
JURISDICTION : CORONER'S COURT OF WESTERN AUSTRALIA
ACT : CORONERS ACT 1996
CORONER : MICHAEL ANDREW GLIDDON JENKIN
HEARD : 30 NOVEMBER 2021
DELIVERED : 3 DECEMBER 2021
FILE NO/S : CORC 657 of 2019
DECEASED : WANI, ELIA

Catchwords:

Nil

Legislation:

Nil

Counsel Appearing:

Mr W Stops appeared to assist the coroner.

Ms J Buller (State Solicitor's Office) appeared on behalf of East Metropolitan Health Service.

Coroners Act 1996
(Section 26(1))

AMENDED RECORD OF INVESTIGATION INTO DEATH

*I, Michael Andrew Gliddon Jenkin, Coroner, having investigated the death of **Elia WANI** with an inquest held at Perth Coroners Court, Central Law Courts, Court 85, 501 Hay Street, Perth, on 30 November 2021, find that the identity of the deceased person was **Elia WANI** and that death occurred on 21 May 2019 at Armadale Kelmscott District Memorial Hospital from acquired methaemoglobinaemia in association with sodium nitrite toxicity in the following circumstances:*

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INTRODUCTION

1. Elia Wani (Mr Wani) died on 21 May 2019 at Armadale Kelmscott District Memorial Hospital (AKH) from acquired methaemoglobinaemia in association with sodium nitrite toxicity. He was 29-years of age.^{1,2,3}
2. At the time of his death, Mr Wani was subject to a community treatment order (CTO)⁴ made under the *Mental Health Act 2014* (WA) (the MHA),⁵ and was therefore an “*involuntary patient*” and a “*person held in care*”.⁶ His death was therefore a “*reportable death*”⁷ and in such circumstances, a coronial inquest is mandatory.⁸
3. Where, as here, the death is of a person held in care, I am required to comment on the quality of the supervision, treatment and care the person received while in that care.⁹ I held an inquest into Mr Wani’s death on 30 November 2021 attended by members of his family.
4. The Brief of evidence tendered at the inquest consisted of one volume and included a report into Mr Wani’s death by Senior Constable Nigel Foote,¹⁰ expert reports and medical notes. Two witnesses gave oral evidence at the inquest, namely:
 - a. Dr Payal Sawhney (Consultant Psychiatrist); and
 - b. Dr Jessamine Soderstrom (Consultant Toxicologist).
5. The inquest focused on the standard of supervision, treatment and care Mr Wani received while he was the subject of a CTO, as well as circumstances of his death and issues related to the use and availability of sodium nitrite.

¹ Exhibit 1, Vol. 1, Tab 1, P100 - Report of Death (05.03.20)

² Exhibit 1, Vol. 1, Tab 3, P92 - Identification of Deceased Person (21.05.19)

³ Exhibit 1, Vol. 1, Tab 6, Death in Hospital form (21.05.19)

⁴ An order made under the MHA that a person receive treatment on an involuntary basis in the community.

⁵ Exhibit 1, Vol. 1, Tab 16, Mental Health Tribunal Order (Community treatment order), (02.04.19)

⁶ Section 3, *Coroners Act 1996* (WA)

⁷ Section 3, *Coroners Act 1996* (WA)

⁸ Section 22(1)(a), *Coroners Act 1996* (WA)

⁹ Section 25(3) *Coroners Act 1996* (WA)

¹⁰ Exhibit 1, Vol. 1, Tab 9A, Report - Snr. Const. N Foote (05.03.20)

MR WANI

Background^{11,12,13,14,15}

6. Mr Wani was born in Uganda on 10 December 1989 and had two brothers and three sisters. He and his family came to Australia in 2006 and Mr Wani lived in the family home in Armadale. He completed an online diploma in Digital Marketing and had worked in the security industry. He enjoyed playing soccer and singing, and had performed as a stand-up comedian after taking acting classes. Mr Wani had also published a book entitled: *Discovering Your Universal Purpose*.

Medical and mental health issues^{16,17,18}

7. Mr Wani was diagnosed with bipolar affective disorder (BPAD) in 2013, and experienced a number of manic relapses predominantly related to non-compliance with his medication regime. When Mr Wani was unwell, he typically presented with delusions and persecutory beliefs which were often directed towards the police and/or health services. He would also express grandiose and religiose ideas.¹⁹
8. Dr Sawhney was Mr Wani's treating psychiatrist from 2015 until his death. At the inquest, she explained that BPAD is a mental health condition characterised by extreme mood swings, thought to be related to an imbalance of neurological chemicals in the brain. The medications used to treat BPAD aim to restore this chemical imbalance and symptoms can often be brought under effective control when patients comply with their medication. Conversely, non-compliance can result in the re-emergence of symptoms, as happened in Mr Wani's case.²⁰

¹¹ Exhibit 1, Vol. 1, Tab 1, P100 - Report of Death (05.03.20)

¹² Exhibit 1, Vol. 1, Tab 7, File Note - Sen. Const. P Smith (30.07.19)

¹³ Exhibit 1, Vol. 1, Tab 9A, Report - Sen. Const. N Foote (05.03.20), p2

¹⁴ Exhibit 1, Vol. 1, Tab 14, Amazon website printout

¹⁵ Exhibit 1, Vol. 1, Tab 15, Report - Dr P Sawhney (05.08.19), pp1-2 and ts 30.11.21 (Sawhney), pp6-15

¹⁶ Exhibit 1, Vol. 1, Tab 8, Statement - Ms M Amoo, paras 5-14

¹⁷ Exhibit 1, Vol. 1, Tab 16, Mental Health Tribunal Report - Dr P Sawhney (14.05.19)

¹⁸ Exhibit 1, Vol. 1, Tab 15, Report - Dr P Sawhney (05.08.19)

¹⁹ For example, see: Exhibit 1, Vol. 1, Tab 14, Internet post - Elia Professa (08.11.18)

²⁰ ts 30.11.21 (Sawhney), pp7-8

9. Like all medications, those used to treat BPAD can cause side effects. Mr Wani complained that his BPAD medication caused joint stiffness (with associated walking difficulties), hand tremors, changes in his facial expressions and sexual dysfunction. He was noted to be particularly susceptible to another known side effect of BPAD medication, namely raised creatinine kinase levels. As this can lead to kidney failure, he was regularly monitored. In order to address Mr Wani's concerns about side effects, his medication was reviewed from time to time and various alternatives were tried. In February 2019, Mr Wani was switched to aripiprazole (Ablify Maintena), a long acting antipsychotic medication administered by monthly injection, which he appeared to tolerate quite well.^{21,22}
10. Although Mr Wani had reportedly used cannabis and alcohol prior to 2015, it appears he did not do so after that time. There is no evidence to suggest that he ever expressed any suicidal or self-harm ideation, nor is there any record of any previous suicide attempts.^{23,24} Between 2013 and 2018, Mr Wani had 10 inpatient admissions to hospital:^{25,26,27}
- a. AKH, Leschen Psychiatric Unit (29 days):
03.10.13 - 01.11.13: manic and psychotic symptoms with strange behaviour, grandiose thoughts and agitation. Discharged on a CTO;
 - b. AKH, Leschen Psychiatric Unit (19 days):
14.11.13 - 03.12.13: readmitted following manic relapse related to non-compliance with medication. Discharged on a CTO;
 - c. AKH, Leschen Psychiatric Unit (7 days):
14.07.15 - 21.07.15: brought to hospital by police with an acute manic relapse and religious delusions. Noted to be sensitive to medications and discharged on olanzapine wafer;

²¹ Exhibit 1, Vol. 1, Tab 16, Discharge Summaries, AKH, (various dates, 2013-2018)

²² Exhibit 1, Vol. 1, Tab 15, Report - Dr P Sawhney (05.08.19), pp2-4 and ts 30.11.21 (Sawhney), pp8-10

²³ Exhibit 1, Vol. 1, Tab 16, Discharge Summaries, AKH, (various dates, 2013-2018)

²⁴ Exhibit 1, Vol. 1, Tab 15, Report - Dr P Sawhney (05.08.19), pp2-4 and ts 30.11.21 (Sawhney), p8

²⁵ Exhibit 1, Vol. 1, Tab 16, Discharge Summaries, AKH, (various dates, 2013-2018)

²⁶ Exhibit 1, Vol. 1, Tab 15, Report - Dr P Sawhney (05.08.19), pp2-4 and ts 30.11.21 (Sawhney), p7

²⁷ Exhibit 1, Vol. 1, Tab 16, Mental Health Tribunal Report - Dr P Sawhney (14.05.19)

- d.** AKH, Leschen Psychiatric Unit (26 days):
30.08.15 - 25.09.15: self-presented with an acute relapse of mania related to non-compliance with medication and alcohol and cannabis use. Commenced on fortnightly depot injections of zuclopenthixol and discharged on a CTO;
- e.** AKH, Leschen Psychiatric Unit (4 days):
16.04.17 - 20.04.17: brought to hospital by police after a deterioration in his mental state. Poor sleep and aggressive behaviour were noted and he was admitted as an involuntary patient for treatment;
- f.** AKH, Leschen Psychiatric Unit (23 days):
26.04.17 - 19.05.17: presented with deterioration in mental state with poor sleep and aggressive behaviour. Admitted as an involuntary patient for treatment;
- g.** AKH, Leschen Psychiatric Unit (26 days):
02.05.18 - 28.05.18: brought to hospital by police after a manic relapse. Blood tests showed muscle damage thought to be related to his medication and he was started on a new mood stabiliser. His blood levels improved and he was discharged home;
- h.** AKH, Leschen Psychiatric Unit (31days):
09.06.18 - 09.07.18: brought to hospital by police after jumping on cars and expressing religious delusions. Transferred to the secure ward and started on a different antipsychotic medication;
- i.** Concord Hospital, Sydney (31days):
mid-late July 2018: intercepted on his way to Sydney Airport to “*join the Army*”. His medications were reportedly ceased and he was given a course of electroconvulsive therapy; and
- j.** AKH, Leschen Psychiatric Unit (56 days):
14.08.18 - 08.10.18: readmitted after behaving strangely on his return from Sydney. Diagnosed with a manic relapse with psychotic features. Placed on an involuntary treatment order and admitted to the secure ward. Discharged on a CTO.

Community Treatment Order^{28,29}

11. Mr Wani was regularly placed on a CTO after being discharged from hospital because of his non-compliance with medication and his lack of insight into the need for treatment for his mental health condition. In a report to the Mental Health Tribunal (the Tribunal), Dr Sawhney noted:

Elia has limited insight into his BPAD [bipolar affective disorder], he is unable to acknowledge the benefit and purpose of his treatment plan. His judgement is, as a result, partially impaired and he is currently unable to make informed decisions about his care.³⁰

12. A CTO is an order made under the MHA requiring a person to receive treatment in the community as an involuntary patient. A person is not to be placed on a CTO unless:

[T]he person cannot be adequately provided with treatment in a way that would involve less restriction on the person's freedom of choice and movement than making a community treatment order.³¹

13. In Mr Wani's case, placing him on a CTO meant that he could be regularly monitored by his care coordinator and treating psychiatrist and that his depot antipsychotic medication could be administered to him in a regular and controlled manner.

14. Placing a person on CTO, means that breach action can be taken if they do not comply with their treatment plan, including their medication regime. Initially, breach action would focus on encouraging the person to voluntarily comply, but ultimately, a notice of breach may be served. Where this happens, the person is required to attend an approved hospital for assessment by a psychiatrist. Ultimately, where this is required, the person's CTO can be revoked, meaning they would be admitted to an approved hospital on an involuntary basis.³²

²⁸ Exhibit 1, Vol. 1, Tab 15, Report - Dr P Sawhney (05.08.19), p7 and ts 30.11.21 (Sawhney), pp10-13

²⁹ Exhibit 1, Vol. 1, Tab 16, Mental Health Tribunal Report - Dr P Sawhney (14.05.19)

³⁰ Exhibit 1, Vol. 1, Tab 16, Mental Health Tribunal Report - Dr P Sawhney (14.05.19), p5

³¹ s25(2)(e), *Mental Health Act 2014* (WA)

³² See: Division 4, Part 8, *Mental Health Act 2014* (WA)

15. In Mr Wani’s case, his CTO was extended for a further three-months by the Tribunal on 17 May 2019.³³ Having carefully reviewed the evidence in this case, I am satisfied that the decision to place Mr Wani on a CTO in the first place and the Tribunal’s decision to extend his CTO, were justified on the basis that the CTO was the least restrictive way to ensure he received appropriate treatment for his mental health condition.

Management in the community^{34,35}

16. After his last discharge from AKH on 8 October 2018, Mr Wani was managed in the community by the Clinical Treatment Team at the Eudoria Street Centre in Gosnells (the Team). In accordance with his treatment plan, Mr Wani saw his treating psychiatrist monthly and his care coordinator fortnightly. As I have noted, by February 2019, Mr Wani was receiving monthly injections of aripiprazole (Ablify Maintena) and said he was feeling “*much better*”.

17. Mr Wani was last reviewed by Dr Sawhney on 7 May 2019. On that occasion, although he appeared to be doing “*quite well*”, he continued to have limited insight into his mental health condition and the need for treatment. He denied any “*thoughts of harming himself or anyone else*” and displayed no signs of thought disorder or psychosis. He said he was working casual shifts as a security guard and it was noted that he had good support from his family.

18. Dr Sawhney decided to maintain Mr Wani’s medication regime, namely: Ablify Maintena (300 mg, depot injection monthly) and sodium valproate (one 500 mg tablet in the morning and two 500 mg tablets at night). It was also decided to seek an extension of his CTO, given his limited insight and the risk that he might not continue agreeing to take his depot medication. Mr Wani was told he would need to remain on medication for the rest of his life, but Dr Sawhney said that he was very positive about the future and talked about his plans to secure office employment.

³³ Exhibit 1, Vol. 1, Tab 16, Mental Health Tribunal, Community treatment order (17.05.19)

³⁴ Exhibit 1, Vol. 1, Tab 15, Report - Dr P Sawhney (05.08.19), pp5-6 and ts 30.11.21 (Sawhney), pp11-14

³⁵ Exhibit 1, Vol. 1, Tab 16, Eudoria Street Centre Outpatient notes - Dr P Sawhney (07.05.19)

EVENTS LEADING TO MR WANI'S DEATH^{36,37,38,39,40,41}

19. On 10 May 2019, Mr Wani made an online purchase of “*Sodium Nitrite Powder 50g (100% pure)*” from a food ingredient supplier based in Melbourne. The order was delivered to Mr Wani’s home, although it is unclear when the product arrived. Police subsequently seized a container labelled “*Sodium Nitrite (Preservative) 50g*” from Mr Wani’s room, although the purity of the product is unclear as the contents were not tested. The container’s label states that the product requires “*blending*” and must not be consumed directly. The label also warned that gloves and eye protection must be worn when handling the product.^{42,43}

20. A search of the company’s website suggests that the sodium nitrite product purchased by Mr Wani is no longer available, however, a meat preservative called “*Pink Salt (Cure #1) powder*” is still for sale and has a sodium nitrite content of 6.25%. The label on this product warns that the product should not be directly ingested from the packet and substituting it for table salt can be dangerous, particularly for young children. The company’s website states that the product is coloured pink to “*help it blend with the meat and more importantly to prevent this product being confused with common table salt*”.⁴⁴

21. At 12.40 pm on 20 May 2019, Mr Wani attended the Eudoria Street Centre for his regular depot injection. He presented in a clean and tidy manner and was reported to be polite with good eye contact. His mood was said to be “*euthymic*”, which describes a stable mental state. His sleep and appetite were “*good*”, there was no evidence of thought disorder and no psychiatric symptoms and no risks were identified. Mr Wani accepted his depot injection and an outpatient appointment was scheduled for 5 June 2019.⁴⁵

³⁶ Exhibit 1, Vol. 1, Tab 8, Statement - Ms M Amoo, paras 15-54

³⁷ Exhibit 1, Vol. 1, Tab 9A, Report - Sen. Const. N Foote (05.03.20), pp2-3

³⁸ Exhibit 1, Vol. 1, Tab 11, AKH Emergency Department Summary (21.05.19)

³⁹ Exhibit 1, Vol. 1, Tab 11, AKH Adult Triage Nursing Assessment (21.05.19)

⁴⁰ Exhibit 1, Vol. 1, Tab 11, AKH Priority 1 Calls document

⁴¹ Exhibit 1, Vol. 1, Tab 12, SJA Patient Care record (20.05.19)

⁴² Exhibit 1, Vol. 1, Tab 9B, Memo - Const. A Carter (21.05.19)

⁴³ Email - Counsel assisting (01.12.21), Photos of sodium nitrite container seized from Mr Wani’s room

⁴⁴ See: <https://www.melbournefooddepot.com/?rf=kw&kw=sodium+nitrite>

⁴⁵ Exhibit 1, Vol. 1, Tab 16, Eudoria Street Centre Outpatient notes - Nurse M Heath (20.05.19)

22. At about 6.30 pm on 20 May 2019, Mr Wani’s sister, Ms Mary Amoo, arrived home from work, and she and Mr Wani exchanged brief greetings. Although Ms Amoo later said she thought her brother wanted to discuss something with her, this did not occur before the family went to bed after prayers, at around 9.15 pm. In Ms Amoo’s opinion, Mr Wani “*was OK and seemed happy*” and as far as she was aware, apart from some joint soreness, his medication “*was working*”.
23. Sometime after the family had gone to bed, Mr Wani’s mother became concerned about him and asked Ms Amoo to check on him. At about 11.20 pm, Ms Amoo heard Mr Wani snoring loudly through the locked door of his bedroom, which was unusual. There was no reply when she knocked on his door and Mr Wani’s father accessed Mr Wani’s room using a spare key.
24. Mr Wani was found lying in bed struggling to breathe and his father called emergency services at 11.24 pm. At the direction of the operator, Mr Wani was placed on his bedroom floor in the recovery position. Whilst he was on the floor, fluid drained from his mouth and he became unresponsive.
25. Ambulance officers arrived at 11.32 pm, by which time Mr Wani’s respiration and heart rates were very slow and his oxygen saturation was only 73%. An airway was inserted and mask respiration was initiated. Defibrillator pads applied to Mr Wani’s chest established that his heart was in an abnormal rhythm (ventricular tachycardia) and a shock was delivered. Mr Wani’s heart subsequently went into asystole,⁴⁶ and this rhythm persisted despite repeated doses of adrenaline.
26. Prior to taking Mr Wani to AKH by ambulance, officers found a box of sodium valproate tablets under a desk in his bedroom and a handwritten note in which he said he had ingested 25g of sodium nitrite in order to take his life.⁴⁷

⁴⁶ Asystole is the total cessation of electrical activity in the heart and is the most serious form of cardiac arrest.

⁴⁷ Exhibit 1, Vol. 1, Tab 13, Note written by Mr Wani, bearing the date 14.05.19

27. On arrival at AKH, Mr Wani was given further doses of adrenaline but he remained in asystole. Emergency department and nursing triage notes indicate that clinical staff were concerned that Mr Wani may have taken an overdose of sodium valproate, but in any event, an ultrasound of his heart confirmed there was no cardiac output. Resuscitation efforts were subsequently ceased and Mr Wani was declared deceased at 12.36 am on 21 May 2019.⁴⁸
28. It appears that staff at AKH were aware of Mr Wani's handwritten note because a document in the AKH records headed "*Priority 1 Calls*" bears the words: "*Na Val OD!*" (referring to a possible sodium valproate overdose), "*cardiac arrest*" and "*Suicide Note*". Further, there is an entry in the integrated progress notes at 1.00 am on 21 November 2019, which states in part: "*note already with nurse but did not show it to pt family.*"⁴⁹

CAUSE AND MANNER OF DEATH

Post mortem examination^{50,51}

29. On 22 May 2019, two forensic pathologists (Dr Vicki Kueppers and Dr Reimar Junckerstorff), conducted a post mortem examination of Mr Wani's body. They noted his lungs were congested and there was focal mild non-specific microscopic fibrosis in his heart. Mr Wani's internal organs appeared to be otherwise normal and no natural disease was identified.

Toxicological analysis

30. As noted, biochemical testing found a very high level of methaemoglobin in Mr Wani's blood (i.e.: 76.6%) and this was confirmed by toxicological analysis. Mr Wani's tryptase and IgE levels were not raised, meaning it is unlikely that he experienced an allergic reaction to the sodium nitrite he ingested.

⁴⁸ Exhibit 1, Vol. 1, Tab 6, Death in Hospital form (21.05.19)

⁴⁹ Exhibit 1, Vol. 1, Tab 11, AKH Adult triage nursing assessment & Integrated patient notes (21.05.19)

⁵⁰ Exhibit 1, Vol. 1, Tab 4A, Supplementary Post Mortem Report (28.11.19), pp1-2

⁵¹ Exhibit 1, Vol. 1, Tab 4B, Post Mortem Report (22.05.19), pp1-5

31. Toxicological analysis also detected therapeutic levels of the medications, aripiprazole, haloperidol and valproic acid in Mr Wani's system, along with paracetamol, codeine, the anti-nausea medication, ondansetron and the antihistamine, doxylamine. Alcohol and other common drugs were not detected.⁵²

Cause and manner of death

32. At the conclusion of the post mortem examination, Dr Kueppers and Dr Junckerstorff expressed the opinion that the cause of Mr Wani's death was acquired methaemoglobinaemia in association with sodium nitrite toxicity.

33. I accept and adopt the conclusion of Dr Kueppers and Dr Junckerstorff as to the cause of Mr Wani's death. Further, in view of the evidence in this case and in particular Mr Wani's handwritten note, I find that death occurred by way of suicide.⁵³

SODIUM NITRITE

Chemical properties^{54,55}

34. Sodium nitrite (NaNO_2) is a white crystalline powder with a similar appearance to kitchen salt. It is odourless, soluble in water and commonly used as a food additive and preservative. It helps speed up the curing of meat and is able to "fix" the pink colour associated with preserved meat. It is also used as an additive in antifreeze and to prevent corrosion in pipes and tanks.

35. Sodium nitrite is also used as to make organic compounds such as dyes, pesticides and pharmaceutical products and, in combination with sodium thiosulphate, can be used to treat cyanide poisoning. Sodium nitrite is readily available from food suppliers and there was a spike in deaths in 2017 after information concerning its use in the context of suicide and euthanasia became more readily available on the internet.

⁵² Exhibit 1, Vol. 1, Tab 5, Toxicology report (26.07.19), pp1-3

⁵³ Exhibit 1, Vol. 1, Tab 13, Note written by Mr Wani, bearing the date 14.05.19

⁵⁴ Exhibit 1, Vol. 1, Tab 17A, Report - Dr J Soderstrom (11.08.21), pp1-2 and ts 30.11.21 (Soderstrom), p16-17

⁵⁵ Duraõ, C, Pedrosa, F & Dinis-Oliveira, RJ, 'A fatal case by suicide kit containing sodium nitrite ordered on the internet' (2020) 73(101989) *Journal of Forensic and Legal Medicine* 1, pp1-2

Effects on the human body^{56,57}

36. Dr Soderstrom explained that oxygen is transported around the body via a protein in red blood cells called haemoglobin. When ingested, sodium nitrite causes iron in the haemoglobin molecule to oxidise, forming methaemoglobin, which is unable to transport oxygen. Rising levels of methaemoglobin can cause a serious clinical condition known as methaemoglobinaemia, where vital organs are starved of oxygen.
37. The normal level of methaemoglobin in human blood is less than 1% but no clinical effects are observed where levels are less than 10%. Poisoning occurs about one hour after ingestion and in mild cases, symptoms include nausea, vomiting, agitation, weakness and headache. Confusion and drowsiness can occur at levels between 30% - 50% and potentially lethal effects including coma, seizures, cardiac arrhythmias and metabolic acidosis may occur at levels between 50% - 70%.
38. In his handwritten note, Mr Wani said he had consumed “25g of sodium nitrite”. Assuming that the product he ingested was 6.25% pure, this equates to a sodium nitrite dose of 1.56g. Dr Soderstrom said that based on the therapeutic levels of sodium nitrite used to treat cyanide poisoning (and the levels of methaemoglobin thus produced), it was safe to assume that amount of sodium nitrite product Mr Wani consumed could induce the methaemoglobin levels that were detected.⁵⁸

Treatment of sodium nitrite poisoning^{59,60}

39. The treatment for methaemoglobinaemia focusses on aggressive decontamination, oxygen therapy and the administration of “*reducing substances*”. The antidote for methaemoglobinaemia is methylene blue,⁶¹ which reverses the effect of sodium nitrite on the haemoglobin molecule, and is given intravenously when methaemoglobin levels exceed 20%.

⁵⁶ Exhibit 1, Vol. 1, Tab 17A, Report - Dr J Soderstrom (11.08.21), p2 and ts 30.11.21 (Soderstrom), p17-18

⁵⁷ Durao, C, Pedrosa, F & Dinis-Oliveira, RJ, ‘A fatal case by suicide kit containing sodium nitrite ordered on the internet’ (2020) 73(101989) *Journal of Forensic and Legal Medicine* 1, pp2-3

⁵⁸ Email - Dr Soderstrom to counsel assisting (30.11.21) and ts 30.11.21 (Soderstrom), pp19-21

⁵⁹ ‘A fatal case by suicide kit containing sodium nitrite ordered on the internet’ (ibid), p3

⁶⁰ Exhibit 1, Vol. 1, Tab 17A, Report - Dr J Soderstrom (05.03.20), pp2-3 and ts 30.11.21 (Soderstrom), pp18-19

⁶¹ Methylene blue is the common name for methylthioninium chloride.

40. Great care must be taken when administering methylene blue as an antidote because giving too much can cause methaemoglobinaemia. For that reason, methylene blue is only given in a hospital setting after methaemoglobin levels have been established. It would therefore not be appropriate to issue methylene blue to ambulance officers.
41. Dr Soderstrom noted that oxygen therapy usually results in only a small increase in the capacity of a patient's red blood cells to transport oxygen because these cells have already been poisoned by the ingestion of sodium nitrite. Measures such as plasmapheresis (where blood plasma is removed, treated and returned) and/or a cardiac bypass may also be tried, but these therapies are time-critical and often not readily available.
42. When a patient arrives at hospital in cardiac arrest with severe methaemoglobinaemia, the likelihood of being able to prevent death is "very low". Mr Wani had very high levels of methaemoglobin and was in cardiac arrest when he arrived at AKH. In Dr Soderstrom's opinion, even if Mr Wani had been given methylene blue when he arrived at hospital, the outcome in his case would have been the same.⁶²

Deaths from sodium nitrite poisoning

43. According to the National Coronial Information System, there were 17 deaths attributable to either sodium nitrite or sodium nitrate between 2009 - 2018.⁶³ In passing, I note that like sodium nitrite, sodium nitrate (NaNO_3) is also widely available and is used to preserve meats products such as salami and make fertilizers and explosives. The effects on the body of sodium nitrate are similar to those of sodium nitrite.⁶⁴
44. Until recently, products containing less than 40% sodium nitrite were considered moderate risk and were regulated under Schedule 6 of the Standard for the Uniform Scheduling of Medicines and Poisons (the Poisons Standard). Products containing more than 40% sodium nitrite were regarded as high risk and regulated under Schedule 7 of the Poisons Standard, meaning they could only be purchased by authorised users.⁶⁵

⁶² Exhibit 1, Vol. 1, Tab 17A, Report - Dr J Soderstrom (11.08.21), p3 and ts 30.11.21 (Soderstrom), pp21-22

⁶³ *Sodium nitrite and sodium nitrate-related deaths in Australia 2009-2018*, NCIS (DR21-01, February 2021)

⁶⁴ <https://www.healthline.com/health/food-nutrition/is-sodium-nitrate-bad-for-you>

⁶⁵ See: <https://www.tga.gov.au/publication/poisons-standard-susmp>

*Amendments to the Poison Standard*⁶⁶

45. On 27 April 2021, the Therapeutic Goods Administration (TGA) issued a consultation paper regarding a proposal to amend the Poisons Standard to reschedule sodium nitrite, explaining the rationale for the proposed change in these terms:

The impetus for this proposal is reported misuse and concern associated with the increased use of sodium nitrite in deliberate, self-poisoning causing death. The proposal seeks to impose additional restrictions of the availability of sodium nitrite to minimise access for individuals who may misuse the substance while ensuring continuing access for industry stakeholders.⁶⁷

46. The TGA website recently published an interim decision of a Delegate of the Secretary of the Federal Department of Health which restricts access to products containing more than 15% sodium nitrite. Submissions on the interim decision were invited on or before 11 November 2021, with a proposed final implementation date of 1 February 2022.⁶⁸
47. Notwithstanding the similar effects of both compounds, it appears that sodium nitrate is not subject to the same scheduling regime as sodium nitrite. Nevertheless, security concerns would presumably be raised if a person attempted to purchase a product containing high concentrations of sodium nitrate, because such products can be used to make explosives. For that reason, sodium nitrate is included in the *National Code of Practice for Chemicals of Security Concern 2016*.^{69,70}
48. In my view, the TGA's proposed amendments to the Poison Standard in relation to sodium nitrite are appropriate and I hope that the proposed final decision will be implemented as planned on 1 February 2022. However, given that sodium nitrate is readily available and its effects on the body are similar to sodium nitrite, I consider that it would be appropriate for the TGA to consider imposing similar restrictions on the sale of sodium nitrate products as well.

⁶⁶ ts 30.11.21 (Soderstrom), pp22 & 25-26

⁶⁷ Exhibit 1, Vol. 1, Tab 17C, TGA Consultation paper (27.04.21), p7

⁶⁸ Exhibit 1, Vol. 1, Tab 18, TGA Notice of interim decision (12.10.21)

⁶⁹ National Code of Practice for Chemicals of Security Concern 2016, p6

⁷⁰ www.nationalsecurity.gov.au/Securityandyourcommunity/ChemicalSecurity/Documents/Code-of-practice.pdf

Options to limit access to sodium nitrite^{71,72}

49. Following the death of a woman in Victoria from sodium nitrite ingestion in May 2019, the Coroners Prevention Unit of Victoria (CPU) identified six potential ways to reduce the risk of deliberate sodium nitrite poisoning, namely:

- a. *Education for clinicians:* aimed at increasing the awareness of the signs, symptoms and treatment for methaemoglobinaemia;
- b. *Removing sodium nitrite information from the internet:* from time to time the use of sodium nitrite has been promoted on the internet as a means of deliberate self-poisoning. The CPU noted that although desirable, the removal of such content is essentially impossible given the pervasive nature of the internet;
- c. *Safe storage in the work place:* given that sodium nitrite is used in a range of industries, proposals for better storage would be aimed at reducing unauthorised access in the workplace;
- d. *Public awareness campaigns:* although a campaign aimed at explaining the dangers of ingesting sodium nitrite seems sensible, the CPU properly expressed concern that such campaigns might perversely increase awareness of the potential use of sodium nitrite as an effective means of deliberate self-poisoning;
- e. *Restricting access to sodium nitrite:* although theoretically possible, the CPU noted that because of the widespread use of sodium nitrite across a range of industries, this option was impractical in an absolute sense; and
- f. *Increased focus on investigating sodium nitrite deaths:* a greater focus on the means by which people access sodium nitrite in poisoning cases may bring to light additional prevention strategies.

⁷¹ Finding into the death of J Kiroyan, Coroners Court of Victoria, per DSC C English (COR 2019 2493)

⁷² ts 30.11.21 (Soderstrom), pp22-25 & 27

50. At the inquest, Dr Soderstrom noted that options outlined by the CPU and agreed with the limitations identified. She said that in Western Australia, emergency department physicians are aware of clinical issues relating to sodium nitrite ingestion and that methylene blue is available in emergency departments.⁷³ Following the inquest, Dr Soderstrom made a further suggestion which I think has merit, namely:

[E]ducation targeted towards the suppliers of sodium nitrite, making them aware that it is being promoted as a euthanasia drug and being bought for self-harm purposes so they are aware and may be more targeted towards ensuring there (are) legitimate reasons for purchasing the agents.⁷⁴

51. In my view, the type of education suggested by Dr Soderstrom could help alert suppliers to the dangers associated with the misuse of sodium nitrite products and encourage them to adopt a cautious approach with respect to new customers and/or those seeking to purchase unusually large amounts of products containing sodium nitrite.

QUALITY OF SUPERVISION, TREATMENT AND CARE

52. Mr Wani was diagnosed with BPAD in 2013. He had numerous inpatient admissions following relapses in his mental health, most usually because of non-compliance with his medication regime. Whilst Mr Wani was in the community, his mental health was managed by the Team and as Dr Sawhney noted:

When medicated, Mr Wani was calm and pleasant and easy to engage with. He was receiving depot antipsychotic medication which ensured compliance since it was administered to him by nurses in the clinical treatment team (CTT) at Eudoria Street Centre in Gosnells.⁷⁵

53. When he was not an inpatient, Mr Wani was regularly the subject of a CTO and on 17 May 2019, his CTO was extended. Under his treatment plan, Mr Wani was reviewed on a monthly basis by his consultant psychiatrist and saw his care coordinator fortnightly.

⁷³ ts 30.11.21 (Soderstrom), p23

⁷⁴ Email - Dr Soderstrom to Counsel Assisting (30.11.21)

⁷⁵ Exhibit 1, Vol. 1, Tab 15, Report - Dr P Sawhney (05.08.19), p8

54. Having carefully considered evidence in this matter, I am satisfied that it was appropriate to place Mr Wani on a CTO in view of his non-compliance with medication and his lack of insight into the need for treatment for his mental health condition. I am satisfied that Mr Wani's management whilst he was as an inpatient at AKH was appropriate and that the standard of supervision, treatment and care he received whilst he was the subject of a CTO was of a **good** standard.

RECOMMENDATIONS

55. In light of the observations I have made in this finding, I make the following recommendations:

Recommendation No.1

The Therapeutic Goods Administration consider whether products containing sodium nitrate should be the subject of similar restrictions as those about to imposed in relation to sodium nitrite, given the similar effect on the human body of both substances.

Recommendation No.2

The Therapeutic Goods Administration should consider advising suppliers of products containing sodium nitrite that these products have been widely promoted as capable of causing death in the context of euthanasia and suicide, and suggesting that suppliers take all possible steps to ensure that the sodium nitrite products they sell are intended for legitimate purposes.

CONCLUSION

56. Mr Wani was a much-loved son and brother with a long-standing mental health condition. He was 29-years of age when he took his life by ingesting a fatal amount of a product containing sodium nitrite. Mr Wani's death highlights the risks associated with the misuse of this commonly available substance.
57. Those risks have been identified by the TGA and an interim decision to further restrict access to more concentrated forms of sodium nitrite was recently published on the TGA website. It is my hope that this interim decision will be made final as planned in February 2022 and that the TGA will consider the two recommendations which I have made.

MAG Jenkin

Coroner

3 December 2021