

FINDING INTO DEATH WITH INQUEST

*Form 37 Rule 60(1)
Section 67 of the Coroners Act 2008*

Inquest into the Death of DAVID ANDREW TRENGROVE

Hearing Dates: 16 & 17 August 2010

Appearances: Leading Senior Constable R. Antolini, PCSU¹ - Assisting the Coroner
Mr R. G. McCloskey of Counsel - on behalf of North Western Mental Health Service
Mr N. Murdoch of Counsel - on behalf of Dr Thai Lim

Findings of: AUDREY JAMIESON, Coroner

Delivered On: 18 May 2012

Delivered At: Coroners Court of Victoria
Level 11; 222 Exhibition Street
Melbourne 3000

¹ PCSU = Police Coronial Support Unit

I, AUDREY JAMIESON, Coroner having investigated the death of DAVID TRENGROVE
AND having held an inquest in relation to this death on 16 and 17 August 2010
at Melbourne

find that the identity of the deceased was DAVID ANDREW TRENGROVE
born on 22 November 1969

and the death occurred on 8 September 2008
at 47 Speight Street, Thornbury, Victoria 3071

from:

1a. TOXIC EFFECTS OF MORPHINE IN A SETTING OF BENZODIAZEPINE DEPENDENCY
in the following circumstances:

BACKGROUND CIRCUMSTANCES:

1. David Andrew Trengrove² was 38 years of age at the time of his death. He was single but had been married to Ms Mary Dimu between 1996 to 2001. At the time of his death, he lived at 47 Speight Street, Thornbury with his father, Robert (Bob) Trengrove. He had been unemployed for a number of years after a business adventure, entered into with Ms Dimu, failed and David was declared bankrupt.
2. In his late teens David developed an interest in bodybuilding and took steroids for these purposes although the duration of his administration/ingestion of steroids is not known. David's medical history included a significant knee injury sustained in a motorcycle accident in 1998 for which he required reconstruction surgery, performed by Mr Rodney Dalziel at Victoria House in or around July 1998. He had been prescribed pain relief medication since that time, much of which included the opiate, codeine. He had been prescribed MS Contin for chronic pain for approximately ten years. David had also sought medical treatment and medication for back pain and agitation and anxiety associated in part with his business and marriage failures and for which he had been prescribed diazepam and other benzodiazepines at variable doses. David also suffered from excessive sweating – the cause of which is not entirely clear.
3. David also had a significant history of mental ill health including schizophrenia, depression and psychosis. He had been admitted as an involuntary patient to the Alfred Psychiatric Unit in October 2005 and to St Vincent's Hospital Psychiatric Unit for 4 weeks in April 2006. At the time of his death, David was on a Community Treatment Order (CTO) for non-compliance with medication and lack of insight into his illness. His psychiatric care was supervised by North Western Mental Health Services. He had described to his mental health team a history of use of MDMA (ecstasy), protein supplements, alcohol and injecting testosterone and other steroids when he was competing in the body building industry in the past.³ He was believed to be using excessive doses of valium and often demanded benzodiazepines and injection of testosterone. He was prescribed the antipsychotic medication Olanzapine 15mg nocte and Injection

² It was requested by Bob and Rhonda Trengrove that their son be referred to as "David" rather than "Mr Trengrove" during the course of the Inquest. For consistency, I have in most part, also used only his first name in the written Finding.

³ Exhibit 4 – Statement of Dr Surya Tipirneni dated 16 September 2008.

Zuclophenthixol 150mg every three weeks and had been advised by his psychiatrist, Dr Surya Tipirneni, to commence the anti-depressant medication, Duloxetine 60mg nocte, however, David had declined this medication as he did not think he was depressed.⁴ Overall, his mental state had remained fairly stable since his admission in April 2006. He had not expressed any suicidal intent or plan.⁵

4. On 4 September 2008, David was seen at home by his case manager, psychiatric Nurse Craig Hadley, who administered the injectable antipsychotic drug zuclophenthixol to David. There were no acute concerns about his mental state at the time.

SURROUNDING CIRCUMSTANCES:

5. In the evening of 7 September 2008, David dined with his father Bob at a restaurant. It was Father's Day. Bob thought David to be unusually tired - *not himself*. On returning home, David immediately went to bed and was heard by Bob to be snoring *incredibly loudly*.⁶
6. On 8 September 2008, Bob Trengrove could still hear David snoring and breathing loudly at the time he was leaving the house. When Bob returned at approximately 9.30pm, he located David on his bed but lying partially on the floor. Bob telephoned emergency services seeking an ambulance. Attending ambulance paramedics were unable to render any effective medical treatment to David and he was delared deceased at his home.

JURISDICTION:

7. At the time of David's death, the *Coroners Act 1985* (the Old Act) applied. From 1 November 2009, the *Coroners Act 2008* (the new Act) has applied to the finalisation of investigations into deaths that occurred prior to the new Act commencement.⁷
8. In the preamble to the new Act, the role of the coronial system in Victoria is stated to involve the independent investigation of deaths for the purpose of finding the causes of those deaths and to contribute to the reduction of the number of preventable deaths and the promotion of public health and safety and the administration of justice. Reference to preventable deaths and public health and safety are referred to in other sections of the Act.⁸
9. Section 67 of the new Act describes the ambit of the coroners' findings in relation to a death investigation. A Coroner is required to find, if possible, the identity of the deceased, the cause of death and, in some cases, the circumstances in which the death occurred.⁹ The 'cause of death' generally relates to the *medical cause of death* and the 'circumstances' relates to the *context* in which the death occurred.

⁴ T @ p58

⁵ Exhibit 4 – Statement of Dr Surya Tipirneni dated 16 September 2008

⁶ Statement of Bob Trengrove dated 29 November 2008

⁷ Section 119 and Schedule 1 - *Coroners Act 2008*

⁸ See for example, sections 67(3) & 72 (1) & (2)

⁹ Section 67(1)

10. A Coroner may also comment on any matter connected with the death, including matters relating to public health and safety and the administration of justice.¹⁰ A Coroner may also report to the Attorney-General and may make recommendations to any Minister, public statutory authority or entity, on any matter connected with a death which the Coroner has investigated including recommendations relating to public health and safety or the administration of justice.¹¹

Identification:

11. The identity of David Andrew Trengrove was without dispute and required no additional investigation.

INVESTIGATION:

Medical investigation:

12. On 14 September 2008, an autopsy was performed by Associate Professor (A/Prof) David Ranson, Forensic Pathologist at the Victorian Institute of Forensic Medicine (VIFM). David weighed 149 kilograms at the time of his death. Evidence of natural disease in the form of early coronary artery atherosclerosis, cardiomegaly and a mild degree of hepatic steatosis was identified in the post mortem examination. There was no evidence of significant trauma capable of causing death. Toxicological analysis revealed a potentially toxic level of morphine in blood of 0.45 mg/L and a high urine level of ~490 mg/L. Diazepam and its metabolite was also identified as was Codeine. A/Prof Ranson, attributed the cause of death to the toxic effects of morphine.
13. Further toxicological analysis detected the antipsychotic medication, Zuclopenthixol, the metabolite of the benzodiazepine, Clonazepam and the antidepressant, Alprazolam. The anti-emetic, metoclopramide was also identified. Urine tested by the Australian Government National Measurement Institute was negative for prohibited substances (anabolic agents).

Police Investigation:

14. A significant amount of prescription medications and steroids were located in David's bedroom and in other rooms within the house. The steroids included Testogel, a prescribed steroid and a range of animal anabolic steroids, Ilium Stanabolic injection, Deca 50 injection, Filybol injection and Supertest injection. A large number of syringes were also located.
15. No suspicious circumstances were identified.
16. The investigation identified that in addition to the long term prescribing of MS Contin, David was also prescribed a number of different benzodiazepines. David appeared to "doctor shop" for his prescription medication and one general practitioner was identified as having prescribed David a number of different benzodiazepines at the one time.

¹⁰ Section 67(3)

¹¹ Section 72(1) & (2)

Expert opinion:

17. Dr Angela Sungaila, Forensic Physician at the VIFM provided an expert opinion¹² on the prescribing patterns of the doctors involved in David's medical management. Dr Sungaila identified the following:
18. David had attended Dr S Grokop since 1992. Prescriptions supplied by Dr Grokop and dispensed at Lewis Pharmacy between September 2007 and 8 September 2008 included:
 - MS Contin 100mg x 20, 19 times
 - MS Contin 60mg x 20, 10 times
 - Clonazepam 2mg x 50 tabs 2 times
 - Codeine/Paracetamol combination dispensed on a regular basis
 - A number of diazepam 2mg x 50 prescriptions.
19. Prescribed by Dr Grokop and dispensed at Pulse Pharmacy:
 - MS Contin 100mg x 20 tabs, 7 times and 60mg x 20 tabs 1 time
 - Numerous dispensing of codeine/paracetamol tabs usually 20 at a time but several times 180 with 2 repeats or 240 with 1 repeat.
20. David had attended Dr Ahmet's surgery seven times in eight years mainly for chronic knee pain. His last time being on 28 August 2008 and on that date, Dr Ahmet prescribed codiene/paracetamol combination for back pain.
21. David attended Dr Michael Plunkett's surgery for treatment of leg pain. Between 16 April 2008 and 7 August 2008, Dr Plunkett prescribed codiene/paracetamol combination tablets 20 each month. These were dispensed at Spiro Koutsis Pharmacy. Dr Plunkett last saw David on 27 August 2008 which was again in relation to a request for medication for leg pain.¹³
22. Dr Surya Tipirneni, psychiatrist, in the year prior to 8 September 2008, provided regular prescriptions of anti-depressant medication, several prescriptions of clonazepam 2mg tabs and anti-psychotic medication and injections. A weekly pick-up of medications prescribed by Dr Tipirneni occurred at Jayesh Lodhia Pharmacy.
23. David first attended on Dr Thai Lim at the Carlton Clinic on 6 December 2007. Thereafter he presented regularly for prescriptions of Valium for treatment of muscle spasms on his back and neck, Panadeine Forte for constant migraines and pain in his left knee, Xanax for panic attacks and Paxam for anxiety.¹⁴
24. Drugs prescribed by Dr Lim and dispensed from Pickford Pharmacy between 6 March 2008 and 8 September 2008 included:
 - Diazepam 5mg x 50 tabs at approximately weekly intervals.
 - Codeine/paracetamol combination tabs x 20 at weekly intervals.
 - Alprazolam 2mg x 50 tabs every 2 weeks
 - Clonazepam 2mg x 100 tabs at 2-4 week intervals.

¹² Exhibit 2 - Report of Dr Angela Sungaila dated 8 September 2009

¹³ Exhibit 6 - Statement of Dr Michael Plunkett dated 12 September 2008 & T @ p93

¹⁴ Exhibit 10 - Statement of Dr Thai Lim dated 17 September 2008

25. Dr Sungaila noted that in the few months leading up to David's death, there had been an increase in the morphine prescribed by Dr Grokop from 100mg to 160 mg daily, however, she described the prescribing methods of all the doctors, other than Dr Lim, as *not unusual*. Dr Sungaila in her criticism of Dr Lim said that his prescribing habits were incorrect and could be implicated in compounding depression and causing dependency. She stated:

*The prescriptions of three different benzodiazepines in high doses over an extended period of time as prescribed by Dr Lim are excessive. There is no doubt that David Trengrove was addicted to these drugs. A common effect of benzodiazepine use is depression and the use of several of these agents in combination will exacerbate the depressant effects of the drugs.*¹⁵

INQUEST:

26. Direction Hearings were held on 2 February 2010 and 28 May 2010.
27. An Inquest was held pursuant to section 52(1) *Coroners Act 2008*. The issues identified as requiring further examination through a public hearing included:
- the relationship, if any, between David's apparent dependant use of benzodiazepines, and his death
 - David's access to a range of prescription medications through "doctor/prescription shopping" activities, and
 - the prescribing practises/habits of the number of doctors involved with David including Dr Lim.
28. *Viva voce* evidence was obtained from the following witnesses:
- Associate Professor (A/P) David RANSON - Forensic Pathologist
 - Dr Angela SUNGAILA, Forensic Physcian
 - Dr Trevor RICHARDSON
 - Dr Surya TIPIRNENI, Consultant Psychiatrist
 - Craig HADLEY - Registered Nurse
 - Dr Michael PLUNKETT
 - Dr Mustafa AHMET
 - Dr Salo GROKOP
 - Dr Thai LIM

¹⁵ Exhibit 2 - Statement of Dr Angela Sungaila dated 8 September 2009 @p4

Coroners Prevention Unit:

29. During the course of the Inquest, the Coroners Prevention Unit (CPU) was requested to research and provide empirical data on "real-time prescribing". In particular, to describe Victorian and national progress towards implementation of real-time prescription monitoring, to provide an updated list of Victorian coroners' recommendations regarding prescription shopping and real-time prescription monitoring and to quantify the harms associated with prescription medications including benzodiazepines in Victoria. (See **COMMENTS** below).
30. In addition, the CPU were requested to examine all drug deaths (defined as deaths for which acute drug toxicity played a causal or contributory role) that were reported to the Coroners Court of Victoria and investigated by a Victorian coroner in 2010. (See **ATTACHMENT A** to this Finding).

FINDINGS, COMMENTS and RECOMMENDATIONS:

The role of diazepam in David's death:

31. A/Prof Ranson and Dr Sungaila were examined at length regarding the potential role that benzodiazepines - particularly diazepam - played in causing David's death.
32. A/Prof Ranson stated that the initial toxicological analysis revealed relatively high levels of morphine which *were the sort of levels that can certainly be associated with death.*¹⁶ Diazepam was also noted but at a level within therapeutic ranges. His view was that although both drugs are cerebral depressants, the morphine *seemed to be the most significant one in causing death at that particular time.*¹⁷ The subsequent identification of other benzodiazepines he said, *might have contributed...to that degree of central nervous system sedation, and that may well have played a part*¹⁸ in his death.
33. In cross examination, A/Prof Ranson agreed that the level of diazepam in David's blood was at the lower end of the therapeutic ranges but emphasised that it is important to look at the level *in the context of the circumstances of the death.*

*If the person has been deeply unconscious for a period of time they are still metabolising drugs, so the drug level can come down...some metabolism of that drug (sic) means it (sic) may have been at a higher level having a more significant effect earlier on.*¹⁹
34. A/Prof Ranson could not definitively say that the benzodiazepines played a part in David's death but that *may well have had an additional (sic) sedating effect* although he could not say to what degree.²⁰
35. Dr Sungaila explained the basis upon which she proposed that the benzodiazepines might have contributed to David Trengrove's death:

If you add to that another drug which has a depressant effect on the cardio respiratory system, and the brain system such as a benzodiazepine that can actually add to the

¹⁶ Transcript of Proceedings (T) @ p 5

¹⁷ T @ p 5

¹⁸ T @ p 8

¹⁹ T @ p10

²⁰ T @ p12

potentially lethal effects of morphine. So it's a combination of all the drugs which then can become quite dangerous.

36. Dr Sungaila did however acknowledge that she was not able to state definitively that benzodiazepines had contributed to David's death.

“Doctor/Prescription Shopping”:

37. The term 'doctor shopping' or 'prescription shopping' is often used to describe the practice whereby a patient attends multiple doctors in order to obtain prescriptions for controlled drugs in excess of therapeutic need, which are then used for personal consumption or on-sold to others. The patient usually conceals from each doctor the fact that he or she is attending other doctors to obtain these prescription medications.

38. The inability of doctors to establish whether a patient is attending other doctors for purposes of prescription shopping is widely acknowledged to be a major problem with the health system in Victoria and Australia. A recurring theme in the evidence given at the Inquest was that general practitioners are ill equipped to identify doctor shopping behaviour and therefore put in place risk management strategies.

39. One of David's treating general practitioners, Dr Michael Plunkett, explained that the existing Medicare Prescription Shopping Program is inadequate because it holds out-of-date data and does not share useful information with doctors who call to make inquiries. Dr Plunkett stated:

There's no mechanism, if you like, to warn you that yes, this person's [prescription] shopping, and these multiple drugs actually can interact, and there is a danger from these drugs, so that doesn't exist. They're probably the biggest issues, from my point of view.²¹

40. Dr Salo Gropop, who prescribed morphine and diazepam to David, stated that no alarm bells were rung over David's prescription shopping behaviour because he did not and could not know about it. He stated:

I'm just thinking of how I would have been able to be aware of them [other prescribing doctors]. No, I don't think there is a mechanism that I could readily avail myself to find out if he was accessing other medical practitioners and treatments.²²

41. He further stated that:

...if there was a mechanism in place that any GP could readily access to be informed that the patient was doctor shopping or was accessing opiates or benzodiazepines, I think that certainly that would have rung alarm bells²³.

42. This position was supported by Forensic Physician Dr Sungaila, who asserted that the various doctors' prescribing behaviour may have been quite different if they were aware of one another:

It is clear that Mr Trengrove was visiting several doctors for the purpose of acquiring drugs of addiction on which he was dependent. Had the individual doctors been aware of this, their management may have been different. If

²¹ T @ p90

²² T @ p104

²³ T @ pp106-107

*pharmacies were linked electronically, this dispensing catastrophe could be avoided entirely.*²⁴

43. Dr Thai Chin Lim, who prescribed large quantities of benzodiazepines and opioid analgesics to David, confirmed he was also unaware that David was obtaining prescription medications from other doctors, and therefore was unable to use this information to inform his own practices. Dr Lim did however accept that his prescribing of benzodiazepines to David was excessive and not correct. Since becoming aware of his errors, he has taken steps to obtain further education and to change his practice in this regard.
44. Victorian coroners²⁵ and public health authorities²⁶ have made repeated calls for a real-time prescription monitoring program to reduce harm and death associated with prescription shopping. The need for a real-time prescription monitoring program is acknowledged by numerous bodies including the Victorian State Government, the Commonwealth Government, the Victorian Alcohol and Drug Association, the Royal Australasian College of Physicians, the member organisations of the National Pain Strategy, the Pharmaceutical Society of Australia, the Pharmacy Guild of Australia and the Public Health Association of Australia.
45. To ensure effectiveness any real-time prescription monitoring program implemented in Victoria should have, at a minimum, characteristics which:
 - should focus primarily on public health rather than law enforcement. Prescription shopping appears to be associated more often with drug dependence than the pursuit of profit. Therefore, prescription shoppers should be directed to support services, with law enforcement only involved with persistent shoppers and/or shoppers who are motivated by profit rather than drug dependence
 - record all medications (not just Schedule 8 poisons) prescribed and dispensed throughout Victoria without exception. Monitoring must take place at all prescribing and dispensing points including general practices, public and private hospitals, mental health facilities and emergency departments, so that program coverage is universal
 - provide real-time prescribing information via the internet to all prescribers and dispensers throughout Victoria without exception. Again coverage must be universal, encompassing general practices, public and private hospitals, mental health facilities and emergency departments, so that prescription shopping is prevented rather than merely displaced within the health system
 - focus on supporting rather than usurping prescribers' and dispensers' clinical decisions. Prescribers and dispensers should still retain the right to exercise discretion in clinical judgment
 - facilitate the Victorian Department of Health's ability to monitor prescribing and dispensing to identify behaviours of concern. The Victorian Department of Health should take responsibility for monitoring the data on an ongoing basis to prevent harms before they culminate in deaths.

²⁴ Exhibit 2 - Statement of Dr Angela Sungaila dated 8 September 2009 @p4

²⁵ See for example Victorian Coronial Case Reference No: 1335/2001, 2912/2001, 97/2002, 208/2004, 345/2006 & 4659/2006

²⁶ See for example the Parliament of Victoria's Drugs and Crime Prevention Committee, *Inquiry into the Misuse/Abuse of Benzodiazepines*, December 2007, @ p. ix; Royal Australasian College of Physicians Media Release: Victorian politicians urged to deliver on health in the lead up to the State election", 5 November 2010; National Pain Summit Initiative, *National Pain Strategy*, March 2010 @ p. 45; Public Health Association of Australia, *Pharmaceutical Drug Misuse Policy*, September 2010 @ p. 3.

46. Tasmania was the first state in Australia to introduce a real-time prescription monitoring program, which is run by the Alcohol and Drug Services division of the Tasmanian Department of Health and Human Services. The program was introduced following a departmental literature review that identified evidence to suggest that real-time prescription monitoring works to reduce prescription shopping and related harm and death. I understand that no evaluation of the program has yet been released publicly, and there is conflicting information in the media regarding its efficacy. However, the Tasmanian system has demonstrated that real-time prescription monitoring on a statewide basis is feasible and practical.
47. Coroner John Olle recently examined the issues surrounding real-time prescription monitoring at a summary inquest into the death of James on 21 December 2011.²⁷ At this inquest, the Victorian Department of Health submitted that after the Australian Government Department of Health and Ageing has put in place the necessary information technology infrastructure, it will introduce a Victoria-wide real-time prescription monitoring program. The Australian Government Department of Health and Ageing later corresponded with the court confirming that under the auspices of the Electronic Reporting and Recording of Controlled Drugs initiative it has licensed software from Tasmania that will enable real-time prescription monitoring. The Australian Government Department of Health and Ageing is aiming to modify and implement the software by July 2012, so the states and territories can go ahead with introducing real-time prescription monitoring programs. Coroner Olle made a number of recommendations to the Victorian Department of Health to support these initiatives, in his finding dated 15 February 2012.²⁸
48. Based on the Australian Government Department of Health and Ageing representations and the Victorian Department of Health submissions in the James inquest, it would appear that real-time prescription monitoring will be implemented in the near future. (See below **Recommendation 1**)

Prescription Medication Toxicity:

49. The harms associated with co-prescribing benzodiazepines and opioids were not unique to David's case according to Dr Lim but comprised a broader systemic public health issue.
50. The results of the CPU's examination of all drug deaths²⁹ showed that prescription medications were associated with greater frequency of deaths than either illicit drugs or alcohol and that for deaths where acute illicit drug toxicity and/or acute alcohol toxicity contributed, more often than not, acute prescription medication toxicity co-contributed. Further scrutiny of the drug deaths data by CPU identified that:
- acute benzodiazepine toxicity contributed to 165 of the 338 drug deaths (48.8%). Overall, acute benzodiazepine toxicity contributed to more drug deaths than either acute illicit drug toxicity (45.0%) or acute alcohol toxicity (24.3%)
 - 93 of the 338 drug deaths (27.5%) involved combined drug toxicity including both benzodiazepines and prescription opioids
 - 40 of the 338 drug deaths (11.8%) involved combined drug toxicity including both benzodiazepines and prescription opioids, on a background of substance abuse.
51. These findings provide empirical support for Dr Lim's claim that there is a systemic public health issue with co-prescribing of benzodiazepines and opioids. Prescribing guidelines for general practitioners was not specifically addressed during the course of the Inquest, however,

²⁷ James' surname was suppressed

²⁸ See Coroners Court of Victoria, Court Reference No: 5181/09 - Finding into Death of James.

²⁹ See Appendix A

Dr Lim's acceptance of Dr Sungaila criticism of his prescribing practices, his open admissions that he had sought assistance from other general practitioners, received counselling and changed his prescribing practices, are indicative that guidelines would be extremely valuable to the busy general practitioner. Such guidelines would need to be well constructed and evidence-based.

52. There is a large body of evidence regarding good clinical practice for benzodiazepine prescribing and associated risk management. In addition, many expert bodies in other countries have produced detailed guidelines that address various uses of benzodiazepines. Dr Sungaila stated that all the information suggests that in general, benzodiazepines should be prescribed for a very short term but that many doctors were naïve as to the long-term effects, their dependency and the requirements for their use³⁰. I understand that the Royal Australian College of General Practitioners (RACGP) is the appropriate body to lead the development of prescribing guidelines for general practitioners. However, the RACGP's current guidelines for benzodiazepine prescribing appear to have four major shortcomings. First, they were published in 2000 and so do not reflect the significant advances in evidence that have occurred in the intervening 12 years. Second, they address prescribing principles in general terms but offer little if any guidance on appropriate use of benzodiazepines to treat specific conditions such as insomnia, anxiety and panic disorder. Third, they do not offer any substantive guidance on strategies for general practitioners to identify and treat patients who are seeking benzodiazepines in excess of medical need. Fourth, they do not discuss the risk of death associated with benzodiazepines, particularly when taken in combination with other central nervous system depressants such as opioid analgesics.
53. In light of the identification of erroneous prescribing practices of benzodiazepines by general practitioners, the RACGP should update its guidelines. (See below **Recommendation 2**).

Benzodiazepine scheduling:

54. Following the autopsy performed by A/Prof David Ranson and his review and interpretation of the Toxicological analysis of David's blood, the cause of his death has been registered with the Registrar of Births Deaths and Marriages, as the *Toxic effects of Morphine*. The absence of reference to benzodiazepines in the cause of death does not however detract from the facts that David's use and abuse of benzodiazepines were causally related to the context of the circumstances of his death. The dangers of benzodiazepines have to some extent been identified through the empirical data presented by the CPU. Dr Sungaila said doctors' had education about the dangers of prescribing benzodiazepines but an additional problem was that *the prescribing authorities, or the NHS, allows large amounts to be prescribed cheaply and without restriction*³¹. Dr Sungaila called for a change to the scheduling from Schedule 4³² to Schedule 8³³ because of the comparative addictive effects/potential for abuse of benzodiazepines to opioids. At the time of his prescribing benzodiazepines to David, Dr Lim acknowledged that he did not appreciate the dangers of benzodiazepines.

³⁰ T @ p29

³¹ T @ p30

³² Schedule 4 poisons are: *Substances, the use or supply of which should be by or on order of persons permitted by State or Territory legislation to prescribe and should be available from a pharmacist on prescription.*

³³ Schedule 8 poisons are: *Substances which should be available for use but require restriction of manufacture, supply, distribution, possession and use to reduce abuse, misuse and physical or psychological dependence.*

55. Presently most benzodiazepines³⁴ are listed under Schedule 4 of the Standard for the Uniform Scheduling of Medicines and Poisons. However, given the evidence at Inquest³⁵ combined with the CPU finding that acute benzodiazepine toxicity contributed to nearly half of all Victorian drug deaths in 2010, there is a strong rationale for moving benzodiazepines to Schedule 8.
56. The major benefit of moving benzodiazepines to Schedule 8 is that in Victoria, they would be subject to more stringent restrictions on prescribing and dispensing - restrictions that are appropriate and might help to reduce deaths. For example, at present in Victoria a licence is required to prescribe a Schedule 8 poison for a period greater than eight weeks. This restriction would be appropriate for benzodiazepines, because experts generally agree that a benzodiazepine usually should not be prescribed for longer than four to six weeks. To take another example, in Victoria a licence is required to prescribe a Schedule 8 poison to a drug-dependent person. The CPU research found that a large proportion of people who died as a result of combined acute benzodiazepine and prescription opioid toxicity had histories of substance abuse. The licence requirement should force medical examiners to examine more closely the risks of prescribing benzodiazepines to this vulnerable group. (See below **Recommendation 3**).

Long-term opioid prescribing to treat chronic pain

57. Dr Salo Gropop prescribed morphine sulfate (brand name MS Contin) to treat David's chronic pain following the motorcycle accident in 1998. Dr Gropop referred David to a specialist pain management clinic in 2002, where he was assessed by Dr Janovic, who recommended that the morphine sulfate therapy should continue. Dr Gropop continued to prescribe morphine sulfate for pain management through to David's death in 2008.
58. When asked at Inquest about pain specialists, Dr Gropop explained that their central role "is to make an assessment and a recommendation" on treating pain, rather than to become involved in ongoing supervision of the treatment itself. He further explained that he did not seek a further opinion on the morphine sulfate after the 2002 consultation for two reasons: first, because David was intermittently receiving inpatient treatment in the psychiatry system so would be "lost" to him for varying lengths of time; and second, because over time David managed to reduce his daily morphine sulfate dose. Dr Sungaila noted, however, that in the few months leading up to David's death Dr Gropop increased the amount of morphine prescribed from 100 milligrams to 160 milligrams daily.
59. Dr Gropop's evidence highlights the key role that general practitioners play in treating chronic pain in Australia, even when pain specialists are involved. Therefore, it is particularly important that general practitioners are well resourced and supported for treating chronic pain, because long-term management using opioid analgesics is recognised to be problematic: it masks pain rather than treating its aetiology, and patients develop opioid tolerance and dependence.
60. In this respect, I note that the 2009 *Prescription Opioid Policy* produced by the Royal Australasian College of Physicians in conjunction with the Faculty of Pain Medicine at the Australian and New Zealand College of Anaesthetists, the Royal Australasian College of General Practitioners, and the Royal Australian and New Zealand College of Psychiatrists, called for better guidelines to assist general practitioners with treating chronic pain, including opioid prescribing guidelines:

Clear and up to date information should be available to medical practitioners about the evidence base for various alternative treatments for [chronic non-malignant pain].

³⁴ With the exception of Flunitrazepam

³⁵ Doctors Gropop and Lim both supported the need to obtain a permit for prescribing long term benzodiazepines.

*This should be provided by an appropriate body with resources to develop evidence based guidelines for practitioners.*³⁶

61. This call was echoed in a recent editorial in the *Medical Journal of Australia*, which stated that:
- [...] *clinical guidelines are needed on the place of opioids in the treatment of chronic pain, especially non-cancer pain. There is a need for clearer clinical guidelines for primary health practitioners to ensure that opioids are not used as first-line drugs for chronic pain, but are reserved for use when other forms of treatment have been tried.*³⁷
62. During a recent consultation process, the CPU contacted a number of peak medical bodies and individual experts involved in pain management, and confirmed that no practical guidelines for general practitioners have yet been disseminated. This appears to be at least in part because of the complex issues that must be addressed in any such guidelines, including:
- the place of opioid therapy among therapeutic options for managing chronic non-malignant pain
 - the common risks in opioid therapy such as overdose, potentially fatal drug interactions, and opioid dependence;
 - practical strategies for managing these risks when treating a patient, and
 - how to engage patients in pain management treatments that can replace or compliment opioid therapy. However, the CPU further found that several expert medical bodies have made excellent progress towards addressing these issues and generating an evidence base upon which practical guidelines can be based.
63. I have made a recommendation (see below **Recommendation 4**) intended to support these efforts. I directed it to the Royal College of General Practitioners (RACGP), because the RACGP is the appropriate body to oversee guidelines that are intended to assist general practitioners.
64. Further to this point, I note that Dr Grokop prescribed morphine sulfate to David under the auspices of permits issued by Drugs and Poisons Regulation at the Victorian Department of Health. A Victorian practitioner must obtain such a permit to prescribe a Schedule 8 poison (a) to any person for a period of greater than eight weeks, and (b) to any drug dependent person.
65. Drugs and Poisons Regulation does not provide clinical assessments of the merit of permit applications, however can dictate requirements that should be met in an application. Of particular relevance, the current Drugs and Poisons Regulation policy specifies that practitioners should seek specialist advice when prescribing opioids on a long-term basis to treat chronic non-malignant pain, and that "clarification may be sought from applicants about the level of specialist support they have obtained when considering long term opioid treatment."³⁸
66. Drugs and Poisons Regulation is well placed then to consider introducing a requirement that a person treated with a Schedule 8 poison for chronic non-malignant pain must attend a pain specialist intermittently for review to ensure that the treatment continues to be appropriate. Such a measure would help to avoid situations such as that presented in the death of David where he attended a pain specialist in 2002 and that specialist's advice continued to guide the general

³⁶ Royal Australasian College of Physicians, *Prescription Opioid Policy: Improving Management of Chronic Non-Malignant Pain and Prevention of Problems Associated with Prescription Opioid Use*, April 2009, p.34.

³⁷ Wayne D Hall and Michael P Farrell, "Minimising the misuse of oxycodone and other pharmaceutical opioids in Australia: Simple strategies can reduce harms from misuse of pharmaceutical opioids", *Medical Journal of Australia*, vol 195, no 5, 5 September 2011, p.249. See also Richard Hallinan, et al., "Increasing the benefits and reducing the harms of prescription opioid analgesics", *Drug and Alcohol Review*, vol 30, no 3, May 2011, p.320.

³⁸ Drugs and Poisons Regulation, "Policy for the issue of permits to prescribe Schedule 8 poisons", May 2011, p.3.

practitioner's treatment strategy for the next six years as David's health (particularly mental health) circumstances changed. (See **Recommendation 5** below).

RECOMMENDATIONS:

67. In the Finding into Death of James, Coroner John Olle made four recommendations to the Victorian Department Of Health supporting the introduction of real-time prescription monitoring. The department's response to the recommendations is due on or about 20 May 2012. In the interim I note an article published in *The Australian* newspaper on 21 April 2012, reported that a spokesperson for Federal Health Minister Tanya Plibersek, confirmed that a national Drugs and Poisons Information System (DAPIS) and associated DAPIS Online Remote Access (DORA) would be rolled out by July 2012, and this "would meet Olle's specifications" as described in his recommendations. However, the reporter, Karen Dearne noted:

*Weekend Health understands DORA does not interface with doctors' desktop prescribing systems; nor does it provide alerts about patients who have obtained S8 scripts from other doctors.*³⁹

68. I support the recommendations of Coroner Olle but note there was an aspect of real-time prescription monitoring that he did not address in detail: the need for prescribers and dispensers to be able to interrogate the system 'on the spot' while consulting with a patient to support their decisions. The recent concerns expressed in the media, that the Drugs and Poisons Information System Online Remote Access (DAPIS-DORA) web-based infrastructure that is being implemented to support real-time prescription monitoring, may not facilitate this.

Pursuant to section 72(2) of the *Coroners Act 2008*, I make the following recommendations connected with the death:

Recommendation 1:

The Victorian Department of Health implement a real-time prescription monitoring system within 12 months, in order to reduce deaths and harm associated with prescription shopping. The system should be implemented in such a way that it is readily accessible via the internet to Victorian prescribers and dispensers during consultations, so they can check patients' histories and therefore make informed prescribing and dispensing decisions 'on the spot'.

Recommendation 2:

To reduce the harms and death associated with benzodiazepine use in Victoria, the Royal Australian College of General Practitioners should update its guidelines for appropriate prescribing of benzodiazepines in the context of general practice within 12 months. The updated guidelines should explicitly address the following areas: (a) general principles for benzodiazepine prescribing; (b) appropriate use of benzodiazepines to treat specific conditions such as insomnia, anxiety and panic disorder; (c) strategies for identifying and treating patients who are seeking benzodiazepines in excess of medical need; and (d) managing the risk of harm and death associated with benzodiazepine use and misuse.

³⁹ Karen Dearne, "Plibersek defends script alert system", *The Australian*, 21 April 2012.

Recommendation 3:

To reduce the harms and death associated with benzodiazepine use in Victoria, within 12 months the Therapeutic Goods Administration of the Australian Government Department of Health and Ageing should move all benzodiazepines into Schedule 8 of the Standard for the Uniform Scheduling of Medicines and Poisons.

Recommendation 4:

That within three months of receiving this Finding, the Chair of the RACGP Victoria Faculty advise the Coroners Court of Victoria regarding

- progress that the RACGP has made toward developing guidelines to assist Victorian general practitioners who prescribe opioids to treat chronic non-malignant pain
- the scope of areas, topics and issues that the RACGP guidelines will address
- any hurdles that hinder the RACGP's capacity to complete the guidelines and disseminate them to all Victorian general practitioners; and
- the RACGP's proposed timeline for implementing the guidelines in Victoria.

Recommendation 5:

That Drugs and Poisons Regulation at the Victorian Department of Health consider introducing a requirement that where a practitioner prescribes a Schedule 8 poison to treat chronic non-malignant pain on a long-term basis, the practitioner must submit evidence that the patient has been periodically reviewed by a pain specialist to support the ongoing treatment. The purpose of this recommendation is to ensure that patients treated for chronic non-malignant pain receive expert evidence-based care, thus reducing their inappropriate exposure to Schedule 8 poisons and the associated risk of harm and death.

CONCLUDING COMMENTS:

Pursuant to section 67(3) of the **Coroners Act 2008**, I make the following comment(s) connected with the death:

1. The investigation into David's death has highlighted shortfalls in the prescribing practises of some doctors particularly with regard to benzodiazepines but it has also again highlighted the absence of a reliable contemporaneous tool to support the prescribing needs and pressures of general practitioners *per se*. But doctors must also, as a matter of common practice, turn their mind to asking appropriate questions of their patients – questions about whether they attend other doctors, questions about other medication, questions about prior medical history. Any additional information disclosed by the patient can only serve the general practitioner well by enhancing their ability to treat and prescribe appropriately – and reduce harm.
2. I accept Dr Lim's acknowledgements and the actions he has initiated since David's death reflect insight into the shortcomings in his prescribing habits. I am satisfied that he has addressed the public health and safety concerns that his previous prescribing habits raised.

FINDING as to cause of death:

Dr Sungaila, commenting on the toxicological analysis results, stated:

Other than morphine, none of the other agents are of sufficient level to have caused death in their own right. In combination with morphine, the benzodiazepines are likely to have compounded the depressant cardio-respiratory effects of morphine.⁴⁰

I accept the opinion of Dr Sungaila and when taken with regard to the weight of the evidence of David's prescription benzodiazepine use and abuse and considered with the context of the circumstances of his death, I find that David Andrew Trengrove died from the *toxic effects of morphine in a setting of benzodiazepine dependency*.

AND in the absence of evidence of intention, I find that David died from the unintentional consequences of his intentional use and abuse of prescription medication.

AND I direct that the cause of death be re-registered with the Registrar of Births, Deaths & Marriages to reflect this finding.

AND I acknowledge the research assistance of the Coroners Prevention Unit in this matter.

Pursuant to section 73(1) of the *Coroners Act 2008*, this Finding will be published on the internet.

I direct that a copy of this finding be provided to the following:

- Mr Robert Trengrove.
- Mrs Rhonda Trengrove.
- Ms Jan Moffatt, Donaldson Trumble Lawyers.
- Mr Justin Griffin, Monahan & Rowell Lawyers.
- Constable Peter Osborne.
- The Chief Psychiatrist.
- Fran Thorn, Secretary, Victorian Department of Health.
- Jane Halton PSM, Secretary, Australian Government Department of Health and Ageing.
- Dr Trevor James Richardson.
- Dr Surya Tipitneni.
- Dr Michael Plunkett.
- Dr Mustafa Eral Ahmet.
- Dr Salo Grokop.
- Dr Chin Thai Lim.

⁴⁰ Exhibit 2 - Report of Dr Angela Sungaila dated 8 September 2009

Additionally, the finding should be distributed for information to the following organisations and individuals:

- The Hon. David Davis, Minister for Health Victoria.
- The Hon Tanya Plibersek MP, Minister for Health Australia.
- Stephen Marty, Registrar, Victorian Pharmacy Authority.
- Lynelle Briggs, Chief Executive Officer, Medicare Australia.
- Kos Sclavos, National President, Pharmacy Guild of Australia.
- Sam Biondo, Executive Officer, Victorian Alcohol and Drug Association.
- Mr Bill Suen, Victorian Branch Director, Pharmaceutical Society of Australia.
- Ms Emma Cunningham, Victoria State Manager, Royal Australasian College of Physicians.
- Dr Harry Hemley, Victoria President, Australian Medical Association.

Signature:


AUDREY JAMIESON
CORONER



Date: 18 May 2012

Attachment A

1. Background

The Coroners Prevention Unit (CPU) prepared a research summary regarding Victorian drug deaths for the year 2010, at the direction of Coroner Audrey Jamieson.

The data reported herein is derived from both closed cases (deaths for which the coroner has completed the investigation and made a finding) and open cases (deaths still under investigation by Victorian coroners) as at 1 February 2012. The CPU notes that therefore, the data is reported only on an interim basis and results may change as coroners close cases and make legal determinations on causes of death.

2. Method

2.1 Definitions

The CPU definition of the term 'drug' is largely consistent with the Australian Bureau of Statistics (ABS) definition, encompassing substances that "may be used for medicinal or therapeutic purposes, or to produce a psychoactive effect".⁴¹ Like the ABS, the CPU excludes tobacco and volatile solvents such as petrol and toluene from its definition of a drug. However, the CPU considers alcohol to be a drug, whereas it is excluded under the ABS definition.

The term 'drug death' is used to refer to any death in which acute drug toxicity played a causal or contributory role. There are two types of drug deaths as defined by drug contribution to the death:

- If a death was caused solely by acute drug toxicity with no other contributing factors, it is referred to as a drug-induced death.
- If at least one factor other than drug toxicity contributed to the death (such as a workplace injury, the presence of natural disease, or so on), then it is referred to as a drug-related death.

2.2 Inclusion and exclusion criteria

The inclusion criteria for a relevant death were that the death was reported to the Coroners Court of Victoria between 1 January 2010 and 31 December 2010, and:

- the coroner's death investigation was complete and the coroner found that acute drug toxicity played a causal or contributory role in the death; or
- the coroner's death investigation was still under way and the forensic pathologist determined that acute drug toxicity played a causal or contributory role in the medical cause of death.

Deaths from causes other than acute drug toxicity where drug consumption by the deceased or another person may have contributed to the death (such as motor vehicle crashes and drownings) were excluded, because establishing the drug contribution in such deaths on an objective basis is very difficult.

2.3 Case identification

The CPU used its surveillance database to identify all coroner-determined (close case) and probable (open case) drug deaths reported to the Coroners Court of Victoria between 1 January 2010 and 31 December 2010. The CPU conducted supplementary searches for drug deaths using the National Coroners Information System (NCIS). Each death returned by either search was reviewed to determine whether it met the inclusion criteria.

⁴¹ Australian Bureau of Statistics, "Drug-induced deaths: a guide to ABS causes of death data", 8 August 2002, p.2.

2.4 Data collection

For each death that met the inclusion criteria, the CPU recorded whether the death was drug-induced or drug-related. The CPU also reviewed the coronial cause of death (closed case) or medical cause of death (open case) to identify each drug that contributed to the death. If the cause of death explicitly nominated the drugs involved, these were recorded as contributory. If the cause of death did not explicitly nominate the drugs involved (for example if the cause of death was “multiple drug toxicity” or “drug overdose in combination with cardiomegaly”), the CPU reviewed the toxicology report and recorded all drugs therein as playing a role in the death.

2.5 Data analysis

The CPU used a custom Microsoft Access database to set up a unit record dataset of deaths that met the inclusion criteria, then used Microsoft Excel to perform a descriptive statistical analysis of the frequency of drug-induced and drug-related deaths by contributing drugs.

2.6 Limitations

The CPU encountered issues with document access that inhibited its ability to generate a complete dataset. The data reported herein therefore may comprise an under-reporting of Victorian drug deaths for the period.

The CPU also encountered occasional issues with identifying the drug source in deaths where acute morphine toxicity contributed. Morphine has multiple potential sources: it can be taken as a pharmaceutical preparation, and is a significant metabolite of both heroin and codeine. There were 36 deaths for which the CPU could not positively identify the source of relevant contributing morphine. The CPU resolved to assume in these cases that the morphine was present as a metabolite of heroin. The assumption was made in order to simplify data analysis, and because heroin is the primary source of morphine in Victorian deaths. However this decision may have led the CPU to over-estimate the role of heroin and under-estimate the involvement of pharmaceutical morphine in Victorian drug deaths for 2010.

3. Results

The CPU identified 338 Victorian drug deaths for 2010. Table 1 shows that the majority of the deaths were drug-induced ($n = 261, 77.2\%$) rather than drug-related ($n = 77, 22.8\%$), and involved multiple drugs ($n = 215, 63.6\%$) rather than a single drug ($n = 123, 36.4\%$).

Table 1: Frequency of drug deaths by drug involvement and contribution, Victoria 2010.

		Drug contribution		
		Drug-induced	Drug-related	Total
Drug involvement	Single drug	86	37	123
	Multiple drugs	175	40	215
	Total	261	77	338

In this study the CPU was primarily interested in drug involvement, so for the following analyses the data was collapsed across drug contribution.

3.1 Drug types involved in deaths

For each of the 338 Victorian drug deaths, the CPU recorded whether prescription medications (including over-the-counter medications), illicit drugs and/or alcohol contributed to that death. Table 2 shows that prescription medications were contributory in a larger proportion of deaths ($n = 261, 77.2\%$) than illicit drugs ($n = 152, 45.0\%$) or alcohol ($n = 82, 24.3\%$).

Table 2: Frequency of medication, illicit drug and alcohol contribution to 338 drug deaths, Victoria 2010.

Drug type	n	%
Prescription medication	261	77.2%
Illicit drug	152	45.0%
Alcohol	82	24.3%
All	338	100%

The CPU then explored how the three types of drugs combined with one another to contribute to the 338 deaths. Table 3 shows that prescription medications alone (not combined with either illicit drugs or alcohol) accounted for the largest group of deaths (n = 137, 40.5%). The next largest group was prescription medications in combination with illicit drugs (n = 69, 20.4%), followed by illicit drugs alone (n = 50, 14.8%).

Table 3: Combinations of prescription medication, illicit drug and/or alcohol contribution to 338 drug deaths, Victoria 2010.

Drug combination	n	%
Prescription medications alone	137	40.5%
Prescription medications with illicit drugs	69	20.4%
Illicit drugs alone	50	14.8%
Prescription medications with alcohol	28	8.3%
Prescription medications with, illicit drugs and alcohol	27	8.0%
Alcohol alone	21	6.2%
Illicit drugs with alcohol	6	1.8%
All deaths	338	100%

3.2 Specific contributing drugs

For each of the 338 Victorian drug deaths, the CPU recorded each individual drug that contributed to that death. Table 4 shows each drug that was found to have contributed in at least 5% (n = 17) of the 338 deaths.

Table 4: Most frequently contributing individual drugs in drug deaths, Victoria 2010.

Drug	Type	Group	n	%
Heroin	Illicit	Illicit	139	41.1%
Diazepam	Prescription medication	Benzodiazepine	108	32.0%
Alcohol	Alcohol	Alcohol	82	24.3%
Alprazolam	Prescription medication	Benzodiazepine	56	16.6%
Codeine	Prescription medication	Analgesic	55	16.3%
Methadone	Prescription medication	Analgesic	53	15.7%
Oxycodone	Prescription medication	Analgesic	38	11.2%
Quetiapine	Prescription medication	Antipsychotic	37	10.9%
Amitriptyline	Prescription medication	Antidepressant	25	7.4%
Citalopram	Prescription medication	Antidepressant	21	6.2%
Temazepam	Prescription medication	Benzodiazepine	21	6.2%

Mirtazapine	Prescription medication	Antidepressant	20	5.9%
Paracetamol	Medication	Analgesic	20	5.9%
Oxazepam	Prescription medication	Benzodiazepine	19	5.6%
Olanzapine	Prescription medication	Antipsychotic	18	5.3%
<i>All</i>	<i>All</i>	<i>All</i>	338	100%

Heroin was the most frequently contributing drug (n = 139, 41.1%), and was also the only illicit drug listed in Table 4. The remainder of drugs, with the exception of alcohol, were prescription medications. The two most frequently contributing prescription medications were the benzodiazepines diazepam (n = 103, 32.0%) and alprazolam (n = 56, 16.6%). The next three most frequently contributing drugs were the opioid analgesic prescription medications codeine (n = 55, 16.3%), methadone (n = 53, 15.7%) and oxycodone (n = 38, 11.2%).

3.3 Benzodiazepine involvement in deaths

To explore the extent of benzodiazepine involvement in drug deaths, the CPU classified all contributing drugs in the 338 deaths for which acute drug toxicity played a causal or contributory role, using a modified version of Drug Abuse Warning Network (DAWN) Drug Vocabulary level two groups. The major CPU departure from DAWN practice, was that the DAWN 'anxiolytics, sedatives, and hypnotics' category was split into a 'benzodiazepine medications' category and a 'non-benzodiazepine anxiolytics, sedatives, and hypnotics' category, so that benzodiazepine contribution could be quantified.

Table 5 shows the major drug groups that were found to have contributed in at least 10% (n = 34) of the 338 Victorian drug deaths during 2010. Benzodiazepine medications were the most prevalent group, contributing to 165 deaths (48.8%). Next were illicit drugs, which as already noted contributed to 152 deaths (45.0%), then analgesic medications, which contributed to 145 deaths (42.9%).

Table 5: Most frequently contributing drug groups in drug deaths, Victoria 2010.

Drug group	n	%
Benzodiazepine medications	165	48.8%
Illicit drugs	152	45.0%
Analgesic medications	145	42.9%
Antidepressant medications	102	30.1%
Alcohol	82	24.3%
Antipsychotic medications	64	18.9%
<i>All deaths</i>	338	100%

3.4 Drugs that co-contributed with benzodiazepines

The CPU examined the 165 drug deaths in which acute benzodiazepine toxicity contributed, to identify co-contributing drugs. The CPU found that in five deaths (3.0%) benzodiazepines were the only contributing drugs. At least one non-benzodiazepine drug contributed in the remaining 160 deaths (97.0%). Table 6 shows the most frequently co-contributing drug groups.

Table 6: Drug groups that most frequently co-contributed with benzodiazepines in drug deaths, Victoria 2010.

Drug combination	n	%
Analgesic medications	97	57.8%
Illicit drugs	81	49.1%

Antidepressant medications	69	41.8%
Antipsychotic medications	47	28.5%
Alcohol	42	25.4%
<i>All deaths involving acute benzodiazepine toxicity</i>	<i>165</i>	<i>100%</i>

Analgesic medications co-contributed in 97 deaths (57.8%). Further analysis revealed that 93 of these 97 deaths involved opioid analgesics. The next most frequent co-contributing group was illicit drugs, with 81 deaths (49.1%). Again, further analysis revealed that heroin was the specific co-contributing illicit drug in 75 of these 81 deaths. Overall, the CPU found that at least one illicit or prescription opioid co-contributed in 136 of the 165 deaths (82.4%).

Among other drugs, the antidepressant group co-contributed in a significant minority of deaths (n = 69, 41.8%). When this was examined more closely, the CPU found a wide variety of antidepressants across multiple sub-groups were involved.

3.5 History of substance abuse in acute benzodiazepine toxicity deaths

The CPU reviewed the Victorian Police Form 83 summary of circumstances, the autopsy report and (where available) coroner's finding for the deceased in each of the 165 deaths where acute benzodiazepine toxicity played a causal or contributory role, to identify any evidence of a history of substance abuse. This was done because a broad swathe of Australian and international literature suggests that benzodiazepine misuse is often associated with misuse of other drugs. The CPU found positive evidence of a substance abuse history in 94 (57.0%) of the 165 deaths.