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Substance Misuse Treatment Framework (SMTF) Prevention and Education of Volatile Substance Abuse (VSA)



Contents

	Page
Overview	
1. The purpose of this document	4
2. About Volatile Substance Abuse	5
3. Interventions with Volatile Substance misusers	6
3.1 Assessment	7
3.2 Immediate interventions	8
3.3 Tackling chronic misuse	9
3.4 Harm minimisation	10
3.5 Youth Services and community-based activities	10
4. Prevention	12
4.1 Schools and Colleges	12
4.2 Youth Services	14
4.3. The Police	15
4.4 Other groups	15
4.5 Parents and Carers	15
4.6 Retailers, Trading Standards Officers, and Industry	15
5. Training	17
6. Actions	18
6.1 Planning, commissioning and developing services	18
6.2 Prevention and early intervention	18
6.3 Assessment and interventions	18
6.4. Staff training	19
6.5 Controlling supply	19
6.6 Monitoring, research and evaluation	19
7. Summary of some key actions for different stakeholders	20
Annex A Sources of information	22
Annex B About VSA	25
Annex C Practice Example - VSA prevention & awareness activities in Ynys Môn	38
Annex D Practice Example - Rhondda Cynon Taff CBC - Trading Standards	40
Annex E Practice Example - Carmarthenshire Substance Misuse Action Team	41
Annex F Abbreviations and other terms used in this document	42

The *Working Together To Reduce Harm Substance Misuse Strategy for Wales 2008-2018*, which was published in October 2008, includes references to VSA:

- ‘We want children and young people to acquire the knowledge, skills and understanding they need to make informed choices when they encounter illegal drugs and legal substances such as alcohol, tobacco, medicines and volatile substances’ (page 24, paragraph 12).
- ‘Volatile substance abuse (VSA) remains a concern as it still causes more deaths among young people aged 10-16 than Class A and other illegal drugs’ (page 39, paragraph 33).
- ‘Raising awareness of the hazards of volatile substances is catered for at both primary and secondary school level within the All Wales School Liaison Core Programme (AWSLCP). However, it is recognised that we need to address the availability and accessibility of volatile substances’ (page 39, paragraph 34).
- ‘More needs to be done to reduce the availability and accessibility of volatile substances. We will identify local good practice in engaging communities in addressing VSA and enforcement action being taken with retailers linked to VSA incidents’ (page 49, paragraph 4).

Overview

Volatile Substance Abuse (VSA) is a dangerous but neglected form of substance misuse. Volatile substances are deliberately misused by some young people to achieve intoxication and (perhaps increasingly) by adults. Most misuse is short-term; but some chronic or dependent misuse occurs. VSA is potentially life-threatening; there have been almost 100 deaths in Wales since 1971.

This module of the Substance Misuse Treatment Framework for Wales (SMTF), which underpins the *Working Together to Reduce Harm Substance Misuse Strategy for Wales 2008-2018*, seeks to improve the response to VSA in Wales by: setting out the facts about VSA; describing the issues related to it; recommending actions to address it. Some key issues and associated actions are listed below:

- VSA-related deaths in Wales are proportionately higher than in England (though lower than in Scotland and Northern Ireland). Survey evidence on the prevalence of VSA is lacking. Improvements in evidence base on prevalence are urgently required. An ongoing assessment of prevalence of VSA should be established to benchmark levels of use and enable progress to be measured.
- Current and previous VSA should be included in the comprehensive assessment and recorded on the clients file using the *Wales Integrated In-depth Substance Misuse Assessment Tool (WIISMAT)* and similar assessment tools. Interventions should be provided and these should be monitored and evaluated for VSA-related outcomes which will provide more information on effective interventions.
- Chronic VSA is linked with a wide range of other problems and difficulties; and resources for addressing these issues are limited. Interventions following disclosure of VSA should be integrated with other interventions as appropriate.
- Volatile substances are, for many children and young people, the first misused substance. Early and sustained prevention activities, including education in school, should take place.
- Volatile substances are readily available and it is essential that parents and carers are aware of the risks of the misuse of everyday products. Retailers should be aware of VSA and meet their legal responsibilities; Trading Standard Officers can help retailers to do this.

1. The purpose of this document

This good practice guidance module has been developed to assist planners, commissioners and service providers to meet the locally-assessed needs of those misusing volatile substances (and those at risk of doing so), and others affected by this issue. It gives information about volatile substances and advice on developing a range of service provision by a wide audience of professionals and others.

This module takes account of other relevant policy and guidance, such as:

- Circular 17/02, *Substance Misuse: Children and Young People*.
- National Treatment Agency (NTA) Guidance on young people's treatment.
- Advisory Council on the Misuse of Drugs (ACMD) Report on VSA.

It also takes account of evidence from research, evaluation and practitioner experience.

This module includes reference to, and should be considered alongside, other relevant Welsh Assembly Government documents, including:

- Working Together to Reduce Harm the Substance Misuse Strategy for Wales 2008-2018.
- Substance Misuse Treatment Framework: Guidance on Good Practice for the provision of services for Children and Younger People who Use or Misuse Substances in Wales.
- Substance Misuse Treatment Framework: Carers and Families of Substance Misusers: A Framework for the Provision of Support and Involvement.
- Substance Misuse Treatment Framework: Guidance for Community Safety Partnerships to Commission Substance Misuse Services.

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2. About Volatile Substance Abuse (VSA)

VSA is an easily-overlooked form of substance misuse. The substances are mostly contained in everyday consumer products and therefore it is not illegal to possess them. While consumer products can be accidentally misused in a variety of ways, VSA involves deliberate misuse. Misuse of these products to achieve intoxication is mostly not a public activity.

Yet, despite receiving little attention, VSA is a serious problem. Some people die as a result of VS misuse. There is evidence that early onset of VSA is predictive of problems in later life - including drugs problems. More details about VSA are at Annex B.

VSA is also a neglected problem. VS misusers tend to 'fall through the net' of services. Assessments of substance misuse do not always include an assessment of volatile substance misuse. Professionals may be less aware of the issue, and parents and carers may be ignorant of the potential for misuse of products that they use every day.

VSA needs addressing in different ways:

- Controlling supply: for example, retailers will need to be informed of their legal responsibilities in relation to sales of such products.
- VSA in the workplace: workplace managers have a duty of care and need to be vigilant about products with misuse potential.
- Reducing 'demand' for volatile substances: all children and young people will need information about the dangers of these substances if used inappropriately, and be helped to develop appropriate attitudes and the skills they need for living safely and healthily in a society where intoxicating substances are readily available.
- VSA awareness and actions by adult drugs workers and by drugs workers with young people.
- VSA awareness and actions by workers with vulnerable people, such as those in mental health services and those working with homeless people.
- VSA awareness and actions by workers with young people (particularly those who may be more vulnerable, such as looked after children).
- VSA awareness and actions by parents and carers; information that will help them to recognise VSA and, if necessary, to deal with their child's misuse and encourage them to address the issue proactively.
- Support for educators to enable them to teach effectively about VSA.
- Some children and young people who are misusing substances will need expert help.

This is not an exhaustive list and other actions will emerge as new needs appear and as practitioners become more effective in dealing with VSA.

3. Interventions with Volatile Substance Misusers

Three different types of young VS misusers require different intervention approaches:

1. Most young people who misuse volatile substances are experimental users and do not continue their misuse; they will not require specialist substance misuse interventions - or any interventions at all; it may be counterproductive, because it could entrench an activity that was transient. For them, intervention may simply consist of an explanation of the risks, perhaps increased supervision, and the opportunity to participate in more constructive activities. Parents may need reassurance and support.
2. Sometimes, a group of young people will continue to misuse volatile substances beyond the experimental stage. Together, they may misuse in public or semi public spaces, and cause concern to local residents. This may be because of their uninhibited, or even bizarre, behaviour while intoxicated, or because of public disorder and anti social behaviour. Interventions might include community based interventions involving a range of agencies, perhaps including the police.
3. A small number of young misusers will continue their misuse long after their friends, who joined them in experimentation and beyond, have long since stopped misusing volatile substances. They may become psychologically dependent or develop other serious problems with VSA which will be allied with other difficulties in their lives. They may become stigmatised and isolated. They may need specialist help - from youth services and/or from dedicated young people's drug and alcohol services.

Services for young people should be specifically designed for their needs and be able to effectively address key issues such as confidentiality and consent. Generic youth services should take the lead, with support from specialist substance abuse agencies. Mental health services will have an important role, for example, in the treatment of psychiatric co-morbidity. Those working with looked after children should be aware that VSA may be more likely in this vulnerable group.

There are no treatment or intervention services designed specifically and exclusively for volatile substance misusers in Wales and they are not appropriate, as the issue should be dealt with by existing drug and alcohol services and by services for young people. Currently, VSA referrals to substance misuse services would receive intervention appropriate to their circumstances.

There needs to be greater awareness of the issue among adult services (in particular, mental health services and services for homeless people) and mechanisms for identification and fuller assessment are required. However, little is known about how best to help adult VS misusers. Some users of illegal drugs will also misuse volatile substances in a pattern of poly-drug use. Other users of illegal drugs may turn to volatile substances when their drug of choice is not available, or they cannot afford it. It is not clear whether these adult VS misusers are mainly those who misused volatile substances when they were young and are returning to a substance with which they are familiar, or whether they are 'new recruits' to the

practice. If the latter, there may be greater risks because of their inexperience with the substances.

3.1 Assessment

VSA is not always identified in initial assessments and may continue unrecognised in people in treatment. Improving the assessment of VSA is an essential prerequisite to improving services for VSA. Data collected will provide information on the extent and types of misuse and help to raise the profile of the issue.

The National Treatment Agency (NTA) calls for: ‘...better assessment of the most severely affected young people, delivery of more systematic, practical interventions and a much greater synergy between mental health services and those working currently in the substance misuse field.’ (NTA 2005).

While the NTA’s document on the assessment of young people does not specifically mention VSA, it recommends that:

‘Understanding the development of substance misuse is an important part of gaining a picture of how substance use is part of a young person’s life.

There is a need to appreciate:

- Types of substance used.
- Age of first use of substances.
- Current and past substance use.
- Frequency of substance use.
- How long specific substances have been used.
- Minimum, maximum and usual quantities taken at a time.
- Method of use or route of administration.
- Substances taken in combination.
- Patterns of substance misuse.
- History of bingeing, memory loss and overdose.
- History of accidents and injuries related to substance misuse.
- Previous attempts to change substance misusing behaviour.

This information will give a perspective on changes in substance misuse and possible difficulties the young person may have in changing substance misusing behaviour.’ (Britton 2007, p 12)

For young people who come into contact with helping services and who undergo an assessment, VSA should be picked up. However, volatile substance misuse is not always specifically included in assessment protocols and documentation.

For adult drug users in contact with services (especially drug services, but also other services, such as mental health services), identification is a key issue. Too little is done in assessment and in ongoing interventions to identify VS misusers or those who might be likely to misuse volatile substances under certain circumstances.

Key Actions

- Wales Integrated In-depth Substance Misuse Assessment Tool (WIISMAT) or the equivalent agency tool, should include an assessment of past and current VSA. The questioning should be sufficiently detailed to identify the range of products that may have been misused.
- Drug services should ensure that initial assessments include asking about past and current use of **all** substances.
- Other services (such as mental health service and services for homeless people) should have ways of identifying VSA.
- Where current VSA is identified, it should be considered in the risk assessment.
- Initial staff training should include information about VSA and to counter the idea that volatile substances are only misused by young people.
- Ongoing training and supervision should include assistance in working with volatile substance misusing clients.

3.2 Immediate interventions

Action when a volatile substance misuser is intoxicated

Take a calm and firm approach. Exertion or raised emotion may increase adrenaline to dangerous levels for their over-sensitized heart. Keep calm - and keep the person calm. Once they stop inhaling the product, they will 'sober up' in a few minutes (unless, of course, alcohol or other drugs have also been taken). So try to remove the product if possible; don't chase a VS misuser, or fight with them. Understand that it isn't possible to have a serious conversation with an intoxicated person. Medical help might be needed - keep monitoring the situation, and if the person collapses, place in the recovery position and call an ambulance. A later check-up may identify particular health problems.

Williams *et al* 2007 suggest the following medical interventions:

'Most acutely intoxicated inhalant abusers do not seek medical attention, and only when intoxication is life-threatening or has led to serious injury will an abuser present to the emergency department. Acute medical management of inhalant abuse starts with ... assess[ing] and stabiliz[ing] the patient and address[ing] any specific acute injury or toxicity Myocardial sensitization by inhalants necessitates a calm and supportive environment No medications reverse acute inhalant intoxication or have been found to be helpful with dependence or withdrawal symptoms.' (Williams, *et al* 2007)

Key Actions

- All professionals working with young people, and adult substance misuse service providers should be aware of the indicators of VSA.
- All should know how to calm, not excite, an intoxicated VS misuser.
- Consideration should be given to the provision of defibrillators (plus training for staff in their use) at locations where large number of potentially vulnerable young people meet, as well as in emergency service vehicles.

3.3 Tackling chronic misuse

The persistent misuse of volatile substances is complex behaviour that is associated with low self-esteem, family problems, isolation and psychological difficulties. A large proportion of those who misuse volatile substances also misuse other drugs. Support services for young misusers should not be focused narrowly on volatile substances, but should be able to deal with VSA in the context of a range of problematic behaviours. As problematic behaviours are often more important for the VS misuser than the problems associated with their misuse of volatile substances, these problems may need attention first. As part of an intervention programme, sleep and restfulness and a healthy diet may aid recovery.

No defined withdrawal syndrome has been identified when someone stops VS misuse (although it may take a considerable time for the residue of solvents such as toluene from chronic petrol abuse to be eliminated from the body), so special detoxification regimes are not necessary for most VSA. Although the lipid-soluble chemicals can be detected in body tissues some weeks after misuse has stopped, they do not have psychoactive effects. However, some people become dependent on Gammahydroxybutrate (GBL) and may experience severe withdrawal symptoms requiring medication to ameliorate.

Intervention may need to continue for some time to address deep-seated problems; after the conclusion of the intervention, follow-up is crucial. Relapse is common, as with other drugs; it should be regarded not as 'failure', but as a learning opportunity. After care, long-term rehabilitation, social reinsertion, relapse management, and informal contact are all important. Group activities and support may help ex-VS misusers to stay abstinent.

Key Actions

- Drugs services for young people should be able to deal with VSA in the context of a range of problematic behaviours.
- Adult drug services should be aware of the possibility of VSA as part of a constellation of drug use by their clients.
- Adult drug services that treat young people should tackle VSA issues appropriately.
- Youth services should be aware of the possibility of chronic VSA as part of a spectrum of problematic behaviour.
- Adult services, such as mental health services and services for homeless people, should be aware of the possibility of chronic VSA as part of a spectrum of problematic behaviour.

3.4 Harm minimisation

Harm minimisation advice should not be routinely given; there is no approved advice as most VSA has unpredictable dangers. However, the fire or explosion hazard (particularly for butane and petrol in confined spaces) should be explained.

Some misusers are not able to quit the habit in the short term. They may benefit from careful individual guidance on reducing the risks, including avoiding certain particularly harmful products (e.g. petrol), awareness of the risks of fire and explosion, not using large plastic bags, and not spraying gases directly into the mouth. A particular piece of advice regarding poppers is not to drink them, as this can be fatal.

3.5 Youth Services and community-based activities

The youth service and community-based services are well-placed to make early interventions to tackle problems that - without intervention - may become worse and cost society a lot more to deal with when they have to be tackled later. But there are some difficulties; firstly, of identification - how to pick out the vulnerable. Secondly, of stigmatisation: a risk of early intervention is that a young person will be unduly stigmatised by being focused on. Thirdly, of funding and prioritisation: youth services are required to address a multitude of issues and problems; VSA is only one of many. Money is not available to address all the pressing issues facing workers with young people.

These difficulties can be addressed by tackling potential VSA issues as part of a constellation of vulnerability. This, anyway, is a preferable approach. It implies broad based and inclusive prevention activities that address a wide spectrum of need.

Youth and community services also have an important role in helping young people to access services, and in making appropriate referrals where needed.

Key Actions

- Broad-based and inclusive prevention activities should be implemented by a wide range of agencies in contact with young people.
- Youth services should ensure that they know where to refer young people with chronic VS-related problems.

4. Prevention

'The fundamental and consistent message which we advocate for all health statements on this topic made to young people as individuals or to wider target audiences is the unambiguous - "VSA is too dangerous, don't do it". Given the mortality risks which attach to this form of drug misuse this message is accurate and it should be repeated squarely and without proviso or confusion. We are not here advocating scare tactics, but the simple, supportable, repeated statement of the plain truth. Abusing volatile substances is like playing Russian roulette.' (ACMD 1995, p6)

Prevention is an important but difficult task. As with other substances, there are two sides to prevention - controlling the supply and reducing the demand; but unlike illegal drugs, these substances are readily available consumer products.

Primary prevention focuses on children and young people; the main locations are therefore schools, colleges and youth services. Parents and carers are also an important target group. Emerging evidence of an older group of misusers may indicate the need for prevention activities aimed at adults.

4.1 Schools and Colleges

'... School is a key arena where the behaviour of young people can be informed and influenced. Schools also provide a structured environment where individuals at risk of exclusion because of their own or parental substance misuse can be identified and helped.

Studies show that effective education programmes are skills-based, use interactive teaching styles to motivate participants, include normative techniques which show that drug use among peers is not as widespread as young people think, and involve other components such as work with parents and families, the wider community, health professionals and the media.' *Working Together to Reduce Harm: The Substance Misuse Strategy for Wales 2008-2018* (page 25, paragraph 12-13)

Guidance for schools on substance misuse education is given in Circular 17/02, *Substance Misuse: Children and Young People*.

Schools and colleges are sites for universal prevention, addressing the whole population. Substance misuse issues are tackled within the school curriculum in Science and in personal and social education (PSE). The personal and social education framework for 7 to 19-year-olds in Wales says that children at Key Stage 2 should be given opportunities to understand: 'the harmful effects, both to themselves and others, of tobacco, alcohol and other legal and illegal substances'; at Key Stage 3: 'the effects of and risks from the use of a range of legal and illegal substances and the laws governing their use,' and at Key Stage 4: 'the personal, social and legal consequences of the use of legal and illegal substances'. (Personal and social education framework for 7 to 19-year-olds in Wales 2008).

'Substance use and misuse' is addressed as one of the seven topics in the Welsh Network of Healthy School Schemes (WNHSS). The document, *Indicators for the Welsh Network of Healthy School Schemes National Quality Award* (WNHSS, 2010) states that schemes of work should: 'identify a range of aspects of substances and reflect policy. This includes tobacco, alcohol, solvents and other legal and illegal substances, medicines and household products'.

When substance misuse is addressed, volatile substances should also be included, but not over-emphasised - there is always the risk of raising interest where none existed. A prior needs assessment that takes account of the levels of understanding of the pupils as well as their substance misuse experience will help with school programme planning. Since VSA is, along with tobacco and alcohol, one of the first substances tried by young people, education about VSA needs to start early certainly in primary schools. However, it should not be addressed in isolation from other substances or other risky behaviours.

Schools' substance misuse policies should include policy on teaching about VSA and have reference to VSA in connection with handling substance-related incidents - including information about the dangers of over-exertion when intoxicated with some volatile substances.

'Good Practice In Substance Misuse Education

1. Effective Substance Misuse Education should start early and be age appropriate.
2. Use should be made of broad life skill approaches as part of a planned personal and social education programme.
3. Substance misuse education aims to empower children and young people to make responsible, well informed decisions about substances.
4. Learning outcomes for substance misuse education should include the key components of the PSE Framework. These are skill development, knowledge and understanding and attitudes and values.
5. Substance misuse education should be non-judgmental, without stereotyping or stigmatisation.
6. Children and young people need to develop the relevant skills within a safe supportive learning environment.
7. Substance misuse education has been shown to be more effective when it is part of a whole organisation approach.
8. Teachers and youth workers are best placed to lead and coordinate the delivery of effective educational programmes that can be enhanced by the use of and support from external agencies.

(Circular 17/02 Substance Misuse: Children and Young People).

Education about VSA should include information, as well as warnings, about the risks of this uniquely dangerous form of substance misuse. But evidence on the effectiveness of substance misuse education demonstrates that information is not enough and that young people need to develop skills for living in a complex society where intoxicating substances are readily available. They also need to be helped to explore their attitudes to substances and formulate a personal stance. Research also points to the importance of so-called 'normative education' - countering the myth that 'everyone is doing it'.

Teachers and other school staff will need training to enable them to effectively address VSA with their pupils. As the *Substance Misuse Treatment Framework Guidance on Good Practice for the provision of services for Children and Younger People who Use or Misuse Substances in Wales* points out:

'Training should be available for all relevant professionals, and advanced training is required by designated staff who have responsibility for educating young people who attend their institutions/organisations about substances and substance misuse' (page 12).

Innovative and creative approaches to educating children and young people about VSA should be encouraged. These include peer-led methods and careful use of external visitors (in the context of a planned substance misuse curriculum) who have expertise in this area.

Community Safety Partnerships (CSPs) are to consider VSA prevention and awareness within their overall substance misuse programmes. In schools, these would be in addition to, and supplement, the work of the All Wales School Liaison Core Programme (AWSLCP). They should also consider addressing how parents are informed about VSA, and help them to address these issues with their children. Consideration should also be given to improving retailers' awareness of, and compliance with, the law on sales of volatile substances.

As part of their substance misuse provision, CSPs should consider joint planning and commissioning in co-operation with other CSPs. This will enable scaled-up services across a wide geographical area which will develop more experience in tackling VSA, and have capacity to respond to any episodic VSA.

4.2 Youth Services

Youth services reach young people in their own environment, on their own terms. The services engage with some of the young people that schools find hard to reach, because of disaffection or truanting. They are more likely to be in contact with young people Not in Employment, Education or Training (NEETs). Such individuals are likely to be more at risk of substance misuse, so youth services have an important role in prevention work with them.

The contribution of youth services will be less structured than substance misuse education in the school context. It will build on the existing knowledge and interests of young people and it will embed substance misuse education (including VSA) within the realities of young people's lives.

Youth service staff will need training to raise their awareness about VSA along with support and resources to help them to address the topic with children and young people.

4.3 The Police

There is extensive school police liaison through the All Wales School Liaison Core Programme which is undertaken by School Community Police Officers, working with PSE teachers in primary and secondary schools in almost all schools in Wales. The Programme consists of 3 main strands, with five lessons in each strand; the strands are: 'Substance Education'; 'Social Behaviour and Community'; and 'Personal Safety'. VSA is included in the first strand in the supplementary menu: schools can choose the VSA lesson if they wish. Officers involved in these lessons have been trained about VSA. School Community Police Officers (SCPO) also undertake supportive school policing.

In July 2005 an All Wales Police campaign to address VSA among young people was launched. Following the launch, the network of School Community Police Officers was used to rapidly circulate campaign materials prior to the summer holidays.

4.4 Other groups

Many other professional groups - social workers, those working with looked after children, probation staff, and others in the criminal justice system, for example - need to have greater awareness of VSA.

Employers have a duty of care to their employees to ensure a safe and healthy workplace. This includes reducing the risk of volatile substances being deliberately misused to achieve intoxication. GBL is used in a range of commercial applications and health and safety officers should be aware of the products involved to ensure any misuse can be swiftly addressed. For example, some coffee bars use nitrous oxide in whipped cream dispensers. Anaesthetic agents are accessible in some medical and veterinary workplaces and their use requires careful control.

4.5 Parents and Carers

Parents and carers (including foster carers) are crucial partners in prevention. To help them fulfil their parental responsibilities in relation to VSA they need dispassionate and non-alarmist information about the subject, as well as encouragement and advice on how to speak with their children about it. Parents should be particularly vigilant if they notice their children using unusual amounts of products such as aerosol deodorants or butane cigarette lighter refills. Schools have a crucial role through their regular contact with parents and carers.

4.6 Retailers, Trading Standards Officers, and industry

'... it is recognised that we need to address the availability and accessibility of volatile substances.' (*Working Together to Reduce Harm: The Substance Misuse Strategy for Wales 2008-2018* p 39)

One unique feature of VSA is the need to work with retailers to control the supply of these products to misusers. Unlike alcohol, these products (with the exception of butane cigarette lighter refills) can legally be sold to under-18-year-olds, except where the retailer has cause to believe that they will be used to achieve intoxication. This places quite a burden on the retailer, who generally has no experience of the issue, or of working with young people. Nevertheless, most retailers want to support the law and are willing to be educated about the topic. Many products in the UK which can be deliberately misused to achieve intoxication carry the 'SACKI' warning: 'Solvent Abuse Can Kill Instantly'. Major retailers routinely include printed warnings at the checkout that they reserve the right not to sell intoxicating products to under-18s, and smaller retailers are generally willing to display such warnings. Controlling sales in more informal or temporary settings, such as markets, is more difficult, and the growth of self-service tills in supermarkets is an increasing concern.

Some Trading Standards Departments and individual Trading Standards Officers (TSO) have taken on the task of informing retailers about their responsibilities under the law and their obligations to their communities. Some areas have also undertaken test purchasing to check compliance with the law. While there have been few prosecutions, 'mystery shopper' actions and subsequent warnings to offending retailers have helped to improve compliance. Annex D provides an example of good practice that has been implemented by a trading standards department.

Poppers and GBL are sometimes available for sale from individuals attending clubs, pubs and music events. Poppers are available from so-called 'head shops' (shops selling drugs paraphernalia) where they are often sold as 'room odorisers' to get around the restrictions on selling substances for human consumption. Poppers and GBL can also be purchased on the internet. Party shop owners should be aware that disposable cylinders containing helium sold to fill balloons may be purchased as a means of committing suicide.

Manufacturers and other parts of the industry producing or distributing products capable of misuse to achieve intoxication have a role to play. The voluntary 'SACKI' warning appears on most aerosols, including imported products. Use of the warning is less common on other products. Some products (such as a certain type of fire extinguisher) have been phased out, and some products have had the misusable ingredient removed (sometimes because of regulations such as the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer). Unpalatable additives have not demonstrated effectiveness. Other product modifications which have been investigated have technical or consumer usability drawbacks.

5. Training

‘The substance misuse workforce is very broad - it includes those working with adults, children and young people and those in specialised and mainstream services in education, treatment and the justice system. Volunteers also play an important role in the delivery of services. Ensuring that this workforce is adequately skilled and resourced is essential to providing appropriate, safe and effective substance misuse interventions.’

(Working Together to Reduce Harm: The Substance Misuse Strategy for Wales 2008-2018 p 57)

The broad substance misuse workforce, as well as school and youth service staff, needs to develop their skills in dealing with VSA. The key skill being greater awareness of the issue, as the Advisory Council on the Misuse of Drugs pointed out:

‘Staff in services such as probation, ... the police, social work in field work and day care settings, community nursing, accident and emergency units, general practitioners and pharmacists will come across volatile substance misusers in a variety of settings. Their basic training should have equipped them to deal with the specific professional issues which led them to encounter a misuser. Despite this basic training, there is a need for all these disciplines to understand the nature and complexity of VSA together with its associated hazards. These disciplines will need to master many of the specific issues together with an understanding of how these relate to their own particular work contexts.’ (ACMD)

Thus, the entire relevant workforce needs to be aware of VSA (including being able to recognise signs and symptoms of misuse), to understand the issues specific to this form of substance misuse, and be able to contextualise their learning to the demands of their work context. Staff working with looked-after children and with those leaving care should be aware that such children may be at higher risk of VS misuse. Since adults, as well as young people, misuse volatile substances, it is important that adult services in contact with vulnerable people (particularly mental health services and those working with homeless people) are aware of VSA.

6. Actions

6.1 Planning, commissioning and developing services

The *Substance Misuse Treatment Framework Guidance for Community Safety Partnerships to Commission Substance Misuse Services* recommends: taking a strategic and systematic approach to commissioning services; promoting a joint approach between agencies within Community Safety Partnerships; and joint commissioning planning across CSP boundaries.

The *Substance Misuse Treatment Framework 'Guidance on Good Practice for the provision of services for children and, younger people who use or misuse substances in Wales* suggests increased use of joint planning to provide services for children and young people. It includes a helpful diagram of the 'planning pathway', and points to the value of pooled funding in providing services for children with complex needs. Local Substance Misuse Action Plans have to be developed and implemented, co-ordinated by local authorities, who work in partnership with other members of the Community Safety Partnerships.

In order to commission services more effectively, more needs to be known about the patterns of VSA across Wales. There is also a need to create knowledge about the impact and effectiveness of different approaches to prevention and interventions.

CSPs contribute to the setting of shared priorities and in commissioning substance misuse services draw on evidence of local needs, including needs identified through the Children and Young People's Partnership (CYPP) and other local partnerships. In doing so, the CSP and CYPP should ensure that their plans are informed by the needs of young people in relation to VSA.

CSPs should ensure that local authorities (LAs) include VSA in their Single Plans, and that VSA be considered in the delivery programmes within all schools in their area.

6.2 Prevention and early intervention

CSPs should encourage that school-based substance misuse education and prevention includes VSA, and that young people especially at risk of VS misuse receive additional support and guidance. Schools, Pupil Referral Units (PRUs), youth services, and other 'universal' provision can also contribute to early intervention through 'low level' actions. CSPs should monitor local circumstances to identify areas which at times might require additional input on VSA - for example, some parks in the summer. Parents and carers must be involved and engaged in prevention activities and given information and support to enable them to help their children.

6.3 Assessment and interventions

Joined up services offering appropriate referrals and seamless support are required. In particular it is important to manage transitions from Children's Services to Adult Services, and between different areas of Wales.

The *Wales Integrated In-depth Substance Misuse Assessment Tool (WIISMAT)*, or the equivalent agency tool, should include an assessment of past and current VSA misuse. The questioning should be sufficiently detailed to identify the range of products that may have been misused. Drug services should ensure that initial assessments include asking about past and current use of **all** substances; where current VSA is identified, it should be considered in the risk assessment. There are no simple urine screening tests for VSA as there are for most other misused drugs (e.g. cannabis, amphetamine, cocaine, opiates).

In an emergency appropriate treatment may be life-saving. It is sensible to encourage all young people to acquire at least a basic knowledge of first aid.

6.4 Staff training

Initial staff training should include information about VSA and to counter the idea that volatile substances are only misused by young people. Ongoing training and supervision should include assistance in working with volatile substance misusing clients. Training is to be mapped across to relevant National Occupational Standards (NOS).

6.5 Controlling supply

It is necessary to work with retailers and trade bodies to control the supply of potential substances which could be misused, where appropriate. Particular concerns are self-service supermarket tills and less formal trading locations, such as markets.

6.6 Monitoring, research and evaluation

Actions on VSA should be evidence-informed, collaborative and achievable. They should be monitored. Sources of data include:

- the Wales National Database for Substance Misuse includes codes for a limited range of volatile substances including 'solvents unspecified', 'toluene (glue)' and 'butane'. It is essential that data on the primary use of these substances is correctly recorded to ensure planners are informed of local needs when planning service provision.
- the Health Behaviour of School-aged Children (HBSC) Survey, a generic health study which is conducted every four years and captures VSA prevalence data.

Websites

UK Charity focused with VSA:	www.re-solv.org
UK Charity focused on VSA:	www.solveitonline.co.uk
DAN 24/7 solvents link:	www.dan247.org.uk
USA National Inhalants Prevention Coalition:	www.inhalants.org
NIDA (USA National Institute on Drug Abuse):	www.inhalants.drugabuse.gov

7. Summary of some key actions for different stakeholders

Group	Basic Actions	Essential Actions	Additional Actions
Community Safety Partnerships	take account of VSA: 1. encourage that it is in school programmes 2. address parents and carers about VSA in the context of other issues	use evidence of VSA: 1. to plan appropriate services 2. support TSOs and retailers in controlling supply	help to improve the evidence base
Service Commissioners	include VSA in commissioned work	use evidence of successful approaches to tackling VSA to commission services	help to improve the evidence base
Service Providers	1. be aware of VSA among clients 2. include VSA in staff training	identify VSA in assessments and use evidence informed interventions to address it	help to improve the evidence base through monitoring and evaluation
Schools	1. include VSA in drug education 2. include VSA in substance misuse incident management policy	1. include knowledge, skills and attitudes in education about VSA 2. inform parents and carers about VSA (in appropriate contexts)	1. train staff to teach about VSA and recognise possible signs and symptoms 2. operate effective whole-school well-being policies
Youth/Community Services	implement broad based and inclusive activities that address VSA in context	refer appropriately those with chronic VS-related problems	liaise with other local agencies to monitor trends and developments
Trading Standards Officers	include VSA in staff training	provide information to retailers about VSA	undertake test purchases, including less formal retail settings such as markets
Police	include VSA in staff training	be aware of VSA in the community, and address issues appropriately	liaise with TSOs and retailers to address VSA-related sales issues

Group	Basic Actions	Essential Actions	Additional Actions
Health Services	include VSA in staff training (particularly in mental health services)	staff understand the dangers of adrenaline treatment and the appropriate use of the defibrillator in VSA emergencies	support the provision of defibrillators in appropriate non health care settings and train staff in their use
Retailers	<ol style="list-style-type: none"> 1. display warning notices on shelving and at point of sale 2. include VSA in staff training 	co-operate with TSOs and the police in regulating VSA sales	

Sources of information

References and key documents

Advisory Council on the Misuse of Drugs, 1995 *Volatile Substance Misuse* Home Office.

Britton J 2007 *Assessing young people for substance misuse* NTA.

Department for Children, Education, Lifelong Learning and Skills 2008 *Personal and social education framework for 7 to 19-year-olds in Wales* Welsh Assembly Government.

Department of Health 2005 'Out of Sight? ... not out of mind' - *Children, Young People and Volatile Substance Abuse (VSA)* <http://www.library.nhs.uk/ChildHealth/ViewResource.aspx?resID=98726> (accessed 16-10-09).

European Monitoring Centre for Drugs and Drug Addictions (EMCDDA), 2008 *GHB and its precursor GBL: an emerging trend case study* EMCDDA (www.emcdda.europa.eu/publications/thematic-papers/ghb) (accessed 16-10-09).

Esmail, A., Meyer, L., Pottier, A., and Wright, S. 1993 'Deaths from volatile substance abuse in those under 18 years: results from a national epidemiological study' *Archives of Disease in Childhood*, 69, 356-60.

Field-Smith, M. E., Butland, B. K., Ramsey, J. D., and Anderson, H. R. 2009 *Trends in deaths associated with abuse of volatile substances 1971-2005*. St George's, University of London. (www.vsareport.org) (accessed 17-10-09).

Flanagan, R.J., Streete, P.J., and Ramsey, J.D. (1997). *Volatile substance abuse: practical guidelines for the analytical investigation of suspected cases and interpretation of results* United Nations Drug Control Programme, Vienna.

Fuller E 2008 (Ed) *Drug use, smoking and drinking among young people in England in 2007* The Health and Social Care Information Centre.

Ghodse H Ahmed K Corkery J Naidoo V Schifano F 2010 *Trends in UK deaths associated with abuse of volatile substances, 1971-2008* (Report 23) St George's, University of London. (www.vsareport.org) (accessed 13-10-10).

Hoare J 2009 *Drug Misuse Declared: Findings from the 2008/09 British Crime Survey England and Wales* (Home Office Statistical Bulletin).

National Assembly for Wales *Substance Misuse: Children and Young People* (Circular 17/02).

National Children's Bureau (NCB) 2005 *Dangerous Highs: Children and young people calling ChildLine about volatile substance abuse* NCB.

National Treatment Agency 2005 *Young People's Substance Misuse Treatment Services - Essential Elements* NTA (http://www.nta.nhs.uk/areas/young_people/young_peoples_guidance.aspx) (accessed 29-09-09).

Ron, M 1986 'Volatile substance abuse: a review of possible long-term neurological, intellectual and psychiatric sequelae' *British Journal of Psychiatry*, 148, 235-46.

Substance Misuse Treatment Framework Guidance on Good Practice for the provision of services for Children and Younger People who Use or Misuse Substances in Wales Welsh Assembly Government.

Substance Misuse Treatment Framework for Wales: Service User Involvement Framework Welsh Assembly Government.

Substance Misuse Treatment Framework: Carers and Families of Substance Misusers: A Framework for the Provision of Support and Involvement Welsh Assembly Government.

Welsh Network of Healthy School Schemes (WNHSS) 2010 *Indicators for the Welsh Network of Healthy School Schemes National Quality Award* Welsh Assembly Government.

Williams, J., Storck, M., the Committee on Substance Abuse, and the Committee on Native American Child Health, 2007 "Inhalant Abuse" *Pediatrics* Vol. 119 No. 5 May 2007, pp. 1009-1017.

Further reading

Advisory Council on the Misuse of Drugs 1995 *Volatile substance abuse*. HMSO.

Advisory Council on the Misuse of Drugs 2003 *Hidden Harm - responding to the needs of children of problem drug users* HMSO.

Association of Chief Police Officers of England, Wales and Northern Ireland 2006 *Joining Forces Drugs: Guidance for Police Working with Schools and Colleges*.

Skellington Orr K and Shewan D 2006 *Review of Evidence Relating to Volatile Substance Abuse in Scotland* Edinburgh: Scottish Executive Substance Misuse Research Programme (<http://www.scotland.gov.uk/Resource/Doc/147377/0038818.pdf>) (accessed 30-09-09) This document has a very comprehensive reference list.

The UK Government's 2005 strategy for tackling volatile substance (*Out of sight - Not out of mind. Children, Young People and Volatile Substance Abuse (VSA) A Framework for VSA*) can be downloaded from <http://www.dh.gov.uk/assetRoot/04/11/56/05/04115605.pdf>.) (accessed 30-09-09).

Flanagan R Streete P and Ramsey J 1997 *Volatile substance abuse: practical guidelines for the analytical investigation of suspected cases and interpretation of results*. United Nations Drug Control Programme, Vienna.

Field-Smith M Butland B Ramsey J and Anderson H 2009 *Trends in deaths associated with abuse of volatile substances 1971-2007*. St George's, University of London (downloadable from www.vsareport.org).

Ron M 1986 Volatile substance abuse: a review of possible long-term neurological, intellectual and psychiatric sequelae. *British Journal of Psychiatry*, 148, 235-46.

MORI 2005 *Volatile Substance Abuse Today: A Qualitative Study* research for the Department of Health) (www.dh.gov.uk/en/Publichealth/Healthimprovement/Drugmisuse/Substancemisusegeneralinformation/DH_4136708) (accessed 10-10-10).

Williams J Storck M the Committee on Substance Abuse and the Committee on Native American Child Health 2007 "Inhalant Abuse" *Pediatrics* Vol. 119 No. 5 May 2007, pp. 1009-1017 (downloadable from: <http://pediatrics.aappublications.org/cgi/content/full/119/5/1009> (accessed 30-09-09)).

Materials for schools and the youth service

Re-Solv, the national charity for VSA, has a number of teaching resources which can be purchased from their website, www.re-solv.org, including the 'Toxic Agents' Activities Pack; 'Hazard Crew' Information Pack, *A Loaded Gun* (DVD and Teachers Manual), the *Youth Workers Activity Pack and Aqua cards* (www.re-solv.org).

The All Wales School Liaison Core Programme (AWSLCP) can be downloaded from www.schoolbeat.org.

About VSA

What it is

VSA - Volatile Substance Abuse - is the deliberate inhalation of volatile compounds to achieve intoxication. It is also called 'solvent abuse' or 'inhalant abuse' (or 'misuse'). The term 'glue-sniffing' was used to describe the misuse of adhesives, but they are inhaled rather than 'sniffed' and are probably less commonly misused than some other products, such as butane gas lighter refills and aerosols, as well as a range of other products, such as propane gas, chloroform, anaesthetic agents (including nitrous oxide ('laughing gas')) and petrol. The requirement for a product to be misused to achieve intoxication is that it contains a volatile, intoxicating compound that can be released in a controlled way from the product containing it. Intoxication may be short-lived and recovery rapid.¹ There is some evidence that misuse among young people may be episodic, with 'epidemics' of misuse in particular areas or at particular times of year.² In this document, the term, 'VSA', is used, although it is not strictly accurate for some (non-volatile) substances.

Classification of VSA

Classification of VSA is problematic. An article in the Journal, *Addiction*, points out:

'Most other classes of drugs of abuse are based on grouping together those chemicals that share pharmacological effects that are related to their abuse. Thus, the ability to produce a similar intoxication, cross-tolerance and cross-dependence and distinctive patterns of abstinence symptoms serves as the primary basis for the classification of drugs of abuse. It is also well established that such a pharmacological classification often predicts epidemiological patterns of abuse. For example, hallucinogen and opiate abuse occurs typically in quite different populations. Unfortunately, there has not been sufficient research to clearly identify pharmacological groupings of inhalants, with the major exception of nitrites. Generally, many inhalants produce pharmacological effects similar to those of alcohol and central nervous system depressant drugs. Volatile general anaesthetics also produce effects similar to many abused inhalants and to depressant drugs [8], and these chemicals, too, have been subject to abuse. In addition, different inhalants have been shown to be associated with different patterns of toxicity based on their cellular sites of action [13]... More research is needed on pharmacological and toxicological differences among inhalants if progress is to be made on inhalant classification based on pharmacology and shared effects.' (Balster, R and others 2009 'Classification of abused inhalants' *Addiction* 104, 6, (June 2009), pp. 878 882)

¹ Recovery is rapid for butane, but much slower for toluene and (probably) for petrol.

² For example, the school summer holidays. Although this may be at least partly due to the greater visibility of young people in the summer months, there are more VSA-related deaths in the summer.

It has been conventional to exclude some products from the definition of VSA. Some substances were excluded because they were thought to have been used by different sub-cultures to those using most other volatile substances; some were excluded because they were not known about or misused until relatively recently. In this document, the following substances are *included*:

- Alkyl nitrites ('poppers'). Recently, there appears to be increasing use of poppers on the 'dance scene'. The UK-wide study of VSA deaths includes alkyl nitrite-related deaths. Some volatile nitrites are suspected to cause cancer.
- Helium gas. There is some evidence of increasing use of this product in recreational settings such as music festivals. Helium is legal to purchase and has legitimate industrial uses, as well as being used to fill party balloons. There are around seven or eight helium-associated suicides in the UK each year.

These substances are neither controlled by the Misuse of Drugs Act 1971 nor by the Medicines Act; they are not caught in the regulatory net and therefore can be neglected.

Also included is gammabutyrolactone (GBL), a non-volatile solvent misused by oral consumption to achieve intoxication which is converted in the body into gammahydroxybutyrate (GHB). GHB effects are similar to those of alcohol, with euphoria, relaxation, reduced inhibition and sedation depending on the dose (for a review see EMCDDA, 2008). GHB has been a Class C drug under the Misuse of Drugs Act since 2003, and GBL (on the recommendation of the ACMD) has been controlled since the end of 2009.

Additional information about these substances is given in the following boxes. A consumer protection approach may be appropriate in helping to reduce the harms associated with them. They are included here partly to assist in raising awareness of their potential for misuse. The effects of these substances are rather different to others usually included under the 'VSA' heading; therefore some of the effects of VSA mentioned in this document do not apply to these substances.

Drugs that do not vaporise easily at room temperature (for example: cocaine, heroin, nicotine, and tobacco,) can also be misused by inhalation (insufflation or smoking), but their pharmacological properties and familiarity distinguish them from the substances discussed here.

GBL

Chemical name: Gamma-Butyrolactone (γ -butyrolactone)

Appearance: Hygroscopic colourless oily liquid with a weak, but characteristic, odour. Soluble in water.

Uses: Solvent and reagent, used as a stain remover (e.g. as alloy wheel cleaner), a superglue remover, paint stripper, and a solvent in some wet aluminium electrolytic capacitors.

Mechanism of intoxication: It is converted into GHB by enzymes in the body. Some people become dependent on the drug and may experience severe withdrawal symptoms requiring medication to ameliorate.

Legal status: GBL and GHB are controlled as a Class C drug under the Misuse of Drugs Act 1971.

Alkyl nitrites ('poppers')

Chemical name: Amyl, butyl, isobutyl nitrite, and isopropyl nitrite collectively known as alkyl nitrites or 'poppers'.

Appearance: Clear, yellow liquids In the UK, nitrites are usually sold as a gold-coloured liquid in small bottles under many different brand names, such as 'TNT' and 'Liquid Gold'. These are often described as 'room odourisers', although their smell is unpleasant when stale.

Uses: Amyl nitrite was used to ease angina. It has been replaced by other medicines: its only remaining medical use is as an antidote for cyanide poisoning.

Mechanism of intoxication: The liquid is inhaled either straight from the bottle or from a cloth. Alkyl nitrites are not strictly 'intoxicating'. They dilate blood vessels, giving a 'rush' as heartbeat quickens and blood rushes to the head. Commonly-reported effects are headaches, dizziness, nausea, a sense of slowing time, flushed face and neck and light-headedness. Some people use nitrites for a prolonged sensation of orgasm, to prevent premature ejaculation and to relax the anal muscles, making anal intercourse easier. They are suspected to be carcinogenic. Mistakenly swallowing the liquid can be fatal.

Legal status: 'Most nitrites are not illegal to manufacture, supply or be in possession of and they are not controlled under the Misuse of Drugs Act. Those selling poppers have also escaped prosecution under the Medicines Act on the basis that nitrites were being sold as 'room odourisers' and not medicines.' (DrugScope website).

Helium gas

Chemical name: Helium (chemical symbol, He) is the second lightest element and the second most abundant element in the observable universe.

Appearance: Colourless, odourless, tasteless, gas that is lighter than air.

Uses: Many industrial uses and used for giving airships lift. Inhaling a small volume of the gas temporarily changes the quality and the timbre of the voice.

Mechanism of intoxication: The pressurised gas in cylinders is used to inflate balloons from which the gas is inhaled. Helium is an inert gas that does not react with other substances, but it displaces air in the lungs, which may give an effect due to reduced oxygen supply. There is a risk of asphyxiation. Inhaling helium directly from a pressurised cylinder is very dangerous and can result in cerebral gas embolism. Helium washes carbon dioxide from the blood and consequently diminishes the respiratory drive that forces us to breathe.

Legal status: Legal.

The Law on VSA

Volatile substances are legal and accessible. However, their sale to under-18-year-olds is controlled by the Intoxicating Substances Supply Act 1985, which makes it illegal for a person to supply products capable of being misused to a young person (under 18 years) if 'he knows or has reasonable cause to believe that the substance or its fumes are likely to be inhaled ... for the purposes of achieving intoxication'. The law does not give a list of substances and the retailer must decide whether a particular young customer is going to misuse a product. Additionally, under the Consumer Protection Act (The Cigarette Lighter Refill (Safety) Regulations 1999), it is illegal to supply gas lighter refills to anyone under 18 years old. The sale of "poppers" containing iso-butyl nitrite is outlawed by The Dangerous Substances and Preparations (Safety) Regulations 2006 which prohibits the supply of isobutyl nitrite to the public because it is a suspected human carcinogen.

Controlling supply

Controlling the supply of readily available and socially useful substances is difficult. The products are many, with a number of different chemicals involved; misusers can substitute products. Information about the harms of various products is limited. The following 'supply side' approaches are possible, but all have limitations:

- **Eliminating the product** - some products are especially dangerous, and there are satisfactory substitutes. In the UK, there have been calls for butane lighter refill cans to be banned because smokers can instead use disposable cigarette lighters.
- **Reformulating the product to remove the intoxicating substance** - the substitution of petrol with un-misusable Opal, an unleaded fuel with low levels of aromatics, has had some success in Australian indigenous communities. Reformulation of correction fluids (such as Tipp-Ex) and some types of fire extinguishers resulted in the elimination of mortality associated with their deliberate misuse.

- **Modifying the product** - For example, adding a chemical to make the product unpalatable. (However, experiments with the bittering agent, Bitrex, have been inconclusive).
- **Modifying the container** - To make misuse difficult. For example, the introduction of the 'vapour phase tap' in many aerosols may have made it a little more difficult for misusers to access the gas propellant.
- **Warning labels on the product container** - Although VS misusers will know which products are misusable, labels can be helpful to alert others (eg Parents) to such products. In the UK, many products capable of being misused carry the 'SACKI' warning: 'Solvent Abuse Can Kill Instantly'. (However, in Germany, such warning labels are banned because of fears that labelling may draw attention to the potential for misuse).
- **Supplier education** - Retailers need information and advice about products' potential for misuse. This is difficult, because of the wide range of products and the many retail outlets.
- **Legal controls** on the sale and supply of products capable of being misused - these exist in many countries, but are difficult to enforce. UK controls on sales to under-18s obviously do not impact on adult VS misusers.
- **Making VS misuse illegal** - VSA is an offence in Japan, Singapore, and the Republic of Korea. However, in most countries the criminalization of misusers of volatile substances is considered counterproductive.

Prevalence of VSA

There is a long history of the inhalation of volatile substances such as diethyl ether (ether) and nitrous oxide ('laughing gas') for pleasure. But it was in the USA during the 1950s and 1960s that publicity about glue sniffing helped to publicize the possibilities of glue as an intoxicant. In the UK, public anxiety about VSA reached a peak in 1983 when there were more press cuttings on the subject than on all other drugs. Although public concern has waned, the problem has not gone away.

Survey evidence shows that experimentation with VSA is quite common among children and young people. For example, a large school-based survey of 11 to 15-year-olds in England found that six per cent had tried VS misuse in the previous year (coming after alcohol, tobacco and cannabis in prevalence level), and five per cent had tried poppers (Fuller 2008). Comparable data for Wales is not available. Volatile substance abuse can be episodic, and become temporarily apparent among groups of young people (for example in children's homes).

Asking questions about VSA

Because of the range of different products that can be inhaled to achieve intoxication, and because the products have legitimate uses, asking questions about whether people have misused them, is tricky. An article in *Addiction* explored these difficulties, the authors finding that, in their USA sample, almost half (49%) of the young people who (at Grade 7) said that they had misused a substance, a year later (at Grade 8) did not report it. Around two-thirds of the 'recanters' were life-time inhalant users who had admitted misuse in Grade 7 and then denied it in Grade 8; while the remaining third were those who incorrectly reported use at Grade 7 and not at Grade 8. The authors conclude: 'Inhalant use recanting is a significant problem that, if not handled carefully, is likely to have a considerable impact on our understanding of the etiology of inhalant use and efforts to prevent it.' (Martino S et al 2009 'Recanting of life-time inhalant use: how big a problem and what to make of it' *Addiction*, 104, 8 (p 1373-1381))

This finding must reduce confidence in estimates of VSA prevalence, and reinforce the importance of careful question wording.

Little is known about adult VSA, but the British Crime Survey, a large-scale annual household survey covering England and Wales (Hoare 2009), found that 2.4 per cent of 16 to 59-year-olds had tried 'glues' (defined as 'including glues, solvents, gas or aerosols' (Hoare 2009, p 3)), a proportion that has remained very constant over several years of the Survey.³ Reported use of these substances in the previous month was virtually nil (however, a household survey is likely to underestimate use). 'Amyl' nitrite⁴ had been tried by 9.9 per cent, and used in the previous month by 0.5 per cent. Younger people in the survey were more likely to report VSA: among 16 to 24 year olds, the British Crime Survey found that 3.2 per cent had tried 'glues', but only 0.3 per cent had used them in the previous month. 'Amyl' nitrite had been tried by 14.3 per cent, and had been used by 1.2 per cent in the previous month. The survey found that last year use of 'amyl' nitrite in their young sample (age 16 to 24 years) was three times as high among those going to nightclubs four or more times in the previous month compared to those going one to three times (a similar pattern was seen with other drugs). 'Amyl' nitrite use was much more common among city-dwellers than others. Levels of 'amyl' nitrite use in Wales were around the average for the whole sample.⁵ GBL and helium use has not been surveyed in national samples.

Volatile substances quickly intoxicate, and small doses swiftly lead to 'drunken' behaviour, similar to the effects of alcohol, although VS misusers may experience delusions and hallucinations (both auditory and visual). Volatile substances are easy to acquire and, therefore, with alcohol and tobacco, are the first intoxicating substances that children try.

³ Data is not disaggregated for Wales alone.

⁴ 'Amyl nitrite' is used inaccurately to describe 'poppers' that actually contain isopropyl nitrite (previously isobutyl nitrite).

⁵ At 1.4 per cent last year use; figures are not given for other time periods. Among 16 to 24-year-olds it was slightly lower in Wales (3.4%) compared to the sample average (4.4%).

While most experimenters with volatile substances do not continue, and VSA does not lead to the use of other psychoactive substances, some among the small proportion that continue to misuse volatile substances can develop serious problems. Some heavy misusers inhale large quantities; one report was of a weekly intake of six litres of adhesive. These people have other difficulties in their lives, and a VSA habit is just one of a multitude of problems.

Although young people from all socio-economic groups experiment with volatile substances, for some of those who are poor or dispossessed, VSA is the 'drug of choice'. Chronic VSA is associated with poor socio-economic conditions, with delinquency and with illegal drug use, disrupted families, and other social and psychological problems. Some children looked after by the local authority may be more likely to misuse volatile substances. The National Children's Bureau (NCB) analysed 356 VSA related calls to *ChildLine* and reported that many vulnerable young people were misusing volatile substances as a response to their very difficult circumstances (NCB 2005). Homeless people and people in prisons and remand centres may be more likely to misuse volatile substances.

VSA problems

Some regular misusers may develop tolerance and need larger quantities to achieve intoxication. While there does not seem to be a dependence syndrome, some people are compulsive and habitual misusers: 'There are ... pharmacological reasons for suspecting that persistent exposure to volatile substances might be able to induce a dependence of the so-called depressant type' (Advisory Council on the Misuse of Drugs 1995, para 3.11).

For every VS misuser, death is always a possibility. It may follow convulsions and coma, inhalation of vomit, respiratory depression, or direct cardiac or central nervous system toxicity. VSA-related deaths may be more common than the statistics show, as post-mortem examination does not always reveal that misuse of volatile substances has occurred, only, in some cases, acute lung congestion and perhaps cold-induced burns to the mouth and throat (Flanagan, Street, and Ramsey 1997).

In the UK, an ongoing annual survey has identified 99 VSA-related deaths in Wales between 1971 and 2008; in 2008 there were two deaths (Ghodse, *et al*, 2010). UK-wide, the death rate peaked in 1990 with 152 deaths, declining since, with 36 deaths being recorded in 2008 (see Table, p33). The proportion of deaths in Wales is slightly higher than in England, but much lower than in Scotland or Northern Ireland (calculated using standardised mortality ratios).

Most of those who die are male, but the proportion of female deaths has increased in recent years. Why female deaths are lower is not fully understood; prevalence studies indicate that roughly equal proportions of males and females try volatile substances. It may be a combination of factors such as young women misusing less frequently, in smaller quantities, in safer circumstances, and utilising different (less dangerous) methods of administration.

Although deaths occur across the social classes in the UK, ‘...in deaths of those under 16, there was a marked difference in mortality between social classes I (the highest) and V (the lowest), with nearly four times as many deaths occurring in social class V...compared with social class I’ (Esmail, Meyer, Pottier, and Wright, 1993, p 358).

Table: VSA-related deaths in the UK and in Wales by year

Year	'71-'98	'99	'00	'01	'02	'03	'04	'05	'06	'07	'08	total
UK (N)	1,780	75	66	63	65	54	48	46	51	59	36	2,343
Wales (N)	70	7	1	1	5	1	4	1	5	2	2	99

Taken from Table 4 in Ghodse, *et al*, 2010

Other dangers arise from intoxication: intoxicated people may be reckless and do bizarre things if they experience hallucinations. Becoming unconscious, they may choke on their vomit. Volatile substances are often misused together with other drugs; especially alcohol and tobacco. Too little is known about the effects of combining volatile substances with other substances, but poly-drug use can potentiate drugs effects and increase risks unpredictably. Smoking is particularly dangerous because of the risk of fire or explosion.

The extent of morbidity from VSA is unknown because reports of chronic toxicity are nearly all single case studies. Most products are chemical mixtures; formulas may change and as the products are not intended for ingestion, manufacturers do not list the constituents. Negative health effects directly related to VS misuse are relatively rare in the UK. These include:

- Many products are inflammable so there is a risk of fire or explosion - especially when VS misuse is combined with smoking.
- Some VS misusers use large plastic bags; suffocation is therefore a risk.
- Spraying substances such as butane gas directly into the mouth may cause cold burns and may lead to pulmonary oedema and suffocation.
- Sensitization of the heart-cardiac arrhythmias may occur if exertion or fright follows VS misuse.

Specific risks come from particular substances, although many of the more toxic ones have been removed from products by consumer protection legislation. However, some, inevitably, still contain hazardous substances, such as petrol. Damage to the lungs, bone marrow, and nervous system is uncommon and generally reversible. Some people are more vulnerable (perhaps genetically) to some harmful effects.

Although there have been reports of brain damage, a review did not find conclusive evidence (Ron, 1986). Some types of volatile substance misuse during pregnancy may lead to increased maternal and fetal morbidity; although it is difficult to identify specific causes of fetal damage. Paternal exposure to volatile substances may also have intergeneration effects.

Key components

'This framework addresses the key components of a comprehensive response to the threats posed to children and younger people by a variety of substances. These components are:

- Universal Early Education Programmes - these convey accurate and balanced information about substances and their use and misuse to children and young people.
- Targeted Programmes - that enable children and young people to take part in discussions among themselves and with well-informed adults aimed at improving their understanding of how they can respond to the endemic presence of substances in our communities.
- Interventions To Improve Potential - these exist to prevent children, young people and young adults moving from use to misuse of substances by anticipating the impacts of risk/protective factors and increasing individuals' resilience.
- Indicated Programmes (generally referred to as treatment) - these are provided as individualised and planned programmes of assessment, intervention and care for certain identified children or young people who are misusing substances.'

Substance Misuse Treatment Framework Guidance on Good Practice for the provision of services for Children and Younger People who Use or Misuse Substances in Wales (from section 2.13, p19).

Treatment Guidance from the National Treatment Agency

'Evidence of inhalant [volatile substances] physical dependence is limited, with case reports suggesting a withdrawal syndrome similar to alcohol withdrawal. Physical symptoms are usually short-lived, though agitation and craving may continue for weeks. It is recommended that inhalant users are routinely assessed, and if intoxicated the young person may need unrestricted observation for some time.

'There is no specific pharmacological treatment recommended but support and symptomatic treatment may be required in the short term for agitation. Clearly, a comprehensive assessment of all needs should be conducted, accompanied by the development of a care plan.'

(Department of Health 2009 *Guidance for the pharmacological management of substance misuse among young people*).

The four-tier strategic framework

... the four-tier strategic planning concept ... is based on the functions required of services in relation to the level or complexity of younger people's needs, their opinions and the levels of specialisation of the services that they require. The tiers are:

- **Tier 1:** Universal primary-level services.
- **Tier 2:** Youth-oriented services.
- **Tier 3:** Services provided by teams that specialise in treating young people who misuse substances.
- **Tier 4:** Very specialised services for young people who misuse substances.

The tiered concept ... emphasises activities and functions rather than the disciplines of professionals or the identities of sectors and agencies and promotes integration between sectors, agencies and disciplines. ... many provider agencies can legitimately deliver services of more than one type and which fall into more than one tier.'

Substance Misuse Treatment Framework Guidance on Good Practice for the provision of services for Children and Younger People who Use or Misuse Substances in Wales (from section 5, p23).

VSA Treatment

A summary of issues in VSA treatment (from a North American perspective) is given by Williams *et al*:

'Little research exists concerning treatment needs and successful treatment modalities specific to inhalant users, so clinicians rely on applying methods that are used to treat other addictive disorders, such as cognitive-behavioral therapy, multi-system and family therapy, 12-step facilitation, and motivational enhancement techniques. Treatment challenges are posed by the diversity of abused inhalants and user populations, co-morbid psychopathology, psychosocial problems, polydrug use, and the physiologic and neurologic effects of inhalant abuse. Treatment of longer-term inhalant users is hindered by the fact that there are few programs designed specifically for inhalant abuse treatment, access to care may be limited, providers generally have a pessimistic view about users' neurologic damage and chance for recovery, and providers often lack sufficient knowledge and training about inhalant abuse, inhalant users, and their treatment needs. Although the principles of effective substance abuse treatment in general apply to inhalant abuse treatment, any treatment regimen must address the many clinical, emotional, social, academic, pharmacologic, neurocognitive, cultural, and demographic factors that make this type of substance abuse unique.' (Williams, *et al* 2007)

The broader context

VSA is not simply a problem of individual pathology, but occurs partly because of failures of social structures. Thus, in the broadest sense, interventions involve healing the family and the community; and making changes in society. Interventions may also include developing pride in one's culture; as Williams *et al* point out:

'Increasing personal and ethnic self-identity through role-modelling has been suggested as helpful in treating some groups of inhalant abusers, and positive cultural identification has been shown to be important in American Indian/Alaska Native populations'(Williams, *et al* 2007).

Service user involvement

It is important that substance misuse services are informed by and developed with consideration given to the views of service users. The Welsh Assembly has produced good practice guidance on service user involvement which has been published as a module of the Substance Misuse Treatment Framework (Welsh Assembly Government 2008). Children and young people should be involved in decisions being made about them, as should, as far as possible and appropriate, their parents and carers.

Involving parents and carers in services for younger substance users and securing their support is essential Therefore, services should work in partnership with younger people and, if appropriate according to age and circumstances, with their parents, carers and other close family members to address substance-related problems Most parents and carers wish to be involved in decisions made about interventions and treatments that their children receive. This framework recognises the valuable roles that parents/carers can play in assisting younger people who have problems arising from substance misuse. Services should actively encourage parental involvement within the boundaries of policy and existing statute and case law on consent and confidentiality. There may also be circumstances in which parental consent is mandatory.

While professionals should seek, in general, to discuss any concerns with the family and, where possible, seek their agreement to making referrals to local authority children's social services this should only be done where such discussion and agreement-seeking will not place a child at increased risk of significant harm. *Substance Misuse Treatment Framework: Guidance on Good Practice for the provision of services for Children and Younger People who Use or Misuse Substances in Wales* (page 36)

Involving parents and carers in interventions with young VS misusers, while generally desirable, can be difficult in practice. Services are not always configured to enable practitioners to involve parents; young people are not always keen to have their families involved; and families themselves may want to 'leave it to the professionals'.

Nevertheless, improved intervention outcomes are likely when families are appropriately involved. This is partly because chronic volatile substance misuse is often part of a dysfunctional family dynamic; therefore, working to change the family's interactions, as well as attempting to change the behaviour of the individual misuser, may pay dividends.

The ACMD's 'Hidden Harm' Report demonstrated that large numbers of children are living in families where adult family members misuse controlled drugs (ACMD 2003). There will be some families where adults misuse volatile substances, although there is no data on the extent of this.

'The organisational processes that are necessary in order to deliver quality services:

1. Family members affected by drug use are actively involved in the organisation.
2. The service works in partnership with other relevant local organisations and services.
3. The service is clear about its principles, aims and focus and how these will be achieved and monitored.
4. The service has in place policies, procedures and protocols covering confidentiality and its legal responsibilities.
5. All service staff are appropriately trained and supported.'

('Quality Standards: Five Essential Requirements': p15-16 in *Substance Misuse Treatment Framework: Carers and Families of Substance Misusers: A Framework for the Provision of Support and Involvement*).

Actions

Hoping to achieve:

'A progressive decline in the number of deaths from VSA by children, young people and adults.

A reduction in the incidence of harm from accidents and trauma as a result of abusing volatile substances.

An increase in public awareness of VSA and its risks.

Increased identification of children and young people abusing or at risk of abusing volatile substances.

A reduction in illegal under-age sales of volatile substances to children and young people.'

(Department of Health, 2005).

‘Community Safety Partnerships (CSPs) should ensure that their plans reflect and inform the local CYPP. Through the participation of their members in the local Children and Young People’s Partnership, CSPs will contribute to the setting of shared priorities and be able to ensure that their work to commission substance misuse services is based on them. It is essential that both partnerships co-operate in the planning of substance misuse services for children and young people. *Substance Misuse Treatment Framework: Guidance on Good Practice for the provision of services for Children and Younger People who Use or Misuse Substances in Wales* (page 40).

Practice Example - VSA prevention and awareness activities in Ynys Môn

When the Red Cross annual report highlighted VSA as one of the top three subjects that young people regularly enquired about on the Red Cross Youth Outreach Bus, the need to provide up-to-date information on volatile substances and the associated dangers was highlighted. The Ynys Môn Substance Misuse Action Team (SMAT) decided to address VSA prevention through awareness-raising for professionals, parents and young people.

VSA training for professionals

Following discussions with service providers and professionals, it was evident that there was limited knowledge about VSA, and that more needed to be done to support young people with VSA-related problems.

The SMAT decided to tender its VSA training and awareness requirements, and the successful bidder invited all professionals working with young people (including voluntary agencies) to attend five training events over one week, in various locations across Ynys Môn. These sessions included:

- History of VSA.
- Types of volatile substances that can be misused.
- Current trends and methods of misuse.
- Main risks of VSA.
- Confronting misconceptions.
- Tackling young people's perceptions of VSA.
- Methods of delivering VSA training to young people.

All the training was provided free, and every attendee received a comprehensive *Solvent Abuse Pack* for future reference. Informal feedback following the training confirmed that all the attendees agreed the training was 'above average' to 'very good', and extremely relevant to their work with young people.

VSA awareness for young people

At what age should VSA issues be addressed? Following discussions with School Community Police Officers (SCPOs) it was decided to continue to inform primary school children about VSA through the All Wales School Liaison Core Programme (AWSLCP). However, to raise the awareness of secondary school children, 'aqua cards' (supplied by the contractors, these were colourful credit-card size cards containing vital facts and contact details) were handed out during educational information days and public events which involved school children aged 13 to 16 years. The cards were extremely popular with young people.

Ynys Môn SMAT has a very close working relationship with the Youth Services Department, which has a proactive approach to substance misuse. The contractor's VSA information packs for youth workers has been condensed and partly translated, and has been distributed to youth club leaders; related training will be provided during the 2011/12 financial year.

VSA information and awareness for parents and carers

An Information Pack for parents of Year 6 pupils moving to secondary school has been developed by the SMAT local alcohol group. The Pack includes advice for parents on drugs, alcohol, peer pressure and bullying. It will also include the 'cupboard leaflet' which was designed by parents and covers the types of products found in the kitchen cupboard; as well as information on how parents could address VSA with their children.

Also enclosed in the Information Pack is a school year calendar themed on alcohol awareness, and the artwork was developed through local colleges. The Packs were presented to pupils on their 'moving up' day in 2010, and it has been agreed by the SMAT to continue in 2011 and thereafter.

To date, there have been no VSA-related deaths on Ynys Môn. Treated incidents of young people involving VSA is currently low, and there are none in the adult service. The local Young Peoples Substance Misuse Services (YPSMS) Service Manager welcomed the suggestion for additional staff training; this will be developed further during the 2011/12 financial year.

Practice Example

Rhondda Cynon Taff County Borough Council - Trading Standards

In Rhondda Cynon Taff, Trading Standards provides information and guidance leaflets to retailers, which have been supported, where relevant, by specific advice during routine visits.

As with issues relating to other age-restricted products, Trading Standards will respond to any complaints or intelligence received about the illegal sale of volatile substances. However, relatively few complaints are received regarding this issue.

Trading Standards has however carried out test purchasing operations in connection with volatile substances. In 2007, 12 attempted purchases were made for underage sales of butane gas lighter refills. On each occasion the sale was refused. In 2009, nine attempted test purchases were made of butane gas cigarette lighter refills with the assistance of volunteer children aged between 13 and 15 years. These resulted in one sale to a 13-year-old girl. The retailer was issued with a simple caution in connection with the offence. Further test purchase operations are undertaken each year.

Any test purchase resulting in a sale of a cigarette lighter refill canister to an underage volunteer is straightforward to investigate, as the offence is committed when the sale is made.

However if a sale were to be made of any other volatile substance to an underage volunteer it would be difficult to take a case to court, as most retailers will claim (with some justification) that they did not realise that intoxication was the purpose for which the youngster purchased the substance.

In effect, the 1985 legislation is almost unenforceable as it is very difficult to prove that the seller had reasonable cause to believe both that the purchaser was under 18 and that the purchaser was likely to inhale the substance. Thus this legislation is of little enforcement value, and does not encourage Trading Standards services to carry out any great level of enforcement.

Practice Example

Carmarthenshire Substance Misuse Action Team

In response to concerns about young people in Year 7 increasingly misusing volatile substances, the Prevention Education and Training sub-group of Carmarthenshire Substance Misuse Action Team established a Solvent Abuse Steering Group. Members of this group included National Public Health Service (NPHS), Dyfed Powys Police, Healthy Schools, the Associate School Improvement Officer for PSE, School Nursing Team, Trading Standards and a local theatre company.

Following the development of a detailed Action Plan, some of the activities that took place included:

- training (conducted by Re-Solv) for Tier 1 and 2 workers, including the youth service, the police, social services, school health nursing and the voluntary sector;
- the trading standards department led a retail awareness campaign which delivered over 350 information packs to retailers, raising awareness of the wide variety of products that can be misused, and explaining their legal responsibilities;
- school nurses in all secondary schools in the county received a poster with advice and helpline numbers;
- the Healthy Schools Scheme and the Associate School Improvement Officer for PSE produced a secondary school resource helping teachers to include volatile substances as part of the PSE curriculum on substance misuse;
- a pilot project run by a local theatre company, aimed at raising awareness of the harms associated with volatile substance misuse through a peer education approach;
- Dyfed Powys Police distributed, county-wide, solvent misuse prevention leaflets to all Year 7 pupils and their parents;
- Dyfed Powys Police, together with partner agencies, undertook awareness sessions as part of schools' parents' evenings.

Abbreviations and other terms used in this document

ACMD	Advisory Council on the Misuse of Drugs
AWSLCP	All Wales School Liaison Core Programme
CBC	County Borough Council
CSP	Community Safety Partnership
CYPP	Children and Young People's Partnership
EMCDDA	European Monitoring Centre on Drugs and Drug Addiction
GBL	Gammabutyrolactone
GHB	Gammahydroxybutyrate
HBSC	Health Behaviour of School Children Survey
LA	Local Authorities
NCB	National Children's Bureau
NOS	National Occupational Standards
NEETs	Young People Not in Employment, Education or Training
NPHS	National Public Health Service
NTA	National Treatment Agency
PRU	Pupil Referral Unit
PSE	Personal and Social Education
Re-Solv	National charity for the prevention of solvent and volatile substance abuse
SACKI	Warning label on some products capable of misuse: it stands for: 'Solvent Abuse Can Kill Instantly'
SCPO	School Community Police Officers
SMTF	Substance Misuse Treatment Framework for Wales
SMAT	Substance Misuse Action Team
TSO	Trading Standards Officer
VS	Volatile Substances
VSA	Volatile Substance Abuse
WIISMAT	Wales Integrated In-depth Substance Misuse Assessment Tool
WNHSS	Welsh Network of Healthy School Schemes
YPSMS	Young People's Substance Misuse Services