sniffers or young people at risk.

Activities must be practical, utilise local resources and be sustainable (Osland, 1998). Osland's consultations at a Top End community revealed that recreational programs were viewed by the communities she worked with as having a key role in the prevention of petrol sniffing; however, the communities found it difficult to provide ongoing recreational programs without the funding to employ staff.

Indigenous communities often experience difficulties in gaining secure funding to employ youth workers and in attracting and maintaining appropriately skilled staff (Senate Community Affairs Reference Committee, 2006). The Jaru Pirrjirdi Program at Yuendumu in Central Australia (described above) employs older young people (frequently former petrol sniffers) to run recreation activities. Activities are run every day after school until late and on school holidays (Saggers & Stearne, 2007).

Relying on youth workers to combat VSM can have its own pitfalls, however, as a larger project in Central Australia demonstrates. The Ngaanyatjarra Pitjantjatjara Yankunytjatjara (NPY) Women's Council Petrol Sniffing Support Project commenced in May 1999 and received funding for four years. This was a regional project attempting to tackle petrol sniffing in the 26 member communities served by the Women's Council.

An evaluation of this project's impact in one community documents some of the difficulties encountered, as well as elements that were more successful (Shaw, 2002). When funding for a project was announced, residents of the communities involved had high expectations of what might be achieved. A decision to focus on youth work was made, with the initial youth worker

located in Kaltjiti on the Anangu Pitjantjatjara Yankunytjatjara (APY) Lands in South Australia. Two Indigenous staff, one from the Torres Strait who had qualifications in recreation, the other a senior community man, were appointed in late 1999.

The program met with difficulties almost immediately. The staff member who did not already live in the community was not found accommodation (despite previous assurances) until 18 months after the program commenced. He was forced to move between short-term lodgings, one of which was located at an outstation 50 kilometres from the community. NPY Women's Council does not own infrastructure in any of its member communities, meaning that it is largely dependent on community support for programs such as this. The non-resident staff member felt both non-Aboriginal staff and also community members showed little support for the petrol sniffing intervention. For instance, the project was dependent on other organisations to pay young people participating 'top up' money on their CDEP, which in some cases did not occur. The NPY Women's Council had made a decision to work through Anangu authority channels rather than through non-Aboriginal staff. Ironically this served to alienate the non-Aboriginal staff who argued that they were only approached with requests to provide assistance, often at the last minute.

All young people were targeted by the project, not just those known to be sniffing petrol. This was seen as a more sustainable approach than targeting only sniffers. Nevertheless (similar to the experience of others) staff found it difficult to engage chronic petrol sniffers in activities. A range of activities were offered such as basketball sessions, running a radio show and land management trips. Young people started attending gradually. Subsequent programs included a music program (problematic because it involved expensive equipment which might be ruined if not used carefully) and a youth week involving sport, discos and media. Basketball games run in the evenings were particularly successful due to support from community members. Other activities are described in Shaw's report (2002).

Community tensions around the program came to a head when one young man threatened another participant with a knife—the young man's family was angry with the worker for involving police in this situation. A community meeting was held with the Coordinator and Chairwoman of NPY Women's Council and the community agreed to provide various forms of assistance to the program for a seven week trial period; however, again this support did not eventuate. The worker felt that the program had 'achieved moments of working well' but that overall it did not achieve the aim of enhancing the community's capacity to meet the needs of young people (Shaw, 2002).

Evaluation of this program (Shaw, 2002) concludes that it is very difficult to implement sustainable recreation and youth programs in communities with large numbers of long-term sniffers, some of whom may be violent or brain-damaged. Shaw concludes that chronic sniffers tend to participate erratically, if at all, in activities. In communities of this nature, a core group of participants is difficult to establish and workers are more likely to be exposed to a risk of violence. In other places where more sniffers are intermittent or experimental it is easier to recruit young people to activities, and hence youth work or recreation-based programs are more likely to be effective.

Another possible unintended consequence of introducing a youth worker into a community is that community members may feel relieved that it is now someone else's job to work with difficult young people (Shaw, 2002). Shaw argues, therefore, that in communities with high levels of chronic sniffing, strategies such as gaol penalties for sniffing, or replacement of petrol with Avgas, should be implemented in favour of placing youth workers. Where youth activities are provided, this should occur in time-limited blocks, with communities only taking on a permanent youth worker when they have capacity to support this person. In addition, expectations of such activities in stopping petrol sniffing should be realistic.

A more positive experience involving recreation programs is documented in Docker River, a remote Aboriginal community in south-western Northern Territory where a bout of petrol sniffing coincided with a period when no organised activities were available for youth (Fietz, 2005). A volunteer worker had left the community, the youth facilities had been vandalised and at times even the school was without any teachers. In this activity void, 'sniffer' parties organised by an influential adult became an attractive recreational option for a proportion of the community's youth. When a program of recreational activities was instituted in the community, the adult at the centre of petrol sniffing activities became resentful and hostile, threatening youth workers and participants alike (Fietz, 2005, p. 3). However, the program led to a decline in petrol sniffing in the community, with no experimental sniffing and chronic sniffers using at reduced levels.

Youth work in remote communities is challenging and demanding. Workers must be skilled in tasks as diverse as operating four wheel drive vehicles, hunting, painting, crisis support, sporting activities, and applying for grants (Fietz, 2005). Activities must be run during evenings, nights, on weekends and through holidays. Shaw (2002) recommends a model where workers take a week's compulsory leave each three months to avoid becoming burnt out and exhausted.

### *7.3.2 Recreational programs in urban and regional settings*

The Victorian Inquiry into Inhalation of Volatile Substances (Parliament of Victoria Drugs and Crime Prevention Committee, 2002) argued that recreation programs should form part of an overall strategy to combat VSM. However, little research is available that documents VSM-associated recreation or youth programs in urban or regional contexts.

As in the remote context, there is some evidence that recreation programs in urban or regional settings are most effective with young people whose VSM has not become entrenched. A program in urban Victoria found recreation programs to be particularly effective in working with younger (12–14) people (Submission from DASWest cited in Parliament of Victoria Drugs and Crime Prevention Committee, 2002, p. 407). In Melbourne, Drug and Alcohol Services in the West (DASWest) outreach workers offer recreational activities for only one or two young people at a time and thus are able to engage young people whose challenging behaviours make it difficult for them to take part in more mainstream activities. Evidently this is a resource-intensive approach.

In Alice Springs the ‘BushMob’ program has adapted principles of adventure therapy to suit the needs of young (mostly Indigenous) people who are highly marginalised and find it difficult to engage with the service system. Drug use, particularly VSM, is common among this group. The program began when young people at a youth refuge expressed a wish to ‘go bush, get away from the trouble’. The organisation is run by a board of young people, families and professional staff. Up to 10 young men or women are taken on trips which last from one to four days. Activities involve rock climbing, canoeing, hiking and camping, in the belief that activities must be exciting if they are to compete with VSM: risk taking is channelled into high-energy activities. Staff are trained in youth work, adventure skills and first aid, and community elders are encouraged to join in. Young people are provided with follow-up support for up to six months (BushMob, 2005).

A small group of mothers in Townsville whose children were using volatile substances combined forces, calling themselves ‘Mothers Crying Out for Help’ (Walmbly, 2003). These women ran (among other activities) cultural camps for young people. One such camp entailed taking 15 young people and 11 supervising adults to the Laura Cultural Festival in Cape York, where they gained ‘more appreciation of their Aboriginality, their identity and increased awareness of the value of their culture and tradition’ (Walmbly, 2003, p. 4). No one absconded from the camp and all young people remained VSM-free for its duration.

An interesting urban approach to VSM diversion was that taken by Brisbane Youth Services (BYS). BYS received funding to conduct a participatory action research project with young homeless people who used inhalants. The project initially focused on consulting with members of the target group over their reasons for VSM. Circus training was then offered to participants, followed by workshops in graffiti art, MC-ing and hip hop skills. The final part of the project consisted of community education and advocacy on policy responses to VSM (Cheverton et al., 2003). The project received funding from Brisbane City Council as well as a grant from Arts Queensland, the latter enabling participants to produce a public performance. Eight young people learned circus and aerial theatre techniques. Others participated in costume design, script writing, stage management, assisting with directing, music, lighting and set design. As in the Bush Mob project described above, activities such as abseiling (wall work) were selected that offered some of the thrills and risks of VSM:

Wall-work was chosen because it has the same thrilling, high-risk attraction of the activities young homeless people often engage in. [This is] similar to the rationale for the use of adventure-based learning. Despite many barriers, the participants demonstrated creativity and commitment. Performing with Rock ‘n’ Roll Circus gave young people an opportunity to demonstrate their skills and contribute to the development of youth arts culture in Brisbane (Cheverton et al., 2003, pp. 39–40).

The evaluation records comments made by participants indicating their enjoyment of the activities, for instance that they got a ‘good rush’, ‘learnt heaps’ and that it was ‘good to show the public

that we are not just ratbags and always running amuck' (Cheverton et al., 2003, p. 25). Some participants stopped using drugs (seven out of the eight performers remained sober through the project). A review of this project concludes that interventions with inhalant users should:

1. avoid stigmatising participants by advertising activities as targeting drug users;
2. include drug users and non-drug users;
3. involve young people at all stages of project development;
4. focus on skill and capacity development, rather than deficits;
5. offer various activities and levels of participation;
6. provide support services;
7. include risky and exciting activities;
8. support young people in developing friendship networks;
9. offer a goal (such as a performance) for people to work towards; and
10. ensure ongoing support (Cheverton et al., 2003).

Also in Brisbane, the Get Real Challenge (GRC), an activity-based intervention for Indigenous youth in the Brisbane inner-city operated by the Indigenous Youth Health Service, has been independently evaluated (Butt, 2004). The GRC targets young people who used volatile substances and other drugs as well as others experiencing homelessness or educational difficulties.

The GRC was developed in response to young people's claims that boredom and a limited sense of cultural connection were factors in their VSM. Activities such as rock climbing, horse riding, attending dance performances and fishing have been offered. Low staff to participant ratios enable workers to build rapport with young people (Butt, 2004). From May to December 2003, 24 young people participated in GRC activities, attending an average of three activities each.

Alongside recreational activities the GRC aims to provide education on effects of drug use and link young people to other services. Initially all activities included an education component; however, staff observed that participants were less likely to return to the program where their first involvement included extensive time devoted to health education. Education was subsequently provided more informally and on an individual basis.

Evaluation of GRC included psychological assessments of participants at intake and at endpoint, although only six young people completed both pre- and post-intervention assessments (Butt, 2004). These six participants had been involved in GRC for an average of four months and attended an average of five events each. Of the six participants, three met criteria for DSM-10 diagnosis

of harmful or dependent substance use at program commencement. At endpoint assessment, however, none were assessed as having an inhalant use disorder. Fewer reported suicidal thoughts at endpoint than at their first assessment and rates of diagnosed clinical depression also dropped. In addition to pre- and post-intervention psychological testing for these six participants, staff provided anecdotal information on outcomes for 18 participants. Staff observed that of participants who had been using volatile substances at program intake, 83% had ceased VSM at the end of the evaluation period (Butt, 2004). The evaluation concluded that benefits accrued by participants included improved school attendance and interest, reduced levels of crime and aggression, and improved motivation to change drug use. The evaluation found that factors affecting positive program outcomes included the ability of staff to develop rapport with young people, provision of substance-free enjoyable activities, provision of counselling, involvement of families, peer reinforcement of behaviour change, and referral to services to deal with other problems. At the time of evaluation this program did not have ongoing funding.

### 7.3.3 *Matching activities with people*

Providing programs that are sufficiently interesting to young people to compete with VSM can be a challenge. Brady argues that recreational programs can help to combat petrol sniffing, provided that they offer a range of ‘exciting, daring, even dangerous recreational activities to counter the risk-taking behaviour of sniffing’ (1984, p. 56). Pool tables and dart boards after school, she remarks, are simply not enough. A Central Australian station where young people are taught to break in horses, on the other hand, provides opportunities for risk and a real alternative to sniffing. Young people should of course be advised of risks associated with any activity in which they participate (suggestions as to how youth workers may protect themselves from negligence charges is available in Inner Urban Youth Interagency VSM Working Group, 2005).

Mosey reports a worker’s experience that young people need activities which ‘actively and positively engage’ them (1997, p. 20). To illustrate the difference between recreation and ‘youth development’, the youth worker drew the distinction between watching and actually making a video. Recreational programs must be relatively unstructured and informal if they are to attract the participation of young people at risk of sniffing (Stojanovski, 1999).

Young people report that their VSM-associated hallucinations are strongly influenced by popular culture. People use hallucinations to imagine they are participants in video games, movies and television (MacLean, 2007a). Exploring new media technologies appears to be a promising direction in some programs for young people who use volatile substances, both in urban and remote contexts. A multi-media program in the remote community at Mutijulu trained a group of young people working under the guidance of community elders to produce culturally appropriate educational resources including interactive DVDs, books and audio material. Participants were able to put this experience towards a Certificate 4 in Broadcast Media (McFarland, 1999).

#### *7.3.4 Targeting programs at groups of volatile substance users*

It is evident that chronic sniffers are a particularly hard group to engage and are sometimes reluctant to participate in events which they perceive as being organised ‘for the good kids’ (Osland, 1998, p. 25). Community members interviewed by Roper and Shaw saw recreational programs as being more useful as preventative measures, appealing more to would-be sniffers and experimental sniffers than to current regular sniffers. Sniffers in one community were discouraged from participating in sport due to concerns they might succumb to ‘sudden sniffing death’. Meanwhile, young people who were not petrol sniffers in the community reported being frightened of the sniffing group due to their unpredictable behaviour and preferred not to engage in recreational activities with them (Senior et al., 2006).

This presents a problem as other evidence suggests that programs specifically targeted at those who misuse volatile substances can act as a reward or incentive to sniff by making sniffing a criterion for eligibility; such programs are not recommended (Shaw et al., 1994). The Get Real Challenge described above (Butt, 2004) includes not only those currently misusing volatile substances but also other young people considered to be at risk of VSM or who are out of the education system, homeless or using other substances. The intention behind this is to avoid labelling participants as ‘chromers’ or making VSM attractive as a means to access programs.

Recreational programs are not a substitute for treatment and rehabilitation programs for chronic sniffers. Indeed, they may be of most value when they exist alongside more intensive programs for chronic sniffers, as happened in 1991 at Maningrida. Here, a family worker provided a counselling and support service to chronic sniffers and their families and a recreation officer offered programs of activity to a broader section of youth (Brady, 1989).

Fietz (2005) argues that recreational programs in remote Indigenous communities should be targeted for gender and age differences, and provide separate activities for initiated men. Employing both male and female youth workers enabled the community at Docker River to offer options that suited the different needs of young men and young women. This program recognised a need to provide different activities for young men who have gone through cultural initiation, respecting their new status within the community. Men who had been through traditional Indigenous initiation ceremonies were also recruited to coach and lead activities for younger people.

### **7.4 Education, training and employment**

Young people who leave school in the early secondary years are at increased risk of subsequent harmful drug use, though whether both early school leaving and drug use are due to underlying developmental factors is unclear (Loxley et al., 2004). The association between regular VSM and school non-completion is strong (Bates et al., 1997; Best et al., 2004; Chadwick et al., 1990; Flescher et al., 2002). Among a group of volatile substance using clients attending a youth drug treatment service in Melbourne, 69% were found to be either delayed in or have dropped out of school (Lane, 2005).

If, as is frequently argued, boredom is a major reason for VSM, it is logical that keeping young people engaged in day programs—be they school, training or employment—will at least to some extent quarantine their drug use. Alternative education facilities are required for young people who find it difficult to maintain an engagement with the mainstream system, a problem which frequently co-occurs with VSM. Some young people who have left school during a period when they were using inhalants feel unwelcome to return (Walmby, 2003). Flexible and supportive school re-entry options are also required (Butt, 2004).

There are few opportunities for secondary education or training in remote Australian Indigenous communities. Even where schools are available, attendance is low and educational outcomes are extremely poor (Collins, 1999). Mosey found that people in remote communities believe that the lack of opportunities for education contributes to their young people's sniffing. Increased sniffing has been observed during times when schools are closed; on weekends and during school holidays (Senior et al., 2006). Interestingly, when one community did manage to get secondary education on site, most of the sniffers began attending (Mosey, 1997).

The Yarrenyty Arltere Learning Centre (formerly known as 'Detour') was established specifically to address VSM in Alice Springs town camps. Young people involved with the project have successfully re-integrated into school (Senate Community Affairs Reference Committee, 2006). Components include a primary school, art program for adults, accredited adult education courses, alcohol and other drug outreach and a range of other health and welfare services and programs. Tangentyere Council, which manages the program, identified the following aspects of the Learning Centre as central to its success:

- long-term government funding;
- community ownership and direction;
- effective partnerships between Indigenous and non-Indigenous people; and
- management by an Indigenous organisation with appropriate infrastructure and expertise (Senate Community Affairs Reference Committee, 2006, pp. 84–5).

Canadian treatment programs make remedial education a central part of their programs. Each treatment centre has a teacher. Some outstation programs offer training opportunities as part of their overall program (Barrett 1994). Kavanagh (2006) has argued that a similar educational component should be incorporated in Australian treatment programs.

Care must be taken to ensure educational programs are age appropriate for participants. A program in Mt Isa, Queensland, included placement of young people who were regular users of volatile substances in a primary school to assist them with numeracy and literacy. Many of the young people involved were actually of high school age. No teacher was assigned by the education authority to deal with the particular needs of this group and the young people involved dropped out (Polsen & Chiauzzi, 2003).

A skills training approach was implemented at Yirrkala in 1984, under the auspices of the Northern Territory Education Department. A teacher and an Aboriginal liaison officer worked with a group of 17 petrol sniffers who had not been attending school regularly, giving them the opportunity to develop work skills by engaging in tasks such as lawn mowing, house cleaning and repair jobs. The program is reported to have resulted in both improved school attendance and reduced sniffing among the youths concerned (Commonwealth of Australia 1985, Evidence, p. 1365).

However, without the prospect of future employment, there is little incentive for young people from remote communities to complete education. Senior provides an example of a young woman who completed Year 12 outside her remote community but commenced sniffing petrol on her return when there was nothing for her to do there (Senior et al., 2006).

Training schemes are resource intensive. A plan to train young people as youth workers implemented by the Institute for Aboriginal Development and the NPY Women's Council failed for lack of support structures available to students (Shaw, 2002).

Paid employment is very important in giving people (Aboriginal and non-Aboriginal) a sense of self-worth and an incentive to reduce the use of harmful drugs. Burns concludes that the introduction of Avgas in conjunction with employment programs was critical to success at Maningrida. Four months after Avgas was introduced at Maningrida in 1993 (along with employment and skills training programs), petrol sniffing ceased. When 27 sniffers from this community were interviewed in 1992, only 7 per cent were employed; however, in 1994 the proportion had risen to 63 per cent (Burns, Currie et al., 1995).

One innovative approach is that adopted in Cape York where young people were engaged in a behaviour modification program (James, 2002). As part of this program, young people were involved in an enterprise distilling and selling eucalyptus oils.

## 7.5 Summary

### *Education*

- Australian educational authorities continue to pursue a policy of not providing education about VSM under school-based drug education programs, on the grounds that such education may inadvertently encourage experimentation with inhalants. Some information about volatile substances is provided through occupational health and safety training.
- In England and Wales, by contrast, schools are required to include information about solvents in drug education programs. The UK Government is currently funding a five-year follow up study of the impact of school-based drug education on subsequent drug use.
- Education targeting known inhalant users is unlikely to be effective if it adopts scare tactics. However, education highlighting the potential impact of VSM on valued activities, such as capacity to play sport, may be useful.

- Education about inhalants for parents and professional people likely to come into contact with VSM, such as teachers and welfare workers, and for communities where VSM occurs, has been shown to be of value.

#### *Using Indigenous culture*

- Several innovative programs have been developed using Indigenous cultural practices as vehicles for combating VSM, in particular through art forms, story telling and restoration of important caring relationships. The impact of such activities is difficult to determine, and few initiatives have been evaluated.

#### *Recreation and youth programs*

- Recreational activities that are sufficiently exciting to provide an alternative to sniffing, and are available out of hours, can help to prevent VSM, although they are unlikely to attract chronic users.
- Successful programs have included measures to avoid stigmatising drug users; have focused on skill and capacity development; included a range of activities and opportunities for risk-taking; and have been offered on a flexible basis. Such activities should be practicable, utilise local resources, and be sustainable.
- Youth and recreation programs should not be the primary component of an anti-VSM program in communities with high proportions of chronic sniffers.
- Youth work in remote communities is challenging and requires diverse skills, such as operating 4WD vehicles, hunting, painting, crisis support, sporting activities, and applying for grants. Activities must be run during evenings, nights, on weekends and through holidays.
- Little research has been conducted into the impact of recreational programs on VSM in urban and regional centres. However, there is some evidence to suggest that they are most effective with young people among whom VSM has not become entrenched.

#### *Education, training and employment*

- Skills training, remedial education and employment have all been shown to contribute to reducing VSM.

## 8 Demand reduction III: Clinical management, counselling, residential and homeland programs

In the final section on demand reduction, we focus on interventions which, for the most part, are aimed at people who are already engaged in VSM. We review evidence covering clinical management of VSM, counselling and family interventions, residential treatment, and homeland (outstation) rehabilitation programs. In reality, these areas cannot be so neatly compartmentalised. Residential treatment, for example, will almost certainly involve both counselling and clinical management. We also raise the issue of care for people with acquired brain injury, and discuss evidence relating to the use of homeland centres (outstations) for addressing VSM in remote communities.

### 8.1 Clinical management of VSM

In 1987 Joseph Westermeyer, a psychiatrist, complained that little research was available to inform the clinician treating clients who misuse volatile substances. While studies since this time have improved our understanding of the various problems and pathologies that accompany VSM, Westermeyer's observation remains apposite.

International literature gives few grounds for optimism about treatment outcomes. Beauvais and Trimble, writing in the US, state that solvent users 'defy conventional treatment and prevention efforts' (1997, p. xi). Dinwiddie (1994) reviews approaches to treatment in the US for those whose inhalant use has become long-term or chronic, and concludes that outcomes are very poor. Strategies believed to work with other drug users are often observed to be less effective among those who use inhalants (Beauvais, Jumper-Thurman, Plested, & Helm, 2002; Mackesy-Amiti & Fendrich, 1998). Others have argued that any treatment success is likely to be attributable to the fact that VSM generally declines as people age, rather than the intervention itself (Sakai, Mikulich-Gilbertson, & Crowley, 2006). Very little outcome data is available with regards to any treatment modality other than residential rehabilitation (see 8.3 below).

Many young people undergoing treatment for VSM exhibit a range of complex behaviours and are at acute risk of harm. A Canadian treatment provider reported that 'the fear of having to protect a young person who was high on solvents was hard to describe' (cited in Charles & Luca, 1999, p. 67). Over 80% of 550 respondents in a survey of Canadian drug treatment practitioners assessed their inhalant using clients' prospects of recovery as only 'poor' or 'very poor' (Beauvais, Jumper-Thurman et al., 2002). Nonetheless there are also accounts in the literature from people who have found it deeply fulfilling to be involved with young people at a critical junction in their lives. Some practitioners regard VSM intervention as an opportunity to learn to work cross-culturally, valuing both Indigenous and non-Indigenous approaches (Charles & Coleman, 1999; Charles & Luca, 1999).

In the United States, the Substance Abuse and Mental Health Services Administration has issued advice for VSM treatment. The document recommends that VSM treatment is likely to be lengthier and more expensive than treatment required in response to other forms of drug use. The authors acknowledge that their advice to clinicians is ‘based on limited experience and research, primarily with disadvantaged Native American and Hispanic populations in Southwestern and Midwestern United States’ (Substance Abuse and Mental Health Services Administration, 2003, p. 5).

The most detailed Australian VSM guidelines available concern care for people who are engaged with drug treatment or child protection services in Victoria (Department of Human Services, 2003). While the guidelines argue that a similar approach to other drug treatment should be taken, they also observe that the young age of many involved must be considered in formulating a treatment strategy. The guidelines stipulate that responses to VSM should be aimed at promoting abstinence and that services must not allow clients to use inhalants on their premises. The Office for Aboriginal and Torres Strait Islander Health in conjunction with the National Health and Medical Research Council is, at the time of writing, currently developing national clinical guidelines for the management and treatment of VSM.

A protocol outlining the respective roles of police and welfare agencies has been produced in Victoria to support the implementation of legislation providing police with powers to intervene in VSM (State Government of Victoria, 2004). In Queensland, again in conjunction with new legislation, guidelines have been produced to assist organisations in responding to VSM (Inner Urban Youth Interagency VSM Working Group, 2005). These guidelines provide advice as to how agencies might engage young people who use volatile substances: suggestions include providing easy treatment access, addressing multiple problems and networking with other agencies. Flow charts for responding to emergency situations involving VSM are provided.

In view of the complex and serious problems believed to co-occur with regular VSM, most treatment advice is that a particularly thorough client assessment is recommended (Department of Human Services, 2003; Jumper-Thurman, Plested, & Beauvais, 1995; Substance Abuse and Mental Health Services Administration, 2003). This should include assessment of family function, co-occurring poly-drug use, co-occurring mental health disorders and a thorough medical examination including screening for cognitive impairment which may impede treatment. Clinicians have recommended screening of clients receiving VSM treatment for depressive or anxiety disorders, given their high prevalence in inhalant-using populations (Evren, Barut, Saatcioglu, & Cakmak, 2006). The effect of the person’s family and social situation on their drug use should also be assessed. For chronic users an assessment of neurological impairment is advised, with follow up testing to check for improvement during treatment (Brouette & Anton, 2001; Jumper-Thurman et al., 1995).

Several assessment protocols are outlined in the literature (Central Australian Rural Practitioners, 2003; Department of Human Services, 2003; Richardson, 1989; Shaw et al., 2006). A measure for assessing adolescent inhalant use dependence severity is also described (Ogel, Askoy, Topuz, Liman, & Coskun, 2005).

The requirement for detoxification from VSM is contested; some consider it unnecessary due to the short acting nature of VSM-induced intoxication (Department of Human Services, 2003). Others argue that adverse effects of VSM on brain function endure for weeks beyond the period of acute intoxication and that treatment should not commence until cognitive impairment has diminished (Jumper-Thurman et al., 1995).

No pharmacotherapies are available to treat inhalant dependence, although anti-depressive and anti-psychotic medications are often used to treat co-occurring mental health concerns (Dinwiddie, 1994).

Individuals who misuse volatile substances appear also to have higher rates of mental illness than would be found in the general community. Dual diagnosis services are required to provide concurrent treatment (Butt, 2004). Homelessness also frequently accompanies long-term VSM; however, many housing services will not accept people who are currently substance affected into their programs. The possibility of past sexual abuse should also be considered. Many people engaged in VSM treatment are poly-drug users and treatment attention should not focus solely on one substance (Dell, Dell, & Hopkins, 2005). Some researchers argue that as intensive VSM is a marker of 'global vulnerability' (Wu et al., 2004) or part of a 'risk behaviour syndrome' (Kurtzman et al., 2001), interventions should address the constellation of risks or associated problems, rather than focusing specifically on VSM. Due to the range of problems experienced by many users, a coordinated service response is critical (Lubman, Hides, & Yucel, 2006).

Some studies argue that developing therapeutic relationships with young people who use volatile substances is particularly important as a precursor to any useful intervention (Butt, 2004; Inner Urban Youth Interagency VSM Working Group, 2005). These kinds of relationships often take time to establish. Part of establishing supportive relationships is to approach users with respect and patience and to be clear about what the service is able to offer and the expectations made of service participants (for instance, not to use drugs in the premises). Inhalant users frequently lead rather chaotic lives and find it difficult to attend set appointment times. An outreach approach to treatment and intervention is therefore frequently appropriate (Department of Human Services, 2003).

The efficacy of group interventions is unclear. Young people who use inhalants have reported being taunted by other drug users attending treatment services (MacLean, 2004). Thus caution should be taken when introducing a young person with a history of VSM to group therapy with other drug users (Substance Abuse and Mental Health Services Administration, 2003). It is important that workers avoid further stigmatising them and ensure, as far as possible, that they are treated with respect within drug treatment services. Avoiding labelling young people as, for instance, 'chromers' is one way to do this (Butt, 2004).

It is important that treatment includes supporting people to participate in diversionary recreation activities. Some users of inhalants have poor living skills and many programs include components to assist young people with hygiene, nutrition and interpersonal skills, as well as encouraging them to attend school or training where this is feasible (Substance Abuse and Mental Health Services Administration, 2003).

Brady (2004) encourages the use of brief interventions by health care professionals in responding to disclosure of alcohol and other drug misuse by Indigenous people. Similarly, Lynskey (2003) observes that brief interventions by doctors have been effective in targeting other forms of drug abuse by adolescents, and ought therefore to be implemented where young people are discovered to be misusing volatile substances. A training package for VSM brief intervention has been developed in Queensland (see National Inhalant Abuse Taskforce, 2006, p. 42).

As indicated earlier, some volatile substance misusers require hospital treatment. One article advises on treatment of patients admitted to acute psychiatric units for inhalant-associated psychotic disorder (Hernandez-Avila, Otega-Soto, Jasso, Hasfura-Buenaga, & Kranzler, 1998).

In the past, when petrol included lead, treatment sought to remove organic lead stored in the bodies of sniffers. The main hospital treatment used was chelation therapy, which involved the use of a chemical compound (a chelating agent) which binds heavy metals. However, as leaded fuel has been phased out in Australia, chelation therapy has little role in the current care of petrol sniffers.

Much of the health care provided to petrol sniffers in remote areas occurs in community clinics. The Central Australian Rural Practitioners Association (CARPA) Standard Treatment Manual (Central Australian Rural Practitioners, 2003) includes advice for health staff on acute and ongoing care of petrol sniffers. It lists the three main acute health issues for sniffers as fits, strange or violent behaviour and, in the longer term, weakness and infections. The manual advises airway protection in the case of acutely affected sniffers and rapid evacuation to a facility where ventilation is available, and provides advice on options for sedation if required.

Recommendations for clinical management and treatment of VSM among Indigenous youth include investigating the young person's sense of cultural identity and belonging, ensuring access to culturally appropriate services, role models and opportunities to learn about and participate in cultural activities (Butt, 2004). A 'resiliency and holistic' approach to VSM treatment for Indigenous youth has been adopted by Canadian treatment centres (Dell et al., 2005). This entails the use of Indigenous and Western techniques to strengthen clients' spirit or 'inner resiliency'.

In the NT, legislation now authorises courts to sentence people to mandatory treatment (see section 10.1). Researchers have found little empirical evidence to indicate the effect of sentencing people to mandatory alcohol and other drug treatment on subsequent drug use or offending (Pritchard, Mugavin, & Swan, 2007). It is therefore important that outcomes for clients in the NT be closely monitored.

One aspect of rehabilitation which appears to have been neglected in the literature is the need for intensive physiotherapy for chronic volatile substance misusers, to enable them to restore wasted muscles, regain coordination, and overcome symptoms of neuropathy. Peggy Brown, of the successful Mount Theo Petrol Sniffer Program, advised a meeting of families working with sniffers to 'work them hard: walking up the river bed a lot, wearing rucksacks on their backs with stones in' (Winbarrku Outstation, 1994).

## 8.2 Counselling, family interventions and after-care

Counselling is the form of drug treatment most commonly provided in response to VSM by Australian drug and alcohol treatment services (National Inhalant Abuse Taskforce, 2006), although there is little research literature on which to build an evidence-base for VSM counselling interventions. US treatment protocols, cognisant of possible effects of long-term VSM on the user's brain, advise that counselling sessions be short and 'a slow rate of recovery' anticipated (Beauvais, 1997; Beauvais, Jumper-Thurman et al., 2002; Substance Abuse and Mental Health Services Administration, 2003). However, many young people using inhalants have not consumed these substances for long enough to acquire serious brain injury; indeed one study which tested both volatile substance users and other drug users for neuropsychological impairment on admission to residential treatment found no cognitive difference between these groups (Sakai et al., 2006).

Early psychological and psychiatric approaches to VSM treatment are outlined in Morton (1987). A 'biopsychosocial' approach to VSM therapy is advocated by McCartney (1999). This entails attention to transference and counter-transference in the therapeutic relationship, behavioural and cognitive approaches to increasing self-awareness and self-control, and negotiating the inside–outside boundary.

Victorian VSM management guidelines recommend a range of counselling and support approaches. The guidelines advise that clients should be clearly advised of the harms to which they are exposing themselves. Motivational interviewing (to enhance the client's enthusiasm to change their behaviour), self-monitoring strategies (assisting them to achieve greater insight) and relapse prevention (recognising and managing their response to triggers for use) should form part of any long-term individual counselling strategy. Recommended therapeutic techniques include goal setting, developing contracts with clients in relation to consequences of inhalant use, and skill development in managing emotions, decision making and communication. Family-based interventions are also advised, as are assertive outreach and follow-up, and provision of diversionary activities and other means to ameliorate social isolation. Clients should be referred to other drug or mental health services as needed and co-occurring poly drug use should also be addressed (Department of Human Services, 2003, pp. 21–27 & 35–37).

Some research considers how counselling might be provided for Indigenous clients in remote settings. San Roque et al. note that one of the primary needs of petrol sniffers is for 'psychological or personal attention, i.e. the chance to be listened to and "tell their story"' (1999, p. 20). Researchers found that among a sample of ex-petrol sniffers in a remote community in northern Australia, the most commonly identified reason for giving up petrol sniffing was advice or encouragement from family members (Burns, Currie et al., 1995). The authors conclude that interventions addressing petrol sniffing might support the role of Aboriginal families.

Franks (1989), a member of the Healthy Aboriginal Life Team (HALT), has provided a useful account of the application of counselling techniques in two Central Australian communities. Central to the HALT approach was the combination of individual and family counselling

with community development techniques. The twin goals were to promote the community's capacity to control petrol sniffing at the community level, and to help kin networks to regain their capacity to care for and control their members. The particular role of counselling in this context was to 're-include the sniffers within the extended family group from which they had become alienated' (Franks, 1989, p. 17). Another important aspect of the HALT approach was the presence in the team of a respected Aboriginal member, who worked in close cooperation with the counsellor.

Franks describes two types of individual counselling, as well as family counselling. *Simple support counselling* was used where the family was strong and could mobilise support; the counsellor's role was one of helping persons to reach decisions and giving encouragement. Where family functioning had become distorted, *in-depth counselling* was appropriate. Counselling involved 'validating feelings; clarifying the problems; setting and prioritising goals; and actively moving towards the achievement of these goals by agreeing to undertake specific tasks' (Franks, 1989, p. 19). Individual counselling was used in conjunction with *family counselling*, in which the Aboriginal member of the team played a major role, identifying family and community supports which could be mobilised.

Other evidence supports the importance of including families in counselling interventions with Indigenous volatile substance users. Mosey (2000) adapted HALT's technique of 'family mapping', and drew also on work by Orford and his colleagues on 'family coping' (Orford et al., 1998). Mosey's intervention aimed to reduce the shame families felt about petrol sniffing. She concluded that when families functioned better overall, the drug-using member would also become more able to alter his or her own behaviour. In an evaluation of a petrol sniffing program in Kaltjiti, family counselling was viewed as a successful means of making families more responsive to the needs of petrol sniffers (Shaw, 2002).

Outside the Indigenous context, family therapy has been recommended (McCartney, 1999). In 1982 a psychiatrist argued that families of children misusing volatile substances shared certain pathological dynamics. Therapeutic interventions with 41 families resulted in 26 young people ceasing VSM (assessed at six months post-treatment) (Framrose, 1982). Another study reported by Morton (1987) found that individual treatment combined with provision of diversionary activities and family intervention was more effective than individual treatment alone.

Working with users of volatile substances poses particular challenges, sometimes leading to despondency on the part of workers. A youth worker contributing to the Victorian Inquiry into Inhalation of Volatile Substances argued that few options were available to him in encouraging and assisting clients to modify their inhalant use:

A twelve, thirteen, fourteen year old person possibly doesn't even have the cognitive development to undergo insight-based therapy. That's how a lot of our services are funded. We really don't have anything else to offer these people. (Quoted in Youth Affairs Council of Victoria Inc., 2001, p. 12)

Volatile substance users are likely to require intensive after-care and monitoring for relapse (Butt, 2004; Jumper-Thurman et al., 1995). In one Canadian residential treatment centre an after-care plan is devised before clients are admitted and community members are required to pledge support to the young person concerned (Dell et al., 2005). Efforts should be made to assist young people to cope with peers who continue to use volatile substances.

After-care is often provided through an outreach model, focusing on monitoring and reinforcing skills learned in treatment. Shaw et al. suggest that after-care services for people in remote communities should include:

- personal support for individuals;
- working with families to reintegrate the client into community life; and
- making changes to communities so that there are alternative activities available, and fewer people sniffing. (Shaw et al., 2006, p. 45)

### 8.3 Residential treatment and rehabilitation

The 1985 Senate inquiry into VSM in Australia opposed the establishment of residential rehabilitation programs, claiming that most Indigenous people did not want sniffers removed from their communities to urban residential facilities. Other commentators have argued that residential services are required in light of the frequently chaotic family situations of inhalant users, and peer reinforcement of drug use (Jumper-Thurman et al., 1995). Successive coronial inquests into deaths associated with petrol sniffing in South Australia, Western Australia and the Northern Territory have also exposed and condemned the dearth of residential facilities. Partly in response, governments in Victoria, SA and the NT have recently moved to establish residential treatment facilities for Indigenous clients, although only the NT facilities will focus exclusively on inhalant users (National Inhalant Abuse Taskforce, 2006).

#### 8.3.1 Residential programs in North America

By far the most developed residential models of VSM treatment are to be found in Canada, where nine centres target First Nation young people who use inhalants<sup>5</sup>. All the programs are run by Native Americans and young people receiving treatment are aged between 12 and 26, with 112 treatment beds available across the country. A detailed discussion of assessment procedures, detoxification programs, counselling, rehabilitation, case management and treatment settings in North American treatment centres is provided in a report issued by the Centre for Remote Health (Shaw et al., 2006).

Treatment at Canadian Centres consists of a blend of Native American and Western treatment strategies aiming to increase young people's resilience. The philosophy guiding two centres is outlined in an article by Dell, Dell and Hopkins (Dell et al., 2005). The centres seek to improve both individual young people's capacities to cope with adversity and at the same time to bolster supports within local communities. Other centres appear to follow a similar approach, although

<sup>5</sup> Transcripts of interviews with young people, a family member, an elder and treatment staff involved in a residential program in Calgary, Canada, are available in Charles & Coleman (1999).

the structure of programs varies. Some separate males and females, while others do not; some have set intake times, others admit young people whenever a vacancy arises. In the past, people generally stayed at treatment centres for six months but a new four month program has been introduced after staff felt that young people were becoming bored (Dell & Graves, 2005).

The Canadian treatment centres are linked by membership of the Youth Solvent Addiction Committee (YSAC), a body which provides training and support as well as collating information about best practice in solvent abuse treatment (Youth Solvent Addiction Committee, 2003).

In 2006 a delegation from Central Australia visited Canadian centres in order to consider their suitability to the Australian context (Kavanagh, 2006). The group concluded that factors leading to the success of Canadian VSM treatment centres included:

- Funding—centres are funded at approximately \$123,000 per bed per annum with additional grants available on meeting occupancy requirement. This allows a staff/client ratio of 3:1. A centre providing psychiatric and solvent abuse treatment has 14 beds and 45 staff.
- Indigenous ownership and management—most centres have educated and committed Indigenous directors and boards of management. The role of Indigenous culture in healing is highly valued within the centres.
- Program structure—programs are well-structured providing a holistic approach to VSM including attention and love as well as boundary setting for youth. All programs are accredited and incorporate both Western techniques and Indigenous approaches. Young people acquire life skills while in treatment. YSAC supports collaboration between the centres.
- Staff—centres are staffed by a diverse range of professionals who receive regular and ongoing training.
- Emphasis on importance of formal education—most are funded to employ a full-time teacher and 70% of participants return to school after treatment (Kavanagh, 2006).

Kavanagh then identifies a number of barriers in the way of implementing similar service models in Australia, noting, firstly, that at present few well educated Australian Aboriginal staff would be available to take up positions of responsibility within funded centres; secondly, that it would be difficult to find locations for centres where youth could not easily leave the program, yet where a skilled workforce was available. Remote area Australian Indigenous youth, she adds, may be reluctant to attend centres located a long way from their communities, while low literacy levels may make it difficult for some Australian young people to participate in activities. Finally, after-care arrangements would have to be made available in young people's home communities (Kavanagh, 2006).

Some studies of North American residential VSM treatment outcomes are not encouraging. Coleman et al. (2001) report that 56 of 78 young Indigenous Canadians relapsed after discharge

from residential treatment for inhalant use (the article does not detail how long after discharge this assessment was made). Dinwiddie (1994) reviews disappointing studies of residential treatment for inhalant users. Shaw et al. cite a study (Health Canada, 2005) indicating that poor client outcomes were due in part to a lack of follow-up and after-care for clients (Health Canada 2005, cited in Shaw et al., 2006, p. 48).

A few other studies report higher success rates. The Nimkee NupiGawan Healing Centre collects client follow-up data indicating that six months after treatment 82% of clients in 2000 and 95% of clients completing the program in 2001 reported abstinence from VSM (Dell et al., 2005). Treatment completion would appear, however, to be low, ranging from 11% to 62% of clients across the Canadian centres (Health Canada 2005, cited in Shaw et al., 2006, p. 48). Dell et al. (2005) make the interesting point that some young people require more than one stay within a residential program before they are able to desist from VSM. Treatment re-entry, they suggest, should be viewed as part of a process, rather than as 'recidivism'. They argue also that increasing family involvement in treatment (through recognition of family members in funding formulas) has improved Canadian treatment centres' client completion rates (Dell et al., 2005).

Another recent study (Sakai et al., 2006) followed 34 male sniffers admitted to residential treatment centres in the US two years after treatment. On introduction to the program, 14 met DSM criteria for inhalant abuse or dependence; at follow up only one did so. The study found, however, that people admitted for VSM treatment were more likely than those admitted for other drug use to have developed subsequent conduct disorders. Other researchers have found that individuals who used inhalants directly before treatment, are hospitalised during treatment or are generally unmotivated in treatment, have the poorest treatment outcomes (Coleman et al., 2001).

### *8.3.2 Australian residential programs*

In Darwin, the Council for Aboriginal Alcohol Program Services (CAAPS) conducted a residential program between 1985 and 1990, under which male petrol sniffers were admitted alongside clients admitted for alcohol misuse. An independent evaluation found no evidence of program effectiveness with respect to petrol sniffers (d'Abbs, 1990, pp. 47–9). CAAPS subsequently stopped admitting petrol sniffers because of inadequate funding (Northern Territory of Australia Coroner's Court, 1998).

More recently, CAAPS has again received funding to provide residential treatment services for volatile substance users, this time through an eight week program that includes literacy and numeracy, recreation activities such as rock climbing and sport, health and hygiene education and cultural information (Central Australian Aboriginal Alcohol Program Services, 2007).

In Alice Springs the Drug and Alcohol Services Association (DASA) has provided a detoxification program for inhalant users for two years. Of 20 young people attending the program (one stayed for a month), nine were regarded as having 'very positive outcomes' (Drug and Alcohol Services Association, 2006). DASA has now been given additional government funding to run an

eight-week residential program for users of volatile substances. This program provides treatment involving negotiated case-management, and structured after-care for people aged 17 years and over. Clients receive a medical examination within 48 hours of admittance and a series of counselling sessions based around a program developed by DASA. Group activities and outings include nutrition information, relaxation and exercise. DASA plans to assist young people to access numeracy and literacy education (Drug and Alcohol Services Association, 2006). A family member is allowed to accompany each client. Some clients also attend Bush Mob camps or outings (see section 7.3.2). Clients can be mandated by courts to attend the program but may also attend on a voluntary basis (Central Australian Youth Link-Up Service, 2006a).

One remote treatment centre that has achieved impressive results is the Mt Theo Petrol Sniffing Program in Central Australia, described below under ‘Homeland centres (outstations)’.

#### **8.4 Care for people with acquired brain injury (ABI)**

Few options are available for long-term care of young people who have become severely disabled as a result of petrol sniffing or other forms of VSM, and their care generally falls to family members (Shaw et al., 2006). It is likely to be inappropriate to accommodate these people within short-stay residential treatment programs.

Shaw et al. (2006) propose that as the nature of VSM-associated disability varies considerably according to the severity of brain injury and the range of chemicals involved, care needs of individuals will vary widely. Care for people who continue to use volatile substances is particularly difficult. Community-based models for care of disabled young people include accommodation within aged care facilities (often considered a poor option), training local rehabilitation staff, and disability respite facilities (Shaw et al., 2006). A representative of the NPY Women’s Council told the Senate Select Committee that her organisation had no option but to house one young person, disabled as a result of petrol sniffing, in a motel room in Alice Springs, paying \$400 per day for a carer to look after him (Vicki Gillick cited in Senate Community Affairs Reference Committee, 2006). Shaw et al. argue that additional local services are urgently needed in communities with chronic petrol sniffers.

In urban areas it is more likely that people may be referred to services dealing specifically with ABI for assessment. Nonetheless, this group have poorer treatment outcomes than others with a history of VSM and many are likely to require long-term supported accommodation or residential care.

#### **8.5 Homeland centres (outstations)**

Homeland centres, or outstations as they are also known, have been seen as offering a means to combating petrol sniffing in Indigenous communities in two ways: first, as a primary preventative measure, in that families who move to homeland centres are less likely to be plagued by substance misuse; and second, as a remedial centre to which petrol sniffers can be sent for a time in the hope that they will mend their ways.

The 1985 Senate inquiry into VSM pinned great hopes on the homelands movement, describing it as ‘the only apparent solution to petrol sniffing in the long term’ (Commonwealth of Australia Senate Select Committee on Volatile Substance Fumes, 1985, p. 200). It did point out, though, that the homelands movement entailed problems of its own, notably with regard to provision of primary health care and educational facilities. Today, while some Indigenous families continue to prefer living in homeland centres to larger settlements, the suggestion that these centres constitute a potential solution to VSM in Indigenous communities is no longer being seriously promoted, except in those centres that house designated treatment or rehabilitation facilities, such as Mt Theo (see 8.5.4 below).

Use of homeland centres for petrol sniffer rehabilitation received strong support from the Petrol Link-up team (Shaw et al., 1994), which argued that outstations gave young people a chance to ‘get away from petrol and to become involved in more constructive activities’, and at the same time allowed communities a break from petrol sniffers. Removal of sniffers to outstations was also seen by the Petrol Link-up team as performing a symbolic role as a ‘statement by the community that petrol sniffing is not acceptable’. Sending young people to outstations reasserted the power of adults over young people. As one Pitjantjatjara man put it: ‘They are not big men—I am a big man and I tell them what to do’ (cited in Shaw et al., 1994, p. 15).

Outstations are important to Indigenous communities for cultural reasons. Travelling or moving to significant locations is often seen by Aboriginal people as a solution to substance misuse problems as ‘the land itself is understood to nurture and heal those who live upon it and partake of its resources’ (Brady 1995, p. 1494). Outstations have also often been the preferred strategy of communities (Divakaran-Brown & Minutjukur, 1993; Mosey, 1997).

Intjartnama outstation is one example of a cultural model for intervention into substance misuse. Elva Cook, together with her late husband, started caring for alcohol-affected people at Intjartnama outside the community of Hermannsburg around 1988 and took in petrol sniffers some time later. The program operated as an ‘Aboriginal family group’, utilising a bi-cultural approach combining Aboriginal cultural values and the family kinship system, with European therapeutic communities:

Recovery is achieved though helping the person to think about five aspects of healing: care for family, care for self, care for land, place and travelling, care for *Tjukurpa* (dreaming) and care of spirit ... (Cook, Cook, & San Roque, 1994, p. 42)

Another outstation was described by Bryce et al. (1991) as operating on a ‘work model’. The model involved rounding sniffers up and gaining parental permission for their care at an outstation or other location with a bore, where they were nurtured and put to work so ‘their lungs and noses will forget petrol’ (1991, p. 60). These programs were usually run by a husband and wife team, who sometimes received funding for wages, fuel, vehicle costs and food. Girls and boys were usually segregated. The programs were popular because they gave communities respite from sniffers, safe in the knowledge that sniffers were in the care of kin. Bryce et al.

interviewed people running these programs, who reported great satisfaction in teaching young people hunting skills. Bryce et al. did not comment on the success rate of these programs, although they did report that only a few months after one husband and wife team at Pipalyatjara failed to secure funding to keep 15 boys at their outstation, all the boys involved were in jail at Port Augusta.

Other positive accounts of the effects of spending time at an outstation may be found in the literature. Evaluation of a ‘dry out camp’ at Yalata and Oak Valley where sniffers spent 3–12 months showed that after attending the camps many young people became involved in positive community activities, helping the night patrol and attending school instead of sniffing (Sputore et al., 1997). Another project at Yalata involved ex-sniffers working with current petrol sniffers—a process that reportedly enhanced the ex-sniffers’ self-esteem. A program in Far North Queensland where young people were taught skills for working with horses is described in the Senate Community Affairs Reference Committee’s report on petrol sniffing (2006, p. 88).

Despite their popularity and apparent successes, providing services in remote locations for young people with acute needs can be problematic. The literature suggests that three issues must be addressed in the provision of homeland VSM programs: firstly, funding, infrastructure and associated resources must be provided; secondly, a sustainable model is required to balance the sometimes conflicting needs of funding bodies and communities; and, thirdly, community support and involvement are needed, both in the outstation program itself and in developing follow-up and after-care programs for those returning from outstations.

### *8.5.1 Infrastructure and resources*

Shaw et al. (1994) suggest that where outstation programs fail, they do so often because of lack of secure funding or through disputes over access to resources such as vehicles. A meeting of outstation managers at Winbarrku, organised by Petrol Link-up in 1994 (Petrol Link-up Project, 1994), concluded that outstations taking petrol sniffers needed support in relation to liaising with court and welfare bodies over referral and placement of young people, seeking funds, establishing income for young people in their care, and for facilitating information exchange. The meeting recommended that a permanent service be established to support outstations, a function now undertaken in Central Australia by Central Australian Youth Link-Up Service (CAYLUS).

The experience of Ilpurla illustrates some of the difficulties outstations have experienced in caring for young people exhibiting risky behaviours with minimal resources. Ilpurla is a cattle station where as part of a petrol sniffing program young people are taught skills such as breaking in horses and maintaining vehicles and stock equipment (Central Australian Youth Link-Up Service, 2006a).

In 1998, Northern Territory Coroner Warren Donald held an inquest in Alice Springs into the death four years earlier of a 14 year old boy at Ilpurla. The boy, a chronic petrol sniffer, had died from loss of blood after punching a window while intoxicated from sniffing. Earlier on the same

day, while still intoxicated, he had been placed at the outstation by a relative. Donald concluded that the boy had been accepted into the care of the outstation without any medical assessment of his condition, and placed under the supervision of people who lacked the necessary skills or training to identify or respond to his needs. Further, when the medical emergency occasioned by the boy lacerating his arm took place, the outstation did not have adequate communication facilities for obtaining prompt medical advice. (The outstation had no telephone, despite having been trying to obtain one for six years.)

The coroner found that the absence of trained medical personnel to conduct assessments prior to sending young people to outstations, along with inadequate communication technology at the outstation, contributed to his death (Donald 1998, p. 28). He concluded that, although outstations such as Ipurla provided temporary respite, both for sniffers themselves and for their communities, they were not adequately resourced to meet the often complex psychological and medical needs of chronic sniffers.

Despite the difficulties inherent in providing services at remote locations it is apparent that homeland centres used in responding to VSM must be not be located close to main roads or communities. They must be isolated to prevent people escaping and petrol or other drugs coming in (Mosey, 1997).

In Cape York, James has argued that there are significant problems associated with sending petrol sniffers to outstations, which, he contends, do not have facilities to give young people educational and life skills training they require (James, 2004, p. 9). Furthermore, he argues, as people cannot be self-sufficient on outstations, the model perpetuates passive welfare dependency. James proposes that young people who are asked to leave their communities as a result of petrol sniffing and associated behaviours be sent to appropriately paid and supervised host families in places where educational, training and work opportunities are available.

### **8.5.2 Sustainability**

Homeland centre or outstation program models cannot simply be transported from one community to another. Programs must be developed in accordance with the resources, energy and commitment levels of local communities (Senate Community Affairs Reference Committee, 2006). The support of elders is a critical element in all programs. Programs at outstations or homeland centres depend for ongoing viability on Indigenous people with appropriate relationships to the area being prepared to spend long periods of time away from their communities caring for young people.

Family members must also support the process. Walalkara, a homeland fifty kilometres from the community of Kaltkiti, was established in 1999 as a rehabilitation/respite centre for sniffers. The model used here was that families would accompany young people and spend two weeks with them at the outstation (Shaw, 2002). Family members were, however, reluctant to use the outstation, largely because they did not want to leave the community for an extended period. Similarly, an outstation for girls at Marla Bore failed due to lack of support from parents,

who ‘felt sorry’ for their daughters and brought them home (and sometimes other girls also) (Stojanovski, 1994).

Homeland centre or outstation programs tend to operate episodically, when needed. They may close for periods of time and this makes funding them difficult for bureaucracies. Some outstations or homeland centres previously providing care for petrol sniffers have closed in recent years. Reasons for these closures are not always clear and in many instances government-funded evaluations of programs are not made publicly available.

### *8.5.3 Availability of support and after-care in communities*

It is critical that after-care and a program of activities be available for people returning from outstations. The community at Mornington Island organised to send young people to camps on school holidays as a strategy to prevent petrol sniffing. The success of this program in reducing VSM among participants was undone when young people returned to the community where petrol was readily available (Senate Community Affairs Reference Committee, 2006, p. 20).

### *8.5.4 Mount Theo Outstation: a success story*

The program at Mt Theo is widely recognised as a unique success story in preventing petrol sniffing at its associated community of Yuendumu. Mt Theo has been taking petrol sniffers since 1994, under the care of Peggy Brown and her late husband. Yuendumu had 70 petrol sniffers at the time of program commencement but is now generally free of VSM. The program at Mount Theo has been documented by staff with long-term involvement (Preuss & Napanangka Brown, 2006; Stojanovski, 1999; Stojanovski, 1994).

Mount Theo is a sacred healing place with strong *Jukurrpa* (dreaming) (Campbell & Stojanovski, 2001). It is a considerable distance from the community and any main road, making it almost impossible for young people to leave without adult assistance. Sniffers and other young people at risk are taken there and looked after by tribal elders until they have recovered from the effects of sniffing. Activities at Yuendumu include gardening, Community Development Employment Program (CDEP), traditional activities and courses. After a month young people are allowed to return to their community of origin, but if they recommence sniffing they are immediately taken back to Mt Theo. While the program caters for all Walpiri young people, it has been particularly successful with children whose families were traditional owners for the area, because of their links to this country and their care during that time by family members (Stojanovski, 1994). As petrol sniffing has become far less prevalent the program has adapted. Mt Theo is now used as an alternative sentencing option for young people who would otherwise be charged with crimes and for people found misusing substances other than petrol. In 2007, 43% of clients were Walpiri young people not from Yuendumu and 74% were referred by courts or police as alternatives to incarceration or being charged (Mt Theo-Yuendumu Substance Misuse Aboriginal Corporation, 2007).

Although Mount Theo has received funding for some years, the program has always been very much owned and supported by Aboriginal people from the Yuendumu community (Saggers &

Stearne, 2007). Senior Aboriginal people run the programs and the relations they forge with young people are critical to the program's success. In the words of a program founder, Peggy Nampajimpa Brown:

I bin love the young people and make healthy. I bin care about. I bin ask all the church leaders to pray for young people and teenagers. I give them bushtucker, bush sultana, bush yam, goanna, kangaroo and wild turkey to make young people strong and healthy again (quoted in Campbell & Stojanovski, 2001, p. 9)

The success of Mt Theo should not be attributed to the outstation alone, but also to a range of complementary measures that have been implemented. These include working concurrently with all four Walpiri communities and Alice Springs agencies, the Jaru Pirrjirdi program (described earlier in this review), a seven day a week program of diversionary activities for young people in Yuendumu itself, and an 'education and outreach program' disseminating information about Mt Theo (Preuss & Napanangka Brown, 2006).

Staff have also stressed the importance of cooperative relationships between Aboriginal and non-Aboriginal people in running the program. Stojanovski provides this advice about sustainability for those wishing to establish a similar program:

While people like getting paid wages, wages do not carry the same weight and meaning as personal relationships. Wages will not keep my co-workers working through the difficult times. Emotional support and relationships of mutual obligation do ... This is what I really believe sustains our program. It is the love and the relationships that we hold for each other as co-workers and for our clients—the petrol sniffers. This is a difficult thing for governments to grasp. A structure like our program is easy to model and reproduce but the motivation care and love that holds it together is difficult to duplicate. My advice to people trying to set up similar projects is to sit down in a community for a long time, to build relationships, to never stop trying (Stojanovski, 1999, p. 26).

## 8.6 Summary

### *Clinical management of VSM*

- There is limited literature to guide clinical management of VSM, and much of what is available warns of poor outcomes compared with other substance misuse.
- Thorough client assessment is recommended, to include assessment of family function, co-occurring poly-drug use, co-occurring mental health disorders and a thorough medical examination including screening for cognitive impairment which may impede treatment. The effect of the person's family and social situation on their drug use should also be assessed. For chronic users an assessment of neurological impairment is advised, with follow-up testing to check for improvement during treatment.

- Some researchers argue that as intensive VSM is a marker of ‘global vulnerability’ or part of a ‘risk behaviour syndrome’, interventions should address the constellation of risks or associated problems, rather than focusing specifically on VSM. Many people engaged in VSM treatment are poly-drug users and treatment attention should not focus solely on one substance.
- The requirement for detoxification from VSM is contested. No pharmacotherapies are available to treat inhalant dependence, although anti-depressive and anti-psychotic medications are often used to treat co-occurring mental health concerns.
- Some studies argue that developing therapeutic relationships with young people who use volatile substances is particularly important as a precursor to any useful intervention. These kinds of relationships often take time to establish.
- Recommendations for clinical management and treatment of VSM focusing on Indigenous youth include investigating the young person’s sense of cultural identity and belonging, ensuring access to culturally appropriate services, role models, and opportunities to learn about and participate in cultural activities.
- The Central Australian Rural Practitioners Association (CARPA) Standard Treatment Manual includes advice for health staff on acute and ongoing care of petrol sniffers.

#### *Counselling, family interventions and after-care*

- Counselling is the most common form of intervention in response to VSM by Australian alcohol and other drug agencies, although there is little evidence to guide intervention approaches. Inclusion of users’ families in counselling interventions is recommended in both Indigenous and non-Indigenous contexts, as is the need for outreach and provision of diversionary activities.
- Published guidelines for working with inhalant users stress the need to use counselling techniques such as motivational interviewing, self-monitoring strategies, relapse prevention and goal setting, and skill development in areas such as managing emotions, decision-making and communication.
- Difficulties in working with VSM users, particularly in employing cognitive therapies with very young users, and assisting clients to change their behaviour, can lead to despondency among workers.
- Volatile substance users are likely to require intensive after-care and monitoring for relapse. After-care is often provided through an outreach model, focusing on monitoring and reinforcing skills learned in treatment.

#### *Residential treatment and rehabilitation*

- Several Australian states and territories have recently established residential facilities for VSM.

- The most developed residential treatment models for VSM are found in Canada, where treatment consists of a blend of Native American and Western treatment strategies aiming to increase young people's resilience. Most Canadian facilities are well funded, operate under Indigenous control, have structured programs, and emphasise formal education as a means of returning clients to active participation in society.
- Outcome studies of Canadian programs point to mixed results. No recent evaluations of Australian residential programs have been published.

#### *Care for people with acquired brain injury (ABI)*

- Few options are available for long-term care of young people who have become severely disabled as a result of petrol sniffing or other forms of VSM, and their care generally falls to family members.

#### *Homeland centres (outstations)*

- The strategy of sending sniffers to homeland centres, or outstations, has been used by some Aboriginal communities as a means of culturally appropriate banishment, inculcating behaviour change, and providing relief for communities themselves.
- To be successful, such programs require adequate resources, a sustainable model of intervention, and community involvement both in the outstation programs themselves, and in providing after-care programs in the communities.
- Homeland centres are not equipped to meet the complex medical and psychological needs of some VSM users.
- The use of homeland centres for VSM intervention has also been criticised on the grounds that they do not provide clients with skills necessary to engage with the wider society, such as education and training.

## 9 Harm reduction

Harm minimisation has underpinned the Australian National Drug Strategy since 1993 (Single & Rohl, 1997). Harm minimisation supports a mix of three kinds of strategies: supply reduction, demand reduction and harm reduction. The last of these is by far the most contentious as its focus is not on reducing drug use *per se* but rather the adverse consequences it brings. Because it includes harm reduction strategies alongside efforts to reduce drug use, harm minimisation is an approach that rests on an acceptance that total prevention or eradication is not always possible, and that therefore health educators and others should include strategies to minimise harmful consequences.

Harm reduction strategies rarely feature in the response to VSM. This is for four reasons. First, some Indigenous communities are uncomfortable with the idea of implementing strategies which do not have drug abstinence as their primary goal (Brady, 1995, 2004; Gray, Sputore, Stearne, Bourbon, & Stremple, 2002; Pearson, 2001). Second, the young age of many inhalant users makes it hard to imagine them as capable of managing risks associated with drug use and thus many people believe that adults have a responsibility to intervene. Third, substances such as petrol or spray paint are considered so harmful and unpredictable in their effects as to make risk reduction impossible. Finally, many harm reduction measures tend to attract political controversy, making some politicians unwilling to endorse them. In the case of VSM, this was graphically demonstrated in Victoria in 2002 by a media furore about ‘supervised chroming’ and the subsequent political reaction (see below). In light of the high risk of serious, even fatal, consequences of VSM, we believe that harm reduction has received insufficient attention in Australian responses to VSM.

Two main strategies for VSM harm reduction may be identified from the literature. The first pertains to ensuring that the settings in which VSM occurs are such that risks for users are reduced as far as possible; the second covers practices which users themselves may adopt when sniffing in order to minimise risk of adverse consequences.

### 9.1 Harm reduction in drug use settings

A proportion of VSM-associated deaths occur because of characteristics of the settings in which these substances are misused. For instance, injury may occur because no responsible person is present and able to call an ambulance when someone passes out from the effects of inhaling toxic chemicals. Other deaths occur when people become intoxicated in hazardous places, for instance near a busy road. Two measures are therefore available to reduce harms in drug use settings: altering the environments where people use drugs, or providing supervised spaces where young people may use volatile substances.

Few examples of the first measure are available. Police in Wyndham (Victoria) cleared out undergrowth at a known chroming ‘hotspot’ so that young people were less easily able to hide away from view (Parliament of Victoria Drugs and Crime Prevention Committee, 2002, p. 397).

In Canada the grandmother of a sniffer requested that old dumped cars where young people were hiding in order to sniff be removed (cited in Charles & Coleman, 1999, p. 41).

Almost all participants in a study of homeless young people who chromed in Brisbane indicated that they wanted a safe place where they could chrome and feel reassured that someone was looking out for their welfare (Cheverton et al., 2003). In only a few instances are efforts to establish relatively safe places where people can use volatile substances documented in the literature.

One such effort attracted considerable negative media attention in Victoria in 2002. Berry Street's Child and Family Services provides residential care for young people on protective care orders who cannot live with family. One component of the organisation's harm minimisation approach to substance misuse was to allow young people in their care who could not be persuaded to desist from chroming to do so under observation where their safety could be monitored by staff. The agency argued that monitoring young people who were chroming enabled staff to ensure they took breaks from inhaling and to call medical assistance if necessary. Most importantly this strategy enabled staff to stay connected to young people so that eventually they might persuade them to substitute other activities. This approach to VSM was one among many described in the draft report of the Victorian Parliamentary Inquiry into Inhalation of Volatile Substances (Drugs and Crime Prevention Committee, 2002).

From here it found its way into the media headlines in Victoria in early January 2002. The 'supervised sniffing' story evoked such outcry that the Victorian Premier Steve Bracks quickly announced that any agency which failed to forbid VSM on its premises would lose its funding. Attention to the issue quietened only after the then minister for Community Services was demoted. Some commentators argued that media attention to supervised chroming was part of a broader campaign to discredit harm minimisation (Mendes, 2002; Rayner, 2002). For Bessant (2003), the story incited a 'moral panic' by resonating with other unresolved community concerns. The lasting effect of the furore has been to make governments in Australia wary of supporting harm reduction approaches to VSM. Although some drug treatment providers have argued that young people are placed at additional risk of harm through the banning of harm reduction responses, and that harm reduction can be consistent with a worker's duty of care (Fairbairn & Murray, 2004), the National Inhalant Task Force 2006 policy framework, *National Directions on Inhalant Abuse* (2006), which has been endorsed by the Ministerial Council on Drug Strategy, does not mention supervised inhalant use as a policy option.

Two other recommendations relating to settings in which inhalant use occurs are reported in the literature, namely:

1. Avoid sniffing in small, secret, enclosed spaces such as caravans and cupboards, as reducing oxygen supply may lead sniffers to lose consciousness.
2. Avoid VSM in areas near busy roads or where they may fall while intoxicated. As with all forms of drug use, use is safer if someone is around and sufficiently sober to call an ambulance if necessary (Brady, 1985; Jacobs, 2005).

## 9.2 Harm reduction practices for individuals

A less controversial harm reduction strategy than facilitating supervised use is to advise drug users of means by which they may lessen the likelihood of death or injury as a result of VSM. Western Australia has endorsed an approach which includes provision of harm reduction education for regular and chronic users of volatile substances (Drug and Alcohol Office (Western Australia), n.d.).

In Victoria a harm-reduction education resource called the ‘Chroming Wheel’ was produced some years ago by the Youth Substance Abuse Service (Youth Substance Abuse Service, n.d.). Several harm reduction practices are described in the literature (Bellhouse, Johnson, & Fuller, 2001; Brady, 1985; Cheverton et al., 2003; Jacobs, 2005). These include:

1. Choosing small containers with small surface areas from which to inhale products. For instance if petrol is sniffed from a wide-mouthed container less air will be inhaled at the same time. Bottles with small mouths produce less risk of overdose than do plastic bags.
2. Being aware of the risk of suffocating on the container which has been used to administer a volatile substance. Petrol sniffing-associated deaths in Indigenous communities have occurred when people have gone to sleep with a tin propped against their nose, and in some instances also with blankets over their heads, continuing to sniff fumes until they die from asphyxia (South Australia Coroner’s Court, 2002). Spray paints are frequently inhaled from plastic bags. The practice of covering the head with a plastic bag to intensify exposure to fumes is extremely risky. Inhalant users should be encouraged to select small bags or bottles to reduce the risk of passing out with a bag over their head or inadvertently covering their mouth and nose.
3. Choking on vomit is a significant cause of VSM-associated mortality. Anyone who witnesses a person pass out as a result of VSM (or due to any other cause) should be encouraged to ensure the person can breathe and to call an ambulance as soon as possible.
4. Using other drugs concurrently with inhalants (particularly drugs such as alcohol, heroin or cannabis which are also central nervous system depressants) increases the risk of overdose.
5. Precautions should be taken against accidental burning as a result of igniting petrol or other volatile substances. Cigarettes should not be smoked while inhaling these products.
6. Anyone affected by volatile substances should not be suddenly alarmed, or engage in violent physical exercise, as sudden death appears more likely when sniffers’ heart rate is elevated.
7. Some people have given sniffers milk to line and protect their stomachs (Cheverton et al., 2003). While there is no research evidence to support this strategy, it may well improve overall nutrition and certainly functions as an expression of care.

Finally, another contentious harm-reduction approach is to advise young people that some volatile substances (for instance, substances that are liquid at room temperature such as glues) are less dangerous to sniff than others. The British Advisory Council on the Misuse of Drugs has concluded that the overall danger of volatile substance misuse is such that messages of this nature are not generally advisable, particularly as the evidence regarding relative safety is weak (Advisory Council on the Misuse of Drugs, 2000). Of all substances in VSM products, toluene (frequently a component of sniffable glues, spray paints and paint thinners) is most damaging to the central nervous system (Kurtzman et al., 2001). However, spraying butane and propane gases (such as lighter fuels) directly into the mouth appears to be a leading cause of sudden sniffing death and should be strongly discouraged. In the UK, VSM-associated mortality data shows this form of administration is associated with more deaths than any other (Field-Smith et al., 2006).

Young people in one Australian study indicated that they found it hard to implement harm reduction strategies because their principal objective in using volatile substances was to become acutely intoxicated (MacLean, 2006). Nonetheless some groups of young people who use volatile substances have developed their own harm minimisation measures. A study of incarcerated Aboriginal volatile substance users in Western Australia found that these people practised harm minimisation through their choice of inhalant; rejecting, where possible, petrol in favour of what they saw as less harmful inhalants such as 'Kwikgrip' (Sandover et al., 1997). The study found that young people in remote areas where other volatile substances are hard to procure sniffed petrol, while those in urban areas preferred more readily accessible toluene and glues. Petrol sniffers in the Sandover et al. study also alternated sniffing through the nose and mouth to reduce harm, and sniffed in public places or in company so that help could be sought if necessary.

### 9.3 Summary

- The application of harm reduction approaches to VSM is controversial, insofar as its primary objective is not reducing drug use *per se*, but rather reducing risk of adverse consequences among those who choose to engage in VSM. However, precisely because VSM does entail such a high risk of serious, including fatal, consequences, there is a strong case for making inhalant users aware of harm reduction options.
- Two main harm-reduction strategies are available: minimising risk associated with the *settings* in which VSM occurs, and adopting practices when sniffing that reduce the risk of accidental harm.

#### *Harm reduction settings*

- Options relating to settings include: (1) avoiding small, enclosed spaces where reduced oxygen supply may lead to loss of consciousness; (2) avoiding areas near busy roads, or other places where an accidental fall may have dangerous consequences; (3) being in the presence of someone who is not intoxicated, and who can therefore seek help if necessary. Another strategy—supervising people who will not otherwise desist from VSM while they inhale—is highly contentious

#### *Harm reduction practices*

- Options relating to sniffing practices include: choosing small containers with small surface areas from which to inhale; avoiding covering the head with a plastic bag to intensify exposure; avoiding concurrent use of other drugs.
- Precautions should be taken against: asphyxia resulting from sniffers falling asleep with containers against their faces or blankets over their heads; choking on vomit; accidental burning; suddenly alarming sniffers.
- Whether or not sniffers should be advised that some inhalants are more or less dangerous than other inhalants is a matter of controversy.

## 10 Law enforcement

While it is now widely accepted, at least throughout all Australian jurisdictions, that VSM is primarily a health and welfare rather than a criminal justice issue, it still poses challenges for law enforcement agencies, including police, courts, and custodial facilities. This is so because inhalant users are at high risk of harming themselves and others, damaging property and threatening family and community wellbeing. Further, in the absence of adequate law enforcement capacity, health and welfare agencies may find it difficult to intervene in VSM.

At the same time, VSM poses a number of difficulties for law enforcement agencies. Many inhalants are cheap and readily available, and possession of them is not in itself an offence. Legal sanctions are therefore limited, particularly as many inhalant users are legally minors. Petrol sniffing tends to occur in remote Indigenous communities where police services are often inadequate and referral options virtually non-existent. VSM also tends to occur sporadically. It is not uncommon for media reports to focus attention on VSM in a particular locality, leading to some sort of (usually stop-gap) resources being made available, only to find that by the time this happens the problem has all but disappeared or moved elsewhere. Finally, for all the anguish generated by episodes of VSM, the number of persons involved in the practice is invariably small and, as an issue competing with other demands on limited law enforcement resources, it usually ranks low on local priority lists (Gray et al., 2006).

In recent years, several Australian jurisdictions have attempted to improve the capacity of law enforcement agencies to respond to VSM by amending police powers and other laws and regulations and, in some instances, making additional resources available for law enforcement. With the exception of one jurisdiction—Queensland—no evidence of the effectiveness or otherwise of these changes has been published, although some anecdotal reports have been tabled, most of them at coronial inquests or parliamentary inquiries. In this chapter we document the current status of law enforcement responses to VSM and review the limited evidence regarding implementation and outcomes.

### 10.1 Legislation governing police powers to intervene in VSM

As a report prepared for the Australasian Centre for Policing Research (2004) points out, legislation governing law enforcement and VSM falls into two categories: police powers with respect to inhalant users, and restrictions on the sale and supply of volatile substances. In this review, the latter are covered in the Supply Reduction section, under 5.4.1. Changes to police powers with respect to inhalant users are outlined here.

Nowhere in Australia is possession or use of inhalants a statutory offence although, as we describe below, some Aboriginal community councils and organisations have enacted by-laws or regulations prohibiting VSM. The question of whether or not VSM should be made an offence has been debated at various times. The Commonwealth Senate Select Committee of

Inquiry into Volatile Substance Abuse concluded in 1985 that it would be inappropriate to treat inhalant use as a crime, in part because such a policy would possibly have a counter-productive affect of adding to the danger of an already rebellious act, and partly because, in the absence of rehabilitation facilities, it would have no lasting deterrent effect.

In 2002, the Victorian Parliamentary Drugs and Crime Prevention Committee again examined the case for and against making VSM a criminal offence. It too recommended against doing so, citing views expressed in several submissions, and drawing on an earlier examination conducted by the Justice and Law Reform Committee of New Zealand in 1997 (Parliament of Victoria Drugs and Crime Prevention Committee, 2002). The NZ Committee argued that sufficient criminal sanctions already existed without making VSM itself a criminal matter; that in view of the ages of many inhalant users, the welfare of the child should be the paramount consideration; and that the imposition of a conviction for inhalant use would be unlikely to have a deterrent effect, and would probably have detrimental consequences, including encouraging users to shift to other drugs and/or other places. (In the UK, as previously observed, introduction of legal sanctions against glue sniffing and a large-scale public education campaign was followed by an *increase* in deaths from butane and aerosol inhalation (Dinwiddie, 1994, p. 928).) The Victorian Parliamentary Committee also noted that the Victorian Police, among other organisations, did not support criminalisation of VSM.

The National Inhalant Abuse Taskforce (NIAT) noted in its 2006 report (subsequently endorsed by the Ministerial Council on Drug Strategy) that where no specific legislation relating to VSM exists, legislation governing public intoxication, child welfare and consumer protection may be applicable. Two jurisdictions—South Australia and Western Australia—have recently amended existing laws to make them more applicable to VSM. In South Australia in 2004 petrol, defined to include ‘any volatile liquid containing hydrocarbons’, was declared to be a drug under the *Public Intoxication Act 1984*, thereby enabling police to detain a person intoxicated in a public place by VSM, without that person being charged with an offence (South Australia, 2004). In addition, the South Australian *Graffiti Control Act 2001* prohibits the sale of cans of spray paints to persons under 18 years, and requires retailers of spray paints to keep them securely locked or under similar constraints (South Australia, 2001). Under an amendment to the same Act introduced in May 2007, the same restrictions have also been extended to wide-tipped marker pens (South Australia, 2007).

In Western Australia, the *Protective Custody Act 2000* empowers police to intervene in episodes of VSM by seizing and destroying intoxicants, and by apprehending and detaining intoxicated persons in order to protect the latter’s health and safety or prevent them from damaging property (Drug and Alcohol Office (Western Australia), n.d.). The Criminal Code (Section 206) has also been amended to specify an offence of supplying intoxicants ‘to people likely to abuse them’, with an intoxicant defined as ‘a drug, or a volatile or other substance, capable of intoxicating a person’—excluding liquor (Drug and Alcohol Office (Western Australia), n.d., p. 15).

Three jurisdictions—the Northern Territory, Queensland and Victoria—have gone a step further and enacted new legislation specifically addressing VSM. The new laws embody a ‘civil apprehension’ approach to policing, and in the main give police two kinds of powers:

1. to search for and confiscate volatile substances which the officer believes are being used for intoxication; and
2. to apprehend and detain persons intoxicated by VSM.

In Victoria, the *Drugs, Poisons and Controlled Substances (Volatile Substances) Act 2003* authorises police to search a person aged less than 18 years whom the police suspect to be in possession of volatile substances or VSM-related items, or a person regardless of age whom police suspect intends to provide a volatile substance to a person aged less than 18 years for purposes of inhalation. The Act also empowers police to seize volatile substances or items used for inhalation, and to detain persons aged less than 18 years suspected of inhaling or intending to inhale. Those detained are to be released into the care of a ‘suitable person’, which can include parent, carer, guardian, other responsible family member, or health or welfare worker. If police are unable to find a suitable person, they can release or detain the person, if necessary at a police station, but not in a police cell (Australian Drug Foundation, 2004).

An Interagency Protocol, introduced in conjunction with the new legislation, sets out the respective roles of police and other agencies, including alcohol and other drug services, child protection services, Indigenous services, and out-of-home care services, and attempts to integrate their respective activities (State Government of Victoria, 2004).<sup>6</sup> The Protocol identifies 11 options available to police, namely to:

- call an ambulance;
- release the young person if they are no longer affected by inhalant misuse;
- provide the young person, parent or guardian with education and referral information;
- connect the young person with a parent, carer, guardian or other suitable person;
- return the young person to their Out of Home Care Service, if a statutory client;
- contact the Department of Human Services Child Protection Intake Team if there are risks or protective concerns for children under 17 years of age as defined under the relevant act;
- notify the appropriate authorities if it is known that the young person is under a guardianship, child protection, residential order or other statutory order; and
- connect the young person with an alcohol and drug agency.

The Victorian legislation was originally subject to a sunset clause taking effect on 30 June 2006. However, under the *Drugs, Poisons and Controlled Substances (Volatile Substances)*

<sup>6</sup> The Interagency Protocol can be downloaded from <http://www.health.vic.gov.au/drugservices/downloads/interagency.pdf>.

*(Extension of Provisions) Act 2006* it has been extended for a further two years to allow for completion of an evaluation.

The Queensland Police Powers and Responsibilities and Other Legislation Amendment Bill 2003, which took effect in July 2004, followed a similar approach to that adopted in Victoria. As in Victoria, police powers to apprehend and detain persons believed to be engaging in VSM were expanded, without making VSM an offence (Giskes, 2003). The amendments were introduced on a trial basis in five selected sites—Mount Isa, Cairns, Townsville, inner Brisbane and the Brisbane suburb of Logan. It has since been extended to two other locations: Rockhampton and Caboolture. The Queensland legislation also provided for a trial of a ‘places of safety’ scheme, under which, at the five selected sites, designated facilities were identified for the care of persons intoxicated by VSM. The impact of the scheme was to be evaluated over the trial period by the Queensland Crime and Misconduct Commission (CMC).

Late in 2005 the CMC reported its findings on the amended legislation and the places of safety scheme respectively in two separate reports (Crime and Misconduct Commission (Queensland), 2005a, 2005b). The CMC concluded that the amended police powers had served a useful role and should be extended to cover the whole state of Queensland, subject to modifications. On the negative side, the evaluation reported a widely held perception that, as a result of the new legislation, police had been given primary responsibility for addressing VSM without either sufficient authority or adequate operational guidelines, and without mechanisms to ensure that follow-up health and welfare activities were taken up by the appropriate agencies and not left with the police.

To address these deficiencies, the CMC made 26 recommendations, including calls for police powers to be further extended to authorise police to compel a person apprehended to give their name and address and, in the absence of an available place of safety, to hold persons apprehended for up to four hours for their own wellbeing. The CMC also proposed the introduction of an ‘alert’ system under which, following initial apprehension and referral by the police, the Department of Child Safety would be notified, and obliged to initiate appropriate assessment and case management procedures. (The CMC’s evaluation of the places of safety model is outlined below.)

The most comprehensive legislative initiative to address VSM is the NT *Volatile Substance Abuse Prevention Act 2005*, which took effect in February 2006 (Northern Territory of Australia, 2006). The new Act incorporates similar provisions relating to search, seizure and supply of volatile substances to those in the amended Victorian and Queensland legislation. As in Victoria and Queensland, the legislation stops short of making inhalant misuse an offence. It also contains two provisions not found in the other jurisdictions: provision for mandatory treatment for persons deemed to be at risk of severe harm from inhalant misuse, and provision for ‘management areas’, under which communities can gain legal recognition for locally-specific laws relating to the possession, supply and use of volatile substances (Legislative Assembly of the Northern Territory, 2004).

Under the NT Act, it is also an offence to supply a volatile substance to another person if the supplier ‘knows or ought to know’ that the other person intends to inhale the substance or supply it to a third person to inhale.

The NT Government has also committed \$10 million over five years to a program of new and expanded services that includes treatment facilities for VSM in both Alice Springs and Darwin; government-employed clinical teams based in Alice Springs and Darwin to provide support for remote health services in managing VSM-related problems; support for upgrading outstations in Central Australia that regularly accept petrol sniffers on a diversion basis; funding for six youth case workers, to be based with a non-government organisation; and non-recurrent funds for a series of bush camps.

In May 2006 the ‘civil apprehension’ approach received national endorsement from the Ministerial Council on Drug Strategy (MCDS), through the latter body’s formal acceptance of a report entitled *National Directions on Inhalant Abuse*. The report outlined a set of ‘Guiding principles for inhalant legislation’ based on the following core principles:

- The primary aim of legislation should be to protect the health and welfare of inhalant users.
- Legislation should not criminalise the behaviour of inhalant users and should protect their civil rights.
- Communities may be best placed to make their own decisions and rules about inhalant use issues in their community.
- It may be appropriate for the legislation to include the power to confiscate inhalant products to protect the health and safety of an inhalant user.
- It may be appropriate for the legislation to include the power to apprehend and detain an inhalant user to protect his/her health and safety or to link him/her to treatment.
- Persons selling volatile substances have a responsibility not to sell in situations where they suspect the person will inhale the product.
- The dangerousness or pattern of use of some volatile substances may warrant the introduction of specific sale restrictions.
- The legislation should be enforced in keeping with its primary objectives of protecting the health and welfare of inhalant users.
- Legislation should be supported by a commitment to adequately resource its implementation.
- The operation of legislation should be monitored and reviewed to ensure that its objectives are being met and to assess its impact (National Inhalant Abuse Taskforce, 2005).

## 10.2 Places of safety

The expansion of civil apprehension powers to deal with young people intoxicated by VSM has in turn generated a need for suitable facilities or agencies where persons apprehended can be released into care. In Victoria, the Northern Territory, Queensland and Western Australia, this may include a responsible family member or other adult, a health or welfare agency, or a designated place of safety. Detention in a police cell is either prohibited (Victoria, Queensland) or permissible only as a last resort (Western Australia, Northern Territory).

Drug treatment services are sometimes co-opted to receive people apprehended by police. In Gippsland, Victoria, the Youth Substance Abuse Service (YSAS) was funded to provide a place of safety. A rights and responsibilities document was developed by staff and clients to set ground rules for the operation of the facility. Nineteen young people were taken by police to the service after an episode of chroming during its operation between January 2004 and August 2005 when short-term funding expired (Murphy, 2005). As well as a crisis response, YSAS provided an ongoing program of activities for young people. Evaluation of the program (Murphy, 2005) identified many benefits including a reduction of visible chroming in public places, and improved communication and cooperation between local service providers including Indigenous organisations and police.

In Queensland, the Crime and Misconduct Commission (CMC) evaluated the trial of ‘places of safety’ provisions in five sites (Crime and Misconduct Commission (Queensland), 2005a). The CMC gathered data on all VSM-related contacts recorded by police, places of safety, ambulances or hospitals at the five sites between 1 July 2004 and 31 March 2005. A total of 2210 such contacts were recorded, 1848 of them at places of safety. These contacts were accounted for by 316 clients, indicating a high rate of repeat admissions (with 50 clients having 10 or more admissions during this period). Of the 316 clients, 64% were Aboriginal and 60% were male.

The CMC concluded that, while the places of safety had succeeded in providing a service for youths affected by inhalants, they had not fulfilled their intended goal of providing a referral option for police. Only 120 referrals during this period (7% of the total) came from police, compared with 807 self-referrals and 806 referrals by outreach services.

## 10.3 Community by-laws relating to VSM

A number of Aboriginal communities and organisations have imposed their own legal sanctions on VSM. By-laws under the *Pitjantjatjara Land Rights Act 1981* make it an offence to possess or supply petrol for the purpose of inhalation on the Anangu Pitjantjatjara Yankunytjatjara (APY) Lands in South Australia (Commonwealth Department of Health and Family Services, 1998, p. 108). Coronial inquests conducted into deaths related to petrol sniffing in the APY Lands in 2002 and 2004, however, exposed the inadequacies of legal sanctions in the absence of effectively supported and enforced sentencing options (South Australia Coroner’s Court, 2002, 2005) or of local safe places to which young people intoxicated from inhalants could be taken. The 2002 inquest heard that there were virtually no facilities in place throughout the APY

Lands to supervise community service orders, much less to refer chronic sniffers for treatment (South Australia Coroner's Court, 2002). The 2004 inquest was informed by the Department of Correctional Services that additional staff had been appointed in the APY Lands and a new service model developed for case management of inhalant users who had received sentences.

In Western Australia, communities in the Ngaanyatjarra Lands have prohibited petrol sniffing under community by-laws enacted under Section 7, 1(g) of the *Aboriginal Communities Act 1979* which enables communities to make by-laws for '... the prohibition, restriction or regulation of the possession, use or supply of alcoholic liquor or deleterious substances' (Gray et al., 2006). For several years persons convicted of sniffing petrol were fined or (in the case of non-juveniles) sentenced to up to three months in custody, the latter option being used not so much to punish or rehabilitate the sniffer but rather to give the community some respite (South Australia Coroner's Court, 2002, para. 10.48). In 1996, however, the Western Australian Sentencing Act abolished custodial sentences of less than six months, effectively removing this option. While available, the imposition of custodial sentences was reported to have led to some reduction, but sniffing continued to cause significant community disruption (McFarlane, 1999).

Elsewhere in Western Australia, according to witnesses testifying to a recent Senate inquiry into petrol sniffing, police are hampered in enforcing local by-laws prohibiting VSM by the absence of safe places to which they can refer youths. In other communities, by-laws are rendered meaningless by the absence of local police to enforce them (Commonwealth of Australia Senate Community Affairs References Committee, 2006). The Senate inquiry also heard claims that local community by-laws led to sniffers moving to other communities.

The NT *Volatile Substance Prevention Act 2005* empowers communities to develop local management plans relating to managing the possession, supply and use of volatile substances. The NIAT Taskforce report states that, in the period February to May 2006, five communities had requested assistance from the NT Department of Health and Community Services to declare a community management area and plan (National Inhalant Abuse Taskforce, 2006).

#### 10.4 Aboriginal community-based police officers

Several jurisdictions engage community-based police officers in Aboriginal communities, with titles such as 'police liaison officers' or 'community constables'. The officers are expected to perform a variety of roles, including that of providing a link between sworn police officers and community residents. Evidence relating to the operation and outcomes of these schemes consists of anecdotal reports.

Bryce et al. reported on the use of police aides in APY communities (Bryce et al., 1991). Like warden scheme or night patrol members, police aides never have a neutral role in a community, as they are always in kinship relations to other people and so are already implicated in disputes. Thus the police aides' authority, grounded in Western notions of policing, sits somewhat uncomfortably with Pitjantjatjara values of individual autonomy and interconnectedness through relationship with others. Bryce et al. found that rounding sniffers up and locking them

up became more problematic for police and police aides after the Royal Commission into Aboriginal Deaths in Custody. They concluded that while police aides were an important part of the community response, they were limited in their effectiveness.

Similar observations emerged from a coronial inquest conducted in the APY Lands in 2002 into the VSM-related deaths of three youths (South Australia Coroner's Court, 2002). The coroner heard that a Community Constable Scheme had been established in the APY Lands in 1986, with four Anangu men selected to work in each of four communities, initially alongside four non-Aboriginal police officers. Communities were consulted about the appointments; the constables were expected to be engaged in community activities, and to act as a contact between police and the local community. After one year, however, the sworn police officers were withdrawn, leaving the Community Constables working on their own, with support from Marla Police Station. The scheme was subsequently expanded: by 1990, 37 Community Constable positions had been created across the state. In 1988 a non-Anangu Senior Constable was stationed in one APY community to supervise Community Constables throughout the Lands. This position remained filled until 1997, after which the SA Police found they were unable to recruit to the position. According to one witness at the inquest, the departure of the sworn police officer from the community coincided with an increase in petrol sniffing in the community.

Indeed, a theme that emerges from the coronial inquest is that Aboriginal community police officers cannot be expected to work effectively unless sworn police officers are also present in the community. Coroner Chivell concluded, on the basis of evidence presented to him, that the Community Constable Scheme was a worthwhile initiative, which could be further improved by additional training of constables. However, in his view the scheme was also constrained by cultural factors and the fact that constables were members of very small communities. Their main strengths, he suggested, lay in defusing situations and acting as liaison and intelligence officers (South Australia Coroner's Court, 2002, para. 11.61–11.62).

In evidence presented to a 2006 Senate inquiry into petrol sniffing, the Western Australian Police Service argued that, while Aboriginal Community Police Officers, when available, often provided liaison between sworn police officers and community residents, the service was more interested in encouraging Aboriginal people to enter the Police Service itself (Commonwealth of Australia Senate Community Affairs References Committee, 2006).

## 10.5 Community patrols

Community patrols are local services that provide transport and care for at-risk community members, especially young people or intoxicated adults. They are now common in many Indigenous communities, where they may be known as street patrols, night patrols, foot patrols, mobile assistance patrols or street beat programs (Australian Institute of Criminology, 2004). Cuneen (2001) notes that night patrols differ according to whether they operate in urban, rural or remote settings, and in kinds of relationships maintained with police. However, common to all of them, he suggests, is a high level of local Indigenous community ownership, and a reliance on volunteer staffing.

Mosey (1994) has identified several pre-requisites for a successful night patrol. These include adequate consultation at the outset, establishing clear relationships with police and clear duties for patrollers, and a strong management structure.

One of the first to be established was the Julalikari Night Patrol in Tennant Creek, Northern Territory. Set up in the mid-1980s, in 1992 it won the inaugural Australian Violence Prevention Award by the Australian Institute of Criminology (Cuneen, 2001; Curtis, 1993). Curtis, one of the founders of the Julalikari Night Patrol, has argued that night patrols are often misunderstood by non-Indigenous agencies and groups as having a law-enforcement function when in reality their primary focus is the care and wellbeing of members of the local Indigenous community, and the good order of local town camps (Curtis, 1993). It was partly for this reason that Julalikari Council insisted on their patrol being staffed on a voluntary basis. Relations with the local police were formalised through a jointly negotiated *Agreement on Practices and Procedures* that set out the respective roles of police and the patrol.

Cuneen (2001), reviewing crime prevention approaches in Indigenous communities, concluded that evaluations of night patrols had tended to be positive, and indicated that night patrols could achieve:

- reductions in juvenile crime rates including for offences such as malicious damage, motor vehicle theft and street offences;
- enhanced perceptions of safety;
- reduction in harms associated with alcohol and other drug misuse;
- encouragement of Aboriginal leadership, community self-management and self-determination; and
- fostering of partnerships between Indigenous and non-Indigenous organisations.

Indemauro (1999) reports that night patrols in rural areas have led to reductions in arrests and detentions of Aboriginal people. Blanchard and Lui (2001), drawing on an evaluation of four night patrols established in NSW in 1998, found that the patrols reduced Aboriginal youths' involvement in anti-social behaviour and in crimes such as street offences, theft and malicious damage. They also helped to foster a greater sense of community safety, reduced harm associated with alcohol and other drug misuse, and encouraged community management in accordance with principles of self-determination. Night patrols were also seen as positive expressions of Aboriginal citizenship.

At the same time, Blanchard and Lui were critical of what they saw as inadequate, piecemeal funding of night patrols:

The funding given to night patrols in NSW is barely enough for a single patrol.  
The resources needed for even one night patrol group to be sustained total

approximately \$70,000 a year, little more than the annual cost of one incarcerated youth. Basic costs to be covered include: bus hire and ongoing running costs of the vehicle; personal and property insurance for volunteers; equipment including radio communications, uniforms; and training including first aid courses, drivers licences and child protection workshops. A coordinator should also be funded if the community chooses to have one. In some communities, such as Walgett and Redfern, the NSW Police Service provides this support. In others, such as Kempsey, a shire worker coordinates patrol activities. This is an extremely valuable 'hidden' cost of patrol operations. However, most night patrol operations in NSW struggle with donations from business or short-term government contracts. This piecemeal approach to funding is undesirable. An alternative would be a pool of funds available to patrols to complement support acquired at the local level (Blanchard & Lui, 2001).

The NSW Crime Prevention Division of the Attorney General's Department has published an on-line practical guide to establishing and running Community Patrols, covering such aspects as steps in forming a local advisory committee, developing a plan, identifying funding sources, selecting and training staff, responsibilities and roles with respect to child protection, codes of conduct, operating procedures, occupational health and safety issues, maintaining a vehicle, and monitoring and evaluation (NSW Crime Prevention Division, 2003). The guide also includes templates for various data collection and reporting forms, some but not all of which are specific to NSW departmental requirements.

Blagg (2003) conducted a study of 63 night patrols in Western Australia, the Northern Territory, New South Wales, Victoria and South Australia. Like other observers, he found that inadequacy and uncertainty of funding was a major problem for many patrols; however, he also identified another common problem: inadequate support from local communities. Some night patrols, Blagg found, have also found themselves subjected to conflicting expectations. Patrols are often viewed by non-Aboriginal agents as an extension of mainstream policing (the 'eyes and ears' of police) or even as a means of getting young people off the streets, whereas from the point of view of the patrols themselves their main function is not policing, but rather mobilising the capacities of Indigenous communities for caring, support and mediating conflict. 'Night patrollers', argues Blagg, 'are not police and the majority of patrollers do not want policing powers' (p. 74).

## 10.6 Statutory sanctions for VSM

Since sniffing petrol is not generally illegal, sniffers normally appear before the courts, if at all, only when they are charged with committing an offence related to sniffing, usually breaking-and-entering and/or stealing or arson, and occasionally a more serious offence such as rape, indecent assault or murder (Elsegood, 1986; McFarland, 1999). In fact, most chronic sniffers are involved with the law and its institutions in some way (Stojanovski, 1999). Young inhalant users are also liable to fall within the scope of child protection laws.

In general, statutory sanctions have not proved particularly helpful as a response to VSM. It is widely recognised that imprisonment is often not an effective deterrent with respect to young Aboriginal people, and may even be seen as an attractive alternative to the boredom, family dislocation and lack of purpose of community life, offering as it does companionship, regular food and recreational activities (Elsegood, 1986). Magistrates, uncomfortably aware of this, sometimes cast around for alternative sanctions.

Incarceration also poses a range of risks, not least of which is death in custody. Indeed, Dunlop (1988, p. 85) found that the deleterious effects of spending time in jail was a causal factor in some young people's sniffing. Previously we discussed the use of outstations as respite and rehabilitation services for petrol sniffers. Outstations such as Mt Theo are sometimes used by magistrates as a sentencing option for young people in Central Australia who have been convicted of crimes associated with petrol sniffing. However, outstations are only suitable for the accommodation and care of some young people. They are not, for instance, usually suitable for serious offenders, or seriously ill or brain damaged young people:

We can look after offenders and criminals but not if that person is really bad, like a murderer or sexual assault or too much brain damage. We've got too many young kids here. We've got to think of them too, and our own family.  
(Cook et al., 1994, p. 53)

Stojanovski (1999) argues that Aboriginal families' beliefs in their children's rights to personal autonomy can make it very difficult for the children to stop sniffing or go to an outstation. Because of this, families sometimes look to outside agencies such as police to control their children. According to Stojanovski, young people are often relieved when police intervene and send them to Mount Theo.

It is sometimes argued that, even if they lack deterrent power, legal sanctions should be used as a means of removing petrol sniffing 'ringleaders' from communities. In this view, whatever the effect or lack of it on ringleaders themselves, their removal from communities reduces the likelihood that other young people will sniff. The 1985 Senate Committee investigating volatile substance misuse recommended that greater use be made of statutory care and custody provisions as a means of removing petrol sniffing ringleaders from communities, claiming that removal of ringleaders 'is paramount to the effective control of sniffing' (Commonwealth of Australia 1985, p. 222). This argument oversimplifies the nature of petrol sniffing gangs. While a number of observers have documented the hierarchical structure of these gangs and the important role played by dominant older youths in recruiting younger sniffers (Craighead, 1976; Nurcombe, Bianchi, Money, & Cawte, 1970), the presence of 'ringleaders' is merely one among several factors which give rise to petrol sniffing. Brady (1989, 1992) studied a community in Arnhem Land where petrol sniffing virtually ceased during the 1988 dry season. She found that the absence of certain individuals had indeed been a factor in the virtual disappearance of sniffing. However, she also found that some of the alleged ringleaders were not absent throughout the entire period, and warned that relationships between peer group leaders and their followers were more complex than

the ‘ringleader’ thesis allowed. The Yuendumu community was surprised when sniffing did not stop after the removal of ‘ringleaders’ in 1994 (Stojanovski, 1994).

The use of statutory custody provisions with respect to young Aboriginal people also runs counter to the rationale underlying contemporary Aboriginal child welfare legislation, which emphasises the need to maintain the integrity of Aboriginal family, kinship and community structures. Finally, even if the above objections were to be set aside, and one or more ringleaders removed, a practical problem remains: when they return to their communities, as they must eventually be permitted to do, there is no reason to suppose that they will not resume old habits.

Legal sanctions, in short, offer few keys to the VSM problem. Sanctions currently available can certainly deprive petrol sniffers of access to petrol for a limited period, but offer little prospect of inducing any longer-term behavioural change. Nonetheless, the search for suitable diversionary schemes should continue on the grounds that they are less wasteful and more constructive than incarceration for minor crimes and might, in some circumstances, impart skills and attitudes which lead some young people to reappraise the attractions of sniffing petrol.

### 10.7 Community-based sanctions

Closely allied to the notion of employing legal sanctions as a deterrent to petrol sniffing is that of employing non-statutory, community-based sanctions, such as flogging, banishment, shaming at public meetings, or denial of access to local facilities. In one Arnhem Land community the names of known petrol sniffers were publicly listed (Eastwell, 1979).

Morice, Swift and Brady (1981) concluded that on the whole community-based sanctions do not have long-term benefits. Public beating of a sniffer at a community meeting in a community in 2000 did not appear to have any effect (Senior & Chenhall, 2007). Indeed it served to increase tensions within the community with the family of the young man involved being resentful of this punishment.

Brady, however, has suggested that the use of community-based sanctions may have some beneficial effects in settings where there are few chronic sniffers and where, as a consequence, most of those who do sniff are experimenters. She has identified four cultural sanctions which, she suggests, could be used effectively as a response to petrol sniffing: shaming, cursing, ceremonial instruction, and the imposition of compensation payments (Brady, 1992). Mosey, in her study of petrol sniffing in Central Australian communities, found that communities experiencing small outbreaks of sniffing were often able to quash the practice through ‘publicly shaming, hitting or chastising’ the young people involved (Mosey, 1997, p. 21). In Kutjungka, WA, Mosey argued that community interventions such as hitting children or grandchildren, tipping out petrol, taking sniffers for extended stays in other communities or to outstations had limited or stopped petrol sniffing becoming entrenched in the community (Mosey, 2000). Nonetheless, she concludes that sympathetic rather than angry or punitive measures are the most effective.

Morice, Swift and Brady (1981) reviewed several reports of banishment and concluded that, while it may bring about a temporary cessation of sniffing by denying people access to petrol, it was unlikely to have lasting benefits, unless the period in exile was used to bring about a major change in attitudes on the part of former sniffers. For this to be achieved, the authors suggested, close supervision would be needed, both during the period of banishment and subsequently, following return to the home community.

Senior and Chenhall (2007) document how, in 1974, petrol sniffers at one community were banished to an island by senior men of the community. One element in the success of this intervention, they argue, is no involvement or resources were required from non-Aboriginal people or organisations and thus the intervention functioned to reinforce the authority of community leaders.

One situation in which expulsion appears to have beneficial effects—for the community if not for the young person concerned—is when petrol sniffing is introduced by visitors from other communities. According to Brady, quick action to send them back before the practice gains a foothold in the community is essential to prevent its spread (Brady, 1997).

In Cape York a two step process has been devised by the ‘Boys from the Bush’ program to control petrol sniffing (James, 2002, 2004). Firstly, petrol sniffing leaders are identified, removed from the community and placed in the care of others in different communities. Secondly, an inclusive set of community and regional youth development programs are implemented. James argues that transient petrol sniffers remaining in the community will be more easily persuaded to desist through introduction of other activities once these leaders are gone, and so their removal is not necessary. James (2004) recommends that sniffers be placed in environments where supervision is available as well as opportunities for education and employment.

Flogging, apart from its human rights implications, does not seem to be a helpful response. A Review of the Commonwealth Aboriginal and Torres Strait Islander Substance Misuse Program was told that floggings only pushed petrol sniffing further underground (Commonwealth Department of Health and Family Services, 1998). Stojanovski (1994) tells of young people flogged at Yuendumu who were sniffing petrol again later the same day. McCoy (2004) adds weight to this view, finding that in the community at Wirrimanu, belting was not considered an effective means of addressing petrol sniffing by either young people or their families.

Strategies involving banishment and/or other punishments run the risk of accentuating one of the key conditions associated with chronic sniffing: social isolation of the sniffer—from their families, kin networks and the community. It is for this reason that a number of workers have preferred a variety of other strategies, all of which are designed to ‘re-integrate’ the sniffer with his/her family, kin and community, both by providing alternative recreational activities and by counselling or attendance at an outstation program (Franks, 1989).

## 10.8 Preventive policing

Police on occasions have adopted a pro-active, preventive approach to VSM. For example, in early 2002 police stationed in the Anangu Pitjantjatjara Yankunytjatjara (APY Lands) in northern South Australia conducted a preventive exercise known as Operation *Pitulu Wantima* ('Petrol—Leave it Alone'). The operation involved placing four police officers on the APY Lands who worked with Community Constables. One aspect of the operation involved identifying petrol sniffers and, where it was safe to do so, emptying and crushing their petrol cans. Another aspect involved collecting data on the prevalence of petrol sniffing. During the operation, 302 instances of petrol sniffing were detected, involving 95 individual sniffers. A report into the operation concluded that the expanded police presence had been well received in communities, and had led to many requests for assistance with issues other than petrol sniffing (South Australia Coroner's Court, 2005).

Working regionally, the Substance Abuse Intelligence Desk (SAID) in Alice Springs collates intelligence and coordinates policing activities in the tri-state cross-border area of Central Australia. The SAID particularly targets petrol and other drug and alcohol trafficking (Henderson, 2006).

A recurring theme in discussions of the role of law enforcement agencies in addressing VSM is the relationship between police and health and welfare agencies. As mentioned above, the introduction of amended police powers in Victoria in 2004 was accompanied by a protocol designed to clarify just this issue.

A number of other instances of referral systems have also been documented. Anders (Anders, 2000; Gray et al., 2006) describes a system developed and trialled in Gippsland, Victoria, between May 1998 and March 2000, under which youths identified as 'high risk adolescents' (HRA)—as a result of mental health, substance abuse, accommodation problems or domestic violence—were referred by police to appropriate support or service agencies. The system was based on a Common Assessment Referral Form (CARF)—a single page assessment sheet designed to enable police to identify the client's most pressing needs and thereby to direct officers to making the most appropriate referral. The system was also supported by a HRA Reference Group composed of representatives of government and non-government agencies and local police. Referral wall charts were also prepared, identifying the most appropriate agency or contact for each risk type, so the CARF could be faxed to the appropriate agency/service at the time of completion. Officers in each police station were also given a short training session, including an overview of how to identify target groups.

A pilot study conducted in May 1999 found that the system had successfully helped police to identify HRAs and establish connections with appropriate agencies. The scheme was subsequently extended to all police stations in the Gippsland region, as well as to six local secondary schools and five medical services.

The Gippsland CARF was in turn used as the basis for a Common Assessment Referral Project in the Melbourne suburb of Mooney Valley (Riddell, 2003). Following media attention on inhalant

use in the area, a local youth organisation monitored chroming sites over a four week period, and a local steering group was formed comprising representatives of various government and non-government agencies, including the police. A modified version of CARF was adopted in order to link young inhalant users with appropriate services. Riddell found that the project enhanced relationships between police and local services and helped to clarify police understanding of their ‘duty of care’. At the same time, project effectiveness was undermined by staff turnover among agencies and transience among the inhalant user population.

Another monitoring and referral initiative is described by Scanlon (2003) in response to the emergence of ‘chroming’ in Townsville, Queensland, in the 2000–2001 school holidays. Local police at the time knew little about the effects or symptoms of VSM. Initial efforts were directed at training officers to recognise users and monitor chroming locations. School-based police officers compiled a list recording experimental, social and chronic users. In the first year more than 140 persons aged under 18 were identified. Early identification of users and locations of use enabled police to respond in a timely manner, and in some cases to consult with families. However, police lacked either the referral options or the authority to refer users for treatment. What was needed, argued Scanlon, was a treatment model accepted by the families, the professional community, and the users themselves.

## 10.9 Preconditions for effective law enforcement

Although almost all of the evidence relating to law enforcement and VSM is descriptive, it is possible to suggest a number of pre-conditions for effective policing of VSM, some of which are currently being addressed more than others. The pre-conditions are:

1. legislation creating appropriate and adequate police powers, with associated guidelines and protocols;
2. an adequate police presence in VSM-affected areas;
3. trained and supported community-based agencies, including night patrols;
4. places of safety other than police cells;
5. adequate referral options;
6. sentencing options; and
7. clearly articulated linkages with health and welfare sectors, in which both of the latter also play appropriate roles.

## 10.10 Summary

- While VSM is widely acknowledged to be a health and welfare issue, rather than a criminal justice issue, the high risk that inhalant users pose to themselves and others means that it is also an issue for law enforcement agencies.
- VSM is not a criminal offence in any Australian jurisdiction.
- In recent years several Australian jurisdictions have amended police powers to intervene in VSM episodes, in two main ways: by authorising police to confiscate inhalants and related equipment; to apprehend young people engaged in VSM and release them into the care of a responsible person or a place of safety.
- An evaluation of the ‘places of safety’ measures in Queensland in 2005 found that, while the facilities had provided a safe haven for inhalant users, it had not been extensively used by police as a custodial option.
- A number of Aboriginal communities and organisations have imposed sanctions on VSM in the form of by-laws. However, in some places the effectiveness of these has been compromised by a lack of suitable places to which apprehended inhalant users can be taken, and/or by an absence of police to enforce the by-laws.
- Aboriginal community-based police liaison officers can play a useful role in complementing sworn police officers; however, their capacity to act is sometimes constrained by local cultural factors, and they should not be seen as an alternative to sworn police officers.
- Community patrols, also known as night patrols and street patrols, can provide an important mechanism for communities themselves to maintain peace, mediate conflicts and reduce harm related to VSM and other substance misuse. Their effectiveness is dependent upon a number of factors, including clear and mutually satisfactory relationships with local police, and adequate funding.
- In order for law enforcement agencies to work effectively against VSM, a number of pre-conditions must be met. These include an adequate police presence, appropriate short-term custodial options, appropriate sentencing options, trained and supported community-based agencies such as night patrols, and clearly defined relationships linking police with health and welfare agencies.



**PART THREE:  
FROM INTERVENTIONS  
TO STRATEGIES**



## 11 From interventions to strategies

This review has examined evidence relating to specific interventions that have been employed in attempts to prevent and/or manage various forms of VSM in various settings. No single intervention is likely to provide an adequate response to a phenomenon that has as many contributing causes as VSM (or, for that matter, to any other form of drug use). An essential ingredient of any strategy to address VSM is a suite of interventions, each tailored to realistic and appropriate objectives. But even a suite of interventions, in itself, does not constitute a strategy. Conceptually, the interventions should sit within a framework of other components.

Because this review is neither a policy manual nor a community development handbook, we do not explore these other strategic components, but in concluding the review, we shall say a few words about the place of interventions within a strategic framework. We begin by considering the respective roles of particular kinds of interventions, and then relate interventions to other elements of a strategy.

### 11.1 Understanding the determinants of VSM-related harm

The manner in which mind-altering substances such as inhalants are used in any social context and the consequences of these usage patterns are a product of the interrelated effects of three sets of variables: pharmacological-toxicological properties of the *substances* concerned; attributes of individual *users*, such as their personalities, physical health, and expectations associated with drug use; and characteristics of the *environment* in which use takes place, such as availability of the substance, and proximity of locales to roads, traffic and/or police facilities (Zinberg, 1984). No single factor, taken by itself, provides an adequate framework for explaining the use and effects of a mind-altering substance on users, their families or their community.

It follows from this model that no intervention strategy is likely to reduce VSM and its associated problems unless it addresses a range of factors, and their interrelated effects. For example, if you take away the drug (e.g. by substituting non-sniffable Opal fuel for sniffable petrol) without considering the setting in which sniffing takes place (e.g. opportunities for young people; alternative activities), or the needs which young people have been attempting to satisfy by sniffing petrol in the first place (e.g. a sense of power and/or excitement), then the chances are that at least some of those young people will go searching for another drug. Similarly, residential rehabilitation programs focus attention on reducing demand for VSM on the part of users (or ‘set’, in Zinberg’s terms), and may provide temporary respite for sniffers’ families and even the community, but they do not, in themselves, address any of the problems in the setting that contributed to those users’ VSM in the first place.

This does not mean that a single program must attempt to bring about change in all three domains, even if it could do so. But it does mean that any intervention strategy, of which particular programs will form a part, must begin by identifying the factors in each of these three domains that shape the usage patterns and consequences of VSM in the community concerned,

and then considering how particular interventions might contribute to changes in the drug, set and/or setting.

## 11.2 Interventions altering the properties of volatile substances

The best known and documented VSM interventions altering the properties of the drug itself have been the use of Comgas aviation fuel as a substitute for unleaded petrol and, more recently, the introduction of Opal non-sniffable vehicle fuel. A 2004 evaluation of the Comgas scheme (Shaw et al., 2004) found that, in communities sufficiently remote to be insulated from multiple outlets, and where the communities themselves made a sustained commitment to using Comgas, petrol sniffing fell and remained low. The scheme, moreover, enjoyed popular support. Opal came into communities from early 2005, and anecdotal reports suggest that it too has led to a decline in petrol sniffing. In December 2007 the Department of Health and Ageing commissioned an independent evaluation of the impact of Opal, which is expected to be completed by mid 2008.

In making Opal available in Aboriginal communities, the Australian Government has encouraged communities to implement other measures besides Opal, in recognition of the fact that, by itself, removing the supply of one drug (sniffable petrol) will not, of itself, alter demand for recreational drugs. As stated above in section 5.2, under the Petrol Sniffing Prevention Program (PSPP), the government has also incorporated the Opal rollout into an Eight Point Plan which provides for additional resources in areas such as policing and rehabilitation.<sup>7</sup> One of the objectives of the independent evaluation of the Opal rollout will be the extent to which the use of Opal fuel has been incorporated into broader community-based VSM strategies.

Other attempts to reduce VSM by altering inhalants have proved less effective. The addition of ethyl mercaptan (also known as ‘skunk juice’) to petrol in several Arnhem Land Aboriginal communities in the 1980s was shown to be ineffectual for several reasons, one being that sniffers did not take long to learn that simply leaving the modified petrol out in the sun for a short time would cause the additive to evaporate. More recent research conducted by the CSIRO found that other forms of mercaptan would not have been so easily removed once added; however, the National Inhalant Abuse Taskforce (NIAT) has recommended against their use in view of the unacceptably high level of sulphur emissions entailed (National Inhalant Abuse Taskforce, 2006).

In 2004, the Australian Government Department of Health and Ageing funded the Victorian Department of Human Services to commission research aimed at assessing the potential applicability of product modification as a VSM prevention strategy. The Victorian Department in turn engaged two research teams: one from CSIRO to examine the technical feasibility of modifying inhalants without detracting from their performance or attractiveness to consumers, and a team comprising d’Abbs, MacLean and Robertson to examine the likely behavioural impact of modifying inhalants on users. Findings from both projects were subsequently considered by the NIAT (National Inhalant Abuse Taskforce, 2006) in its proposed national policy framework.

<sup>7</sup> Further information about the Eight Point Plan can be found at [www.health.gov.au/petrolsniffingprevention](http://www.health.gov.au/petrolsniffingprevention).

NIAT reported that:

1. While Opal appeared to be an effective product, other methods of preventing petrol sniffing by adding deterrents to unleaded petrol should not be pursued.
2. The addition of deterrents to butane and other gases was technically feasible but subject to practical difficulties, and required further research.
3. Reformulation of aerosol spray paints by reducing toluene levels, as already introduced by Barloworld, warranted further examination.

On the behavioural side, NIAT noted that product modification of inhalants was more likely to influence experimental or occasional sniffers rather than chronic sniffers, and that, depending on availability of alternative drugs, it might lead to substitution of other, possibly more harmful, drugs.

Anecdotal reports from Alice Springs, of a switch by retailers to selling low-toxicity spray paints only, are a promising indicator of the limited but real benefits attainable from judicious use of ‘drug’-based interventions.

### 11.3 Interventions targeting users and their families

The majority of interventions described in the previous chapter focus on fostering change in individuals and occasionally also their families so that they no longer seek intoxication through VSM. Such an approach relies, in the main, on assisting drug users to decide they wish to cease VSM and then supporting them to maintain this resolve. Interventions of this kind need to be complemented by measures which alter the social contexts in which people use drugs (for instance, providing other things for them to do), as well as measures to restrict the availability of intoxicating substances.

VSM in urban contexts generally occurs among young people who are acutely socially marginalised; for instance, prevalence is often higher among those involved with the child protection or juvenile justice systems. It makes sense, then, that measures to reduce the isolation, deprivation and lack of opportunity experienced by these young people are likely to impact on their substance misuse.

Education on the harms associated with VSM is provided in occupational health and safety rather than drug education curriculum in Australian schools, due to concern about alerting young people to the possibility of VSM. Where aimed at people who already misuse volatile substances, programs should focus on effects (such as decreased fitness) which are likely to be of immediate concern to young people, rather than on more dramatic risks such as that of premature mortality. Educational interventions are valuable where they promote caring and coping capacities within the community, rather than spread alarm and despondency; are culturally appropriate; occur in conjunction with other interventions aimed at reintegrating young people with their families and the community; and are evaluated. Programs relying on scare tactics are likely to be counter-productive.

VSM drug treatment is frequently provided in the form of counselling, although the literature questions how effective such approaches can be with very young people or those who have sustained neurological damage. Some authors have argued that family interventions show promise in treating VSM, in both Indigenous and non-Indigenous contexts.

New residential rehabilitation services are under development in South Australia, Victoria and the Northern Territory. Little clinical literature is available to guide treatment practitioners or those designing programs. Residential rehabilitation for VSM also raises a number of difficult issues. The first concerns treating the person outside of his or her setting. In the absence of follow-up intervention in that setting, the effectiveness of such programs appears to be very limited. A second issue concerns the theoretical models underlying rehabilitation: to what extent are residential models which have been developed primarily in the context of adult substance misuse among urban, Western societies appropriate for young (often Indigenous) people? How might VSM-specific services address clients' poly-drug use? Client outcome studies of Canadian VSM residential treatment programs indicate that different service models vary considerably in their effectiveness and that a relatively high non-completion rate might be anticipated. Given the high cost of residential rehabilitation compared with other community approaches, it is important that outcomes of new Australian services be evaluated.

Outstations or homelands have an important role to play in combating petrol sniffing. However, such measures should not focus exclusively on the drug users and ignore the community. Outstation programs may assist in the rehabilitation of some young people and certainly provide a restorative break from the practice; however, most will return to sniffing if complementary changes have not been made in the home community. The range of programs run at Yuendumu provide an excellent example of a comprehensive approach involving provision of preventive recreational activities, intervention and after-care (Preuss & Napanangka Brown, 2006; Stojanovski, 1999).

Where homeland centres or outstations are used in addressing VSM they need to be adequately resourced with proper access to medical support, first aid training, telecommunication facilities and funding to employ staff and provide essentials such as food. Funding models must be flexible to account for periods when, for whatever reason, they do not operate. Homeland centres or outstations are not appropriate places to send seriously disabled or unstable young people, and individuals must be appropriately assessed before being sent to isolated locations. Finally, they need to provide a meaningful program of activities, cultural or otherwise, to engage young people's interest.

Outstation programs depend on the ongoing commitment of a family group. They appear to be most successful in helping young people with family ties to the land on which they are based. Many people do not have access to an outstation to which to send their children or, where they do, funding to sustain it.

Culture, paintings and ceremonies may well act as a prevention measure against petrol sniffing, but cannot be harnessed to perform this function in the service of non-Aboriginal judicial or other systems.

Most of the responsibility for care of chronic and disabled sniffers falls to families, with much-needed physiotherapy and other allied health services in short supply in remote communities. Little is written on the fate or care of young people in urban areas who become brain damaged through VSM.

Incarceration does not appear to help young people desist from VSM, other than by enforcing a break for both users and their communities. However, new NT legislation enables magistrates to sentence people to mandatory treatment. Again, it will be important to evaluate this measure carefully.

Measures aimed at reducing the harm associated with VSM should be adopted as a matter of course, particularly in the form of education provided to established or chronic users of volatile substances. Harm reduction education should be adopted in addition to, rather than as a substitute for, other intervention measures aimed at bringing about a cessation of VSM.

#### **11.4 Interventions altering the environments in which VSM occurs**

Any strategy to reduce VSM must address the setting in which VSM is liable to occur; that is, it must look to the range of opportunities and constraints that present themselves to young residents, especially the opportunities for rewarding and exciting activities, and the forms of support available to families in which VSM occurs. The potential accessibility of other drugs to which young people using volatile substances might inadvertently be diverted by any intervention should also be considered.

Our review has revealed three main ways of altering the setting in which VSM takes place:

- restricting availability of inhalants;
- providing recreational, training and/or employment programs;
- imposing legal sanctions, and/or community-based sanctions.

Most attempts in remote Aboriginal communities to prevent petrol sniffing by locking-up petrol supplies (generally dating from before the Comgas and Opal schemes came into effect) failed in the face of the remarkable ingenuity of some sniffers in circumventing them. In urban settings, negotiated agreements under which retailers have agreed to take popular inhalants off the shelves have formed an important part of community-based VSM strategies, although the extent to which these measures have contributed to a decline in VSM is often difficult to gauge. As pointed out earlier in the review, several Australian states/territories have now introduced legal restrictions on selling particular types of inhalants to persons aged under 18 years. Again, the impact of these measures has not been assessed.

Recreational programs have been part of many successful strategies and have a useful primary intervention role to play, provided they meet the conditions set out above, namely: that staff are sensitive to the needs of the community and provide a range of programs (not just football) that are genuinely engaging and exciting, and provide opportunity for risk-taking; that activities be available during after-school hours, at evenings and weekends, and during school holidays; that drug users are encouraged to take part, but not given preferential treatment; and that activities for girls and young women be included in the program, alongside (in Indigenous community settings) opportunities for initiated young men to engage in separate programs if they prefer.

Innovative models for VSM diversion have emerged in both remote and urban/rural settings, for instance involving risk-taking, performance, group work and engagement with media technologies. Some recent programs in Indigenous communities have entailed training community members as youth/recreation workers, and if ongoing support is provided, this is a sensible move. Recreation programs are, however, of limited effectiveness on their own, particularly where VSM is widespread and chronic and in these instances should not comprise the principal part of any strategy.

Along with training opportunities, appropriate schooling may act as a diversion from VSM. Young people with a history of VSM who have left school and wish to return may require supportive re-entry options. Secondary education options remain very limited in Australian remote communities. Employment options that engage young people can make VSM relatively less attractive and may foster a sense of optimism about the future.

We have referred several times to the use of the Community Development Employment Program (CDEP) scheme in creating employment opportunities for anti-VSM activities in Indigenous communities, such as the Jaru Pirrjirdi program at Yuendumu, where young adults are paid CDEP money to run a diversionary program of activities for young people. In 2007 the Commonwealth Government announced that it proposed to shut down the CDEP scheme. At the time of writing (August 2007) it was not clear what impact this decision would have on community initiatives such as Jaru Pirrjirdi.

Adequate educational, training and employment opportunities are of course essential components of any functional community or region, regardless of the contribution they may or may not make to preventing VSM, and they should be fostered for this reason. At the same time, it should be borne in mind that such measures rarely reach chronic sniffers, whose distinctive needs must be addressed separately.

In recent years several Australian jurisdictions have amended police powers to intervene in VSM episodes. This has been achieved using a 'civil apprehension' approach rather than by making VSM a criminal offence. Police now have authority to confiscate inhalants and related equipment, and apprehend non-adult inhalant users and release them into the care of a suitable person or a 'place of safety'. These amendments have undoubtedly removed some previous impediments to police action and helped to clarify the role of police with respect to VSM. In

themselves, however, they do not guarantee an adequate or satisfactory policing response. In remote areas in particular, containment of VSM requires an adequate police presence on the ground. In both remote and urban/regional settings, statutory power to intervene tends to be meaningless unless police have access to appropriate short-term custodial options for young people intoxicated from inhalants.

Statutory police powers can be complemented by community-based warden schemes and night patrols, provided that the latter receive adequate funding to train staff and maintain the service. In the short term, warden schemes and night patrols can reduce VSM-related vandalism and other harms; in the longer term, they can enhance a community's sense of its own capacity to respond to VSM. Once again, however, these measures also highlight the need for other interventions. Returning sniffers to their families, for instance, is likely to have little effect unless those families in turn receive assistance in working with sniffers.

The role of providing education on VSM recognition and intervention to professional staff and, in some instances, family members is far less contentious than that of educating young people about VSM. Research from the UK indicates that an education campaign targeting the whole community was associated with a gradual decline in VSM, a trend which reversed once the campaign was over.

Harm reduction approaches which entail measures to make the settings in which VSM occurs less risky are extremely contentious. The practice, for instance, of supervising chronic volatile substance misusers within care or treatment facilities to monitor their safety, rather than removing cans or forcing them to leave, is banned in Victoria. However, given the high risk that even isolated episodes of VSM can have serious, including fatal, consequences, harm reduction measures should not be dismissed for fear of arousing controversy.

### 11.5 The place of interventions in a VSM strategy

Interventions form an essential part of any strategy to combat VSM—but only a part. The development of a strategy involves a number of steps:

- identifying and describing a problem or problems;
- clarifying and prioritising objectives;
- identifying resources available, and resources needed, in order to pursue those objectives;
- selecting the best interventions for pursuing prioritised objectives;
- implementing the interventions;
- identifying and addressing barriers to implementation that arise in the course of the program;
- identifying and addressing unforeseen consequences;

- monitoring implementation processes and outcomes;
- feeding-back information obtained to relevant stakeholders; and
- modifying the strategy in light of information gathered.

How each of these steps is undertaken is no less important than *what* is decided. For example, whose voices are heard (and whose not heard) in identifying problems and objectives? As mentioned earlier, it is beyond the scope of our review to explore these additional components of a strategy. An extensive policy literature and community literature is available. For those planning a community-level strategy, three resources are relevant:

1. One of the four volumes in the Aboriginal Drug and Alcohol Council (ADAC) kit *Petrol Sniffing and other Solvents: a Resource Kit for Aboriginal Communities* (Aboriginal Drug and Alcohol Council (SA) Inc, 2000) provides step-by-step advice on community development approaches to VSM.
2. A version of this resource produced for use in Victorian Indigenous communities (State Government of Victoria, 2003).
3. A report, obtainable from the internet, prepared by the Queensland Government Commission for Children and Young People (Commission for Children and Young People, 2002) describes past community-based approaches and outlines a seven step process for communities concerned about VSM.

Programs are best developed to suit specific contexts and therefore cannot be exactly reproduced elsewhere; however, factors which are believed to have led to their success can be kept in mind by others wishing to do similar work. Shaw et al. (2004, p. 64) stress that the best way to determine the most appropriate approach for any particular community is through a process of consultation and assessing community strengths: 'it is the community itself that works this out most efficiently'. While successful anti-petrol sniffing programs are inevitably those which enjoy the leadership and support of Aboriginal people themselves, many such interventions also require government support to be sustainable. There needs also to be mechanisms in place for the sharing of information between and within communities so that people are aware of what has been successful in the past.

Less experience in responding to VSM in urban settings is available compared with remote Indigenous communities. No supply-reduction measure equivalent to Avgas and Opal is available for spray paint, butane gas, deodorants or glue—the VSM products most commonly used outside remote communities. Moreover, even if a non-sniffable alternative for these products were to be developed, other substances subject to VSM would remain available. Nonetheless, in recent years many community programs have been developed in localities across Australia, often involving elements such as educating retailers about VSM, visiting VSM 'hotspots' and ensuring an integrated service response. The majority of urban programs reviewed here

have received only short-term funding, making it difficult to implement long-term preventive strategies.

This review demonstrates that when communities have been successful in doing something about VSM, a number of conditions have been present. First, there has been sufficiently strong community resolve for families and community decision-making structures to act cohesively in deciding on and supporting strategies, and community members and key agency representatives have been actively involved in implementing them. In remote communities both Indigenous and non-Indigenous authorities must support the intervention. Second, not just one or two interventions have been introduced but a range of concurrent activities affecting the drug, the users and the social setting in which VSM occurs. We have seen that VSM is very difficult to eradicate permanently, and no individual intervention should be judged unsuccessful for failing to stop sniffers across the continuum of use, or for all time.

## 11.6 Concluding thoughts

Since the first draft of this review was prepared as an internal departmental document in the Northern Territory in 1989, revised and published in 2000 and now, in 2007, updated and expanded in scope, responses to VSM have changed in several ways. Prior to the beginning of the 21<sup>st</sup> century, governmental responses were largely restricted to making the occasional one-off grant to non-government agencies, often in reaction to a media-driven crisis. Coordination between the Australian and state and territory governments was almost non-existent, almost no interventions were evaluated, and the corporate sector was nowhere to be seen. Since then, we have seen not only a significant expansion of governmental resources devoted to VSM, but also the emergence of co-operation between governments and a commitment to a coherent VSM policy framework, culminating in 2006 in the adoption of a new policy set out in 'National Directions on Inhalant Abuse' (National Inhalant Abuse Taskforce, 2006). The role of BP Australia in developing Opal fuel, and of Barloworld Coatings in designing and marketing low-toxicity aerosol paints, demonstrate the important part that the corporate sector can play in combating VSM.

Yet much remains to be done, by governments, researchers, and by communities. We need, for instance, to look thoughtfully at whether current policy directions (such as the funding of residential rehabilitation treatment programs) are an appropriate and cost effective response to VSM in Australia. Product modification strategies to reduce the toxicity of VSM substances commonly used in cities and towns must be explored. Harm reduction features only rarely in Australian responses to VSM. Given the acute nature of health risks associated with VSM, harm reduction deserves further consideration, particularly for established users.

Welcome though some changes are, VSM remains something of a 'poor cousin' to other forms of drug use in drug and alcohol policy and intervention. The prevention and treatment literatures remain slight compared to those addressing other forms of substance misuse. To date, little research considers, for instance, to what degree the treatment approach to VSM should differ from that

employed in responding to other drugs. There is little point in assisting someone to cease VSM if it is immediately replaced by other harmful practices such as injecting drug use. How might poly-drug use including VSM be addressed? Much of the education provided to volatile substance users concerns the possibility of sudden sniffing death, based on its incidence in the UK. Australian national VSM-associated morbidity and mortality data would assist in determining whether our patterns of VSM and product preference result in a different range of harms.

Even today, too few Australian programs are evaluated or reviewed. Many programs would benefit from evaluation that is sensitive to the aims of those involved, and to the constraints under which the programs operate. We note here that very few evaluations of VSM programs in urban areas are available. The reported experiences of other countries in addressing petrol sniffing can also usefully inform Australian initiatives, although they cannot be assumed to be directly transferable.

Finally, we should not lose sight of the relationship, in both Indigenous and non-Indigenous communities, between socio-economic disadvantage and VSM. We believe that the most effective strategies for combating substance misuse, including VSM, are those that improve young people's lives and the health and wellbeing of their families and communities. Working with young people to enhance their opportunities, identify and fulfil their potential capacities in a spirit of confidence, optimism and resilience, creates the conditions under which people are most likely to make their own decision not to misuse inhalants or any other drugs.

## 11.7 Summary

- Interventions are an essential component of any VSM strategy—but do not in themselves constitute a strategy.
- This review demonstrates that when communities have been successful in doing something about VSM, a number of conditions have been present. **First, there has been sufficiently strong community resolve for families and community decision-making structures to act cohesively in deciding on and supporting strategies, and community members and key agency representatives have been actively involved in implementing them.**
- **Second, not one but a range of interventions must be put in place. The ways in which mind-altering drugs, including volatile substances, are used in any given context, and the consequences of those usage patterns, are a product of the inter-related effects of three factors: pharmacological-toxicological properties of the drug; attributes of the drug user; and aspects of the social and physical environments in which drug use takes place (Zinberg, 1984). Strategies against VSM are most likely to be effective when they comprise interventions designed to influence each of these three factors.**
- Interventions addressing VSM are too rarely critically evaluated. Sensitive program evaluation is essential to ensure a rational deployment of effort and allocation of resources.

- Two highly successful interventions entailing altering properties of the drug are the substitution of aviation fuel and then Opal for sniffable fuels in selected remote communities. The development of measures to alter the properties of volatile substances other than petrol would support anti-VSM activities in urban and rural areas.
- The majority of VSM interventions have focused on individual users and/or their families. These include education, counselling, residential treatment, removal of sniffers to homeland centres or outstations, and some harm reduction measures. These interventions have a useful role to play but need to be complemented by other measures to reduce the availability or toxicity of substances and provide an environment where VSM becomes less attractive to potential misusers.
- Three main ways of changing the settings in which VSM occurs are identified:
  - restricting the availability of inhalants;
  - providing recreational, training and/or employment programs;
  - imposing legal sanctions and/or community-based sanctions.
- Although more resources are available today for VSM interventions, and although governments in Australia have committed themselves to a national policy framework for addressing VSM, many interventions even today are not evaluated, and the quality of morbidity and mortality data on VSM remains deficient.
- Ultimately, the most effective interventions into VSM are likely be those activities that redress social and economic disadvantage and enhance the opportunities, capacities and confidence of young people.



# PART FOUR: REFERENCES



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