



OFFICE OF THE
CHIEF CORONER
OF NEW ZEALAND

Case Study from Recommendations Recap

A summary of coronial recommendations and comments
made between 1 January–31 March 2012

VOLATILE SUBSTANCE ABUSE – BUTANE-BASED SUBSTANCES
FROM ISSUE 2

**Coronial Services of New Zealand
Purongo O te Ao Kakarauri**

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Published by the Ministry of Justice

ISSN 2253-5152 (extract)

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Please also note that summaries of circumstances and recommendations following self-inflicted deaths may be edited to comply with restrictions on publication of particulars of those deaths, as per section 71 of the Coroners Act 2006.

Case study butane

VOLATILE SUBSTANCE ABUSE - BUTANE-BASED SUBSTANCES

In all cases where method is known, the abused substance was a common household product

Butane-related deaths at a glance AS AT 31/8/2012

There have been **63 cases of deaths** relating to the recreational inhalation of butane-based substances between 2000 and 2012

55 of the 63 deceased were **under 24 years old**

- 24 of the deceased were under 17 years old
- The youngest deceased was a 12 year old male. The oldest deceased was a 76 year old male. However the second-oldest deceased was only 32 years old.
- Overall, the number of deaths peaked among 14 year old males (6 deaths) and 19 year old males (8 deaths). The peak age for females was 16 years old (4 deaths).

49 of the 63 deceased were **male**

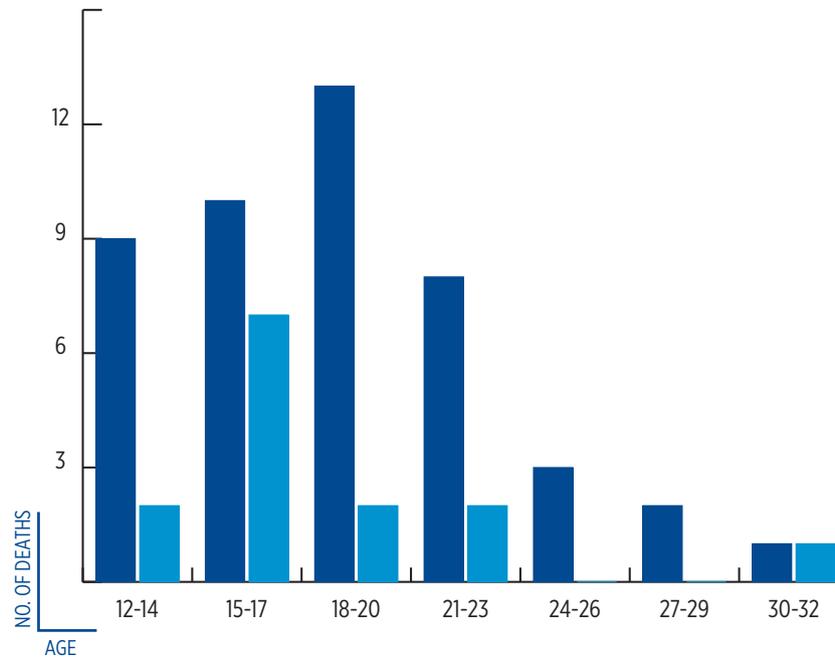
Māori had the highest number of deaths of any ethnic group.

30 of the 63 deceased were of **Māori ethnicity**

Butane-related deaths (2000-12)

Year of death	No. of deaths
2000	4
2001	4
2002	2
2003	8
2004	7
2005	3
2006	6
2007	6
2008	7
2009	4
2010	7
2011	3
2012	2*

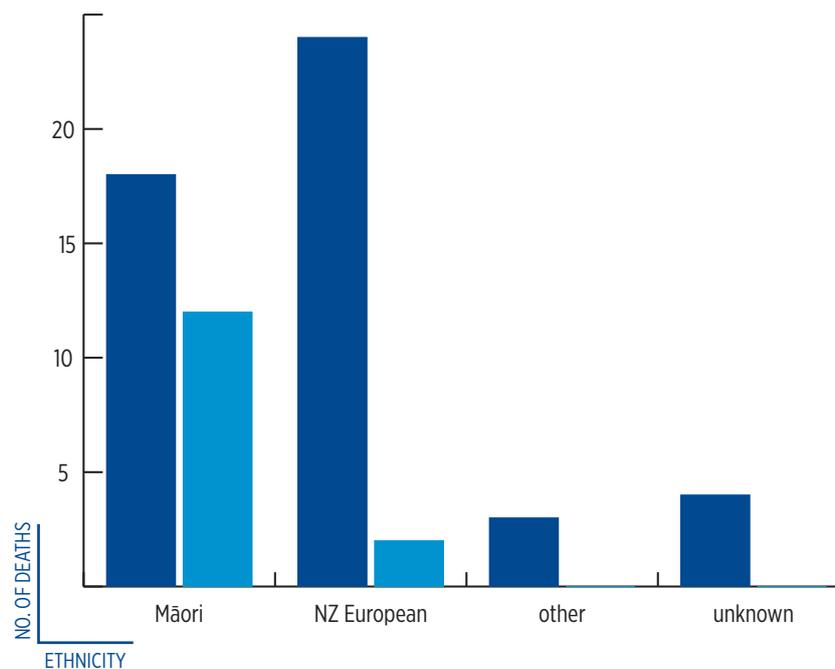
*2012 data is incomplete



MALE
FEMALE

For ease of reference, the gender/age graph does not include the outlier of the oldest death - a 76 year old.

Annual data is by calendar year. Information on coronial cases was captured differently under the Coroners Act 1988 and Coroners Act 2006 regimes (the latter came into force 1/7/2007). Data may contain omissions. This data includes those deaths resulting from abuse of butane-based substances only. It does not cover deaths caused by abuse of all volatile substances.



The issues

Volatile substance abuse (or VSA) is the intentional use of aerosols, solvents and gases for deliberate intoxication. While there are a large variety of products that are abused, this case study is focused only on deaths that result from the abuse of butane-based substances. VSA, including butane inhalation has been an issue in New Zealand for a number of years, particularly among youth. Although there is a lack of New Zealand data about the prevalence of VSA in New Zealand and whether or not it is an increasing trend, coronial data demonstrates the cost of this dangerous practice.

Death from VSA can be random, meaning users can die from their first, fiftieth or hundredth use. It is impossible to guarantee safe use. Moreover, the risk of sudden death does not vanish immediately on cessation of inhalation, instead it persists for several hours.

Based on calls to the National Poisons Centre (NPC) the most commonly abused products in New Zealand are those containing propane and butane or butane alone. Data obtained from NPC indicates that the peak age of inhalant abuse is about 13–15 years, with the frequency of use declining by 17–19 years. Calls to NPC relating to exposure to inhalants have remained relatively constant since 2003.

The difficulty faced by those seeking to control VSA is that most of the commonly abused substances in New Zealand are everyday household products and therefore simply making these products illegal is not practical. Further, many of the substances that are being abused have been found to be readily available to young people from local retail shops.

VSA is extremely complex in nature due to the substances involved, the availability of the products and the culture surrounding abuse. Due to this complexity, the need for an inter-agency approach has been advocated. Multiple areas of intervention and prevention have been identified including regulation, education, research, support of vulnerable young people, individual and community health and family and socio-economic issues.

Coroners have made a number of recommendations and comments relating to butane-deaths over the past decade. Several coroners have expressed concerns regarding the availability of abused substances from retailers and have commented on the need for regulation and strategies to address this problem. Other recommendations have discussed the need for a national education campaign and increased publicity to improve knowledge about the risks of VSA and to help curb this dangerous practice. As can be seen below, coroners in Australia have made similar recommendations in recent years.

For more information on these issues and prevention strategies please see *Responses to volatile substance abuse in New Zealand: Review of the current evidence* (May 2007), New Zealand Drug Foundation. This paper can be accessed at drugfoundation.org.nz/evidence-review/Volatile-substances

The media and volatile substance abuse

The reporting of all volatile substance abuse is recognised as being of a highly sensitive nature. Reporting has the potential to assist in the reduction of abuse, or conversely increase the incidence by promoting use and the availability of products that may be used. Although there are no inhalant specific media guidelines, the following considerations based on those expressed by the 1985 Senate Select Committee on Volatile Fumes in Canberra, Australia may be a useful guide:

- The products subject to abuse should not be named and the methods used should not be described or depicted.
- Reports of inhalant abuse should be factual and not sensationalised or glamourised.
- The causes of volatile substance abuse are complex and varied. Reporting on deaths should not be superficial.
- Stories should include local contact details for further information or support.

The law

The use of legislation to restrict the sales of volatile substances is an intervention approach adopted in some jurisdictions. Based on the experiences of other jurisdictions, the benefits and success of this approach remains equivocal.

Relevant New Zealand legislation

As stated above it is not illegal to possess the vast majority of substances containing butane and there is little legislation prescribing sale and supply of these products in New Zealand. Nevertheless, the following legislation may be relevant.

Policing Act 2008, section 36

Police may detain an intoxicated person (including those under the influence of inhalants) found in a public place for the purposes of detoxification if they believe detaining them will prevent harm to themselves or others.

Child, Young Persons, and their Families Act 1989, section 48

Where a child is found unaccompanied by a parent or guardian in a situation where their physical or mental health may be at risk, police may deliver the child to custody of their parent or guardian with the consent of the child.

Summary Offences Act 1981, section 14B

Makes it an offence for retailers to sell sprays-cans to under 18 year olds and requires that spray-cans are only accessible by retail staff. Note that the intention of this provision was to reduce graffiti rather than being related to inhalant abuse and it only covers spray cans that contain 'paint, dye, ink, or some other pigment'. Nevertheless the provision does give retailers the right to refuse supply in those specific circumstances.

Other jurisdictions

In other jurisdictions, legislation has been introduced to prevent the sale of commonly abused inhalants to young people.

United Kingdom (UK)

The Cigarette Lighter Refill (Safety) Regulations 1999

These regulations make it an offence to supply any cigarette lighter refill canister containing butane or a substance with butane as a constituent part, to any person under the age of 18 years. The maximum penalty for a breach of the regulations is a six-month prison sentence, a fine of £5,000 or both.

Intoxicating Substances (Supply) Act 1985

Under this act it is illegal for a person to sell or supply a substance to anyone believed to be under the age of 18 or anyone acting on behalf of someone under that age, if he or she has reasonable cause to believe that the substance may be inhaled for the purpose of intoxication. The statute does not make it an offence, however, to purchase and subsequently abuse solvents and other volatile substances. The Act is applicable in England, Wales and Northern Ireland.

Scottish Common Law

The supply or sale of solvents or volatile substances to any person, knowing that these substances will be abused has been held to constitute criminal conduct. Courts have imposed fines of up to £12,000 and prison sentences of two years.

Australia

It is an offence in Queensland, Western Australia, Victoria, South Australia, New South Wales and the Northern Territory to knowingly supply an inhalant to a person for the purpose of intentional inhalation:

- Queensland – section 23 of the Summary Offences Act 2005
- Western Australia – section 206 of the Criminal Code Act 1913
- Victoria – sections 57 and 58 of the Drugs, Poisons and Controlled Substances Act 1981
- South Australia – section 19 of the Controlled Substances Act 1984
- New South Wales – section 10D of the Summary Offences Act 1988 (refers only to storage of spray paint)
- Northern Territory – section 52 of the Volatile Substance Abuse Prevention Act 2005, section 49 regarding management areas.

Voluntary supply reduction strategies

A number of voluntary approaches to sales restrictions on volatile substances have also been undertaken across jurisdictions. Voluntary codes of conduct and retailer education have been used in the Northern Territory, Queensland, Western Australia, Victoria and the UK.

In 2008, the New Zealand Drug Foundation also created a guide for retailers on managing the sale of volatile substances – accessible at volatilesubstances.org.nz

For help or support

DrugHelp drughelp.org.nz

A New Zealand website for people looking for help with their own or someone else's drug use. Based around stories of people personally affected by drug use, this website provides high quality, objective information on drug use.

Poisons Centre poisons.co.nz

You can contact New Zealand's Poison and Hazardous Chemicals Information Centre toll free for advice at 0800 POISON (764 766). Lines are open 24 hours a day, every day. In case of poisoning or inhalation (intentional or not) call immediately.

Alcohol Drug Helpline www.adanz.org.nz

Provides free and confidential support for anyone concerned about their own or someone else's alcohol or drug use. Experienced counsellors are available to provide confidential and non-judgmental help when you need it and can also refer you to a local treatment provider. The helpline (0800 787 797) is open from 10am–10pm, every day.

Youthline youthline.co.nz

There are a number of ways you can access Youthline's helpline services:

- 0800 37 66 33
- free txt 234
- talk@youthline.co.nz
- youth info and forum at urge.co.nz

Lifeline www.lifeline.org.nz

Confidential 24 hour counselling at 0800 543 354. Lifeline also has user-focused services such as Kidsline for kids aged under 15 and Chinese Lifeline for Mandarin and Cantonese speakers.

In an emergency, call 111.

Relevant recommendations from this issue

CASE NUMBER

CSU-2010-WGN-000478/2012 NZCorC 6

DATE OF FINDING 20 March 2011

CIRCUMSTANCES

The deceased, a 16 year old male, was found lying face-down on the riverbank of Black Creek at the end of Fullerton Grove, Wainuiomata. The cause of his death was found to be butane toxicity, self-ingested, but not with the intention of ending his life.

The deceased had a history of drug abuse and it was estimated by a friend that in the period immediately prior to his death, he was consuming approximately a can of butane gas every day.

Although the court was unable to know the exact chain of events that preceded and led to this death, the deceased's faculties were undoubtedly adversely affected by the abuse of butane. After huffing butane, the deceased collapsed or lost his balance, has fallen forwards and remained lying where he fell. A butane gas can was found lying by his body. It is likely that his collapse or fall was associated with a cardiac arrhythmic event or a reflex cardiac arrest. As stated by Dr White, cardiac dysrhythmias leading to cardiac or cardiorespiratory arrest are presumed to cause most deaths.

COMMENTS AND RECOMMENDATIONS

The Coroner commented that, based on the number of deaths due to butane-toxicity that coroners deal with, 'clearly, inhalation of butane resulting in death remains a serious problem'.

The Coroner recommended to the Chief Executive of Ministry of Youth Affairs that the government take a fresh look at supply reduction strategies and the policing of volatile substance abuse in the light of the evidence contained in these findings.

Response from Ministry of Social Development

The Ministry of Social development provided the following response to the Coroner's recommendation directed to the Ministry of Youth Development:

As from 1 July 2011, the Ministry of Youth Development (MYD) was integrated into the newly formed Youth Policy Group under the Deputy Chief Executive responsible for policy in the Ministry of Social Development. The Youth Policy Group is made up of MYF (comprising funding, youth engagement and regional teams focussed on achieving active youth citizenship outcomes, a youth justice policy team, and a youth employment and education policy team.

Given this, and with respect to the Coroner, this recommendation largely falls outside of MYD's responsibility, and would be more usefully addressed to other agencies.

However, the Coroner's recommendation is timely. While this young man's death was not found to be suicide, the issue of young people's access to toxic substances is likely to be raised in the current review of the Suicide Prevention Action Plan that is being led by the Ministry of Health. It is also one of the topics currently on the Child and Youth Mortality Review Committee's agenda.

The Youth Policy Group, Ministry of Social Development, along with other agencies, is involved with both of these discussions.

This young man's death is not simply about solvent abuse. It raises questions about wider issues relating to the way we support our young people; how we help them get through tough times and how we make sure they get on the path to a positive future.

This is a joint responsibility across government and the encouraging thing is that a lot is happening in this space at the moment.

IN BRIEF Other recommendations or comments made by coroners concerning butane-related deaths

CASE NUMBERS

Three inquests held under the Coroners Act 1988:

1. Inquest held 18 November 2004, Christchurch
2. Inquest held 8 September 2004, Christchurch
3. Inquest held 8 September 2004, Christchurch

CASE SUMMARIES

1. The deceased, a 14 year old boy, died after inhaling butane. His death was caused by a combination of cardiac arrhythmia related to butane inhalation. The deceased was involved with the Police Pan Pacific Youth Project and Child Youth and Family Services.
2. The deceased was 18 years old and died from the effects of butane inhalation.
3. The deceased was 16 years old and died after inhaling butane at a party.

COMMENTS AND RECOMMENDATIONS

In all three cases listed above, the Coroner recommended that the findings be referred to the Ministry of Youth Affairs, Ministry of Health and Ministry of Education in relation to their consideration of strategies and programmes designed to deal with solvent abuse among young people. The Coroner commented that these cases highlight the issue of the ready availability through retail outlets of propellants that are susceptible to abuse particularly by young people.

In the first case the Coroner also raised the issue of the size of warning labels on the product used by the deceased and whether the requirements as to the size of the warning be substantially increased. He further recommended that Child, Youth and Family (CYF) and the Police Pan-Pacific Youth Project better formalise lines of communication on issues of relevance affecting people in the care of CYF.

CASE NUMBER

Under Coroners Act 1988 – Joint inquest into six deaths resulting from substance abuse, 6 September 2004, Wellington.

CIRCUMSTANCES

This was a joint inquest into the deaths of six, otherwise unrelated, young people who died from the effects of butane inhalation. The deceased were aged 15, 15, 17, 21, 22, and 27. The deceased were a combination of occasional and regular butane abusers.

COMMENTS AND RECOMMENDATIONS

The Coroner made a number of recommendations addressed to the Minister of Health and the Chair of the Ministerial Committee on Drug Policy, Hon Jim Anderton MP:

- That government institute a national public education campaign to prevent the use of illicit drugs by children and young persons and to educate them and their parents/caregivers of the dangers involved.
- That the primary goal of the government's new National Drug Policy be focused on prevention and that specialist substance abuse services be established throughout the country to cater to the needs of children and young people with drug-related problems. The Coroner further recommended improved access to primary health care relating to drug-related problems and stronger partnerships between drug treatment services and mental health services.
- That training be provided for teachers, school counsellors, health-care workers and associated professionals in all forms of substance abuse and the recognition, treatment and management of drug problems.
- That the National Drug Education Programme in schools be delivered by people with relevant special training and experience; that the primary teaching principle should be prevention of the uptake of harmful drug use; and that the needs of such specialist agencies as WellTrust for adequate funding be addressed with urgency.
- That government develops a national, community-based programme for parents, caregivers and young people designed to improve knowledge at community/family/individual level of all aspects of normal childhood and adolescent development, developmental problems in the areas of physical, mental and sexual health, the dangers to health of all drug abuse and the availability of facilities and services for help.
- In the case of Māori youth (as recommended by the Parliamentary Health Committee Inquiry Report into the Mental Health Effects of Cannabis and endorsed by this court), the further development of a 'holistic, community-based strategy using iwi, education, health and justice linkages to confront [drug] and cannabis use at every level of the community'.

CASE NUMBER

Under Coroners Act 1988, inquest held 16 May 2005,
Nelson District Court

CIRCUMSTANCES

The deceased was 19 years old and was known to inhale butane gas. Inhaling butane caused sudden decrease in cardiac output leading to cardiac arrest. The retail store, where the deceased and his friend purchased the butane products has since voluntarily removed butane gas from the shelves. It can now only be purchased on request and on producing identification confirming an age of 16 years.

COMMENTS AND RECOMMENDATIONS

The Coroner recommended that steps be taken to regulate the sale of products such as butane gas and other substance abuse materials, such as containing the product behind a closed counter and it only being able to be sold to the public on production of identification of a minimum age of 18 years.

CASE NUMBER

CSU-2008-DUN-000290

CIRCUMSTANCES

The deceased was a 22 year old beneficiary with a history of drug abuse. He had been using butane on a daily basis for several months. He died from butane intoxication.

COMMENTS AND RECOMMENDATIONS

The Coroner referred the fact that the inhalant product used by the deceased was sold without a health warning to the Ministry of Consumer Affairs and Ministry of Health with a request that an obligation to include a health warning, as to the dangers of inhaling, become mandatory.

CASE NUMBER

CSU-2008-ROT-000268

CIRCUMSTANCES

The deceased, a 14 year old boy, died after inhaling butane. His death was due to positional asphyxia associated with butane inhalation.

COMMENTS AND RECOMMENDATIONS

The Coroner referred the findings to the Ministry of Youth Affairs, Ministry of Health and Ministry of Education for consideration in respect of their strategies and programmes designed to deal with solvent abuse amongst young people. He commented that one of the strategies should be to prevent ready access by young people to solvents.

CASE NUMBER

CSU-2008-DUN-000505

CIRCUMSTANCES

The deceased, a 19 year old, died after inhaling butane. He died of respiratory failure due to inhalation of a toxic solvent.

COMMENTS AND RECOMMENDATIONS

The Coroner recommended that the Ministry of Health establish or enhance an education programme drawing to public attention the dangers of sniffing or inhaling ('huffing') toxic products that are not designed or intended for inhalation.

CASE NUMBER

CSU-2010-DUN-000057

CIRCUMSTANCES

The deceased, a 21 year old student, died at her home, the cause of her death being acute cardio-respiratory failure due to poison by inhalation of butane.

COMMENTS AND RECOMMENDATIONS

The Coroner referred to comments from Dr Michael Beasley of the New Zealand National Poison Centre that inhalant abuse is a persisting problem in New Zealand and is an extremely dangerous practice. Dr Beasley recommended continued education and other preventive measures are essential to help curb this practice.

The Coroner recommended that a copy of the finding be forwarded to the Medical Officer of Health with a request that further publicity be given to the dangers of inhalant abuse.

CASE NUMBER

CSU-2010-DUN-000431

CIRCUMSTANCES

The deceased, a 17 year old, was inhaling butane while being driven around by a friend when he passed out. The cause of his death were the effects of butane inhalation.

COMMENTS AND RECOMMENDATIONS

The Coroner recommended that a copy of the finding be forwarded to Ministry of Health so that further publicity be created in relation to the dangers of the inhalation of substances not designed for the purposes of inhalation.

Australian coroners' recommendations concerning butane-related deaths

Recommendations by coroners in other jurisdictions may be a useful guide as to how issues surrounding VSA have been addressed outside New Zealand.

CASE NUMBER

2236/02 – Coroners Court of Victoria

DATE OF FINDING 28 April 2004

CIRCUMSTANCES

The deceased, aged 13, inhaled butane with a friend that had been purchased from a local discount shop and collapsed shortly after. The cause of his death was described as volatile substances abuse (butane).

COMMENTS AND RECOMMENDATIONS

The Coroner recommended that consideration be given to prohibiting or restricting the sale of volatile substances, in particular cans of lighter fluid, to minors in the same way that the sale of alcohol and tobacco is restricted.

The Coroner also recommended that consideration be given to placing warnings on cans of lighter fluid and other volatile substances, that the inhalation of the fumes can cause death after either occasional or regular use and that it can also cause brain damage, fits and fainting.

These recommendations were endorsed in case number 3608/04 at the Coroners Court of Victoria on 20 June 2005.

CASE NUMBER

5571/08 – Coroners Court of Victoria

DATE OF FINDING 29 April 2011

CIRCUMSTANCES

The deceased, aged 30, died after inhaling butane. He had other untreated drug dependence issues. His cause of death was butane toxicity.

COMMENTS AND RECOMMENDATIONS

The Coroners Prevention Unit was requested to review previous butane-inhalant related deaths to assist in the consideration of prevention strategies. Based on this research, the Coroner made in-depth comments relating to retailer education, product modification, health worker education and relevant legislation. A summary of these comments is below:

Retailer education is a widely used strategy for reducing incidence of inhalant abuse. The Coroner identified the following important aspects of retailer's conduct to reduce abuse and restrict access:

Retailers need to understand their legislative obligation not to sell inhalants to those that might abuse them.

Inhalants should not be displayed openly and should be stored where customers must ask for them.

Strategies are needed to be in place to refuse sale of inhalants to suspected abusers.

In order to effectively educate retailers the Coroner recommended a multi-pronged approach including the following: working with retail traders associations and other relevant bodies on a ongoing basis to identify relevant businesses selling inhalants and distribute education materials to them; that a database of retailers be maintained so that they can reminded of their legal obligations with regard to selling inhalants; that there is engagement with local community groups and workers to work with retailers and identify those where abusers are obtaining inhalants; that an annual audit process is implemented whereby compliance with the retailer code of conduct can be measured.

The Victorian Department of Human Services developed a suite of resources titled Responsible Sale of Solvents – A Retailer's Kit in 2002 which addressed retailers obligations under the Drugs, Poisons and Controlled Substances Act 1981 (Vic), as well as strategies for how to store solvents in shops, how to refuse a sale to a probable substance abuser, and so on. The Coroner made a recommendation that the Department of Health review the contents of this kit to ensure it is up-to-date and that it develops a process to distribute it proactively. The kit can be found here www.health.vic.gov.au/aod/pubs/solvents.htm

The Coroner stated that modifying products so that concentration and inhalation of butane is made more difficult or more unpleasant, is often discussed as a strategy for reducing incidence of inhalant abuse. The Coroner commented that there are currently no modifications to butane lighter refill cans that are realistically able to be implemented and that are supported by current evidence as being effective and deterring abusers. Concerns were also expressed that with so many different products that can

be abused through inhalation, when any particular product is targeted for modification, abusers can simply substitute another product. The Coroner commented that the Department of Health should be encouraged to commission research in the area of product modification and substitution.

The Coroner commented on the use of health worker education and harm reduction strategies, such as providing instruction on the safest manner to inhale butane and what to do in the case of an overdose. While this is advocated by some experts, others warned that care must be taken to only target those people already using inhalants and not current non-users. The Coroner commented that the Department of Health should consider developing a professional education resource for youth workers, health workers, drug and alcohol workers, child protection workers and others who have contact with inhalant abusers, to ensure they are familiar with current best practice in managing inhalant abuser risks.

The Coroner also commented on the legislative regime surrounding restricting access to butane. She referred to the fact that in the UK, the sale of butane lighter refills

is restricted to those aged 18 years and over. She further commented that a similar law was recently proposed and debated in Western Australia and that in some Australian states age-based bans for other products (such as spray cans) have been introduced.

The Coroner commented that available evidence and expert opinion is divided on whether using legislative changes to further regulate the sale of butane and propane to those aged under 18 years should be canvassed in Victoria. Research findings, particularly from the UK, suggest that restricting access might not cause a lasting reduction in deaths. Additionally, inhalant users can simply shift to other products that are not regulated or are less well regulated. The Coroner commented that the Department of Health should consider meeting with inhalant abuse experts to explore whether there is an evidence base and rationale for banning butane sales to people aged under 18 years in Victoria, as has been done already with some other products (such as spray cans) interstate.

Acronym glossary

Acronyms used in this Recommendations Recap

ACC	Accident Compensation Corporation
ACRP	Auckland Central Remand Prison
ARWCF	Auckland Regional Women's Corrections Facility
CARM	Centre for Adverse Reactions Monitoring
CCCA	Climate Control Companies Association
CCTV	Closed-circuit television
(H)CFC	chlorofluorocarbon (Hydrochlorofluorocarbons)
CT scan	aka CAT scan
CYF	Child, Youth and Family
CYMRC	Child and Youth Mortality Review Committee
DHB	district health board
CMDHB	Counties Manukau District Health Board
NMDHB	Nelson Marlborough District Health Board
SDHB	Southern District Health Board
DoL	Department of Labour (now Ministry of Business, Innovation and Employment)
ECG	echocardiogram
EPS	Emergency Psychiatric Services
FMC	Federated Mountain Clubs (of New Zealand)
GP	General practitioner
HDC	Health and Disability Commissioner
HVAC+R	heating, ventilation, and air conditioning + refrigeration
ICU	Intensive care unit
IPENZ	Institution of Professional Engineers New Zealand
IRHACE	Institute of Refrigeration, Heating and Air Conditioning Engineers of New Zealand
kmh	kilometres per hour
LGNZ	Local Government New Zealand
MEMP	Mount Eden Men's Prison
MHAU	Mental Health Admission Unit
MYD	Ministry of Youth Development
NARA	New Arrival Risk Assessment
NPC	National Poisons Centre
NZTA	New Zealand Transport Agency
ORC	Otago Regional Council
PCLC	prisoner cell and location checks
PSOM	Prison Services Operation Manual
RLTB	Refrigerant Licence Trust Board
VPS	voluntary protective segregation
VSA	volatile substance abuse



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