

IN THE CORONERS COURT OF VICTORIA AT MELBOURNE

Court Reference: COR 2019 2493

FINDING INTO DEATH WITHOUT INQUEST

Form 38 Rule 63(2)
Section 67 of the Coroners Act 2008

Findings of:

Caitlin English, Deputy State Coroner

Deceased:

Jessinda Kiroyan

Date of birth:

29 August 1977

Date of death:

Between 14 and 16 May 2019

Cause of death:

1(a) Nitrate/ nitrite toxicity

Place of death:

2/17 Cornell Street, Camberwell, Victoria

INTRODUCTION

1. On or about 14 May 2019, Jessinda Kiroyan was 41 years old when she took her own life. At the time of her death, Ms Kiroyan lived alone at Camberwell.

THE CORONIAL INVESTIGATION

- 2. Ms Kiroyan's death was reported to the Coroner as it fell within the definition of a reportable death in the *Coroners Act 2008* (the Act). Reportable deaths include deaths that are unexpected, unnatural or violent, or result from accident or injury.
- 3. The role of a coroner is to independently investigate reportable deaths to establish, if possible, identity, medical cause of death, and surrounding circumstances. Surrounding circumstances are limited to events which are sufficiently proximate and causally related to the death. The purpose of a coronial investigation is to establish the facts, not to cast blame or determine criminal or civil liability.
- 4. Under the Act, coroners also have the important functions of helping to prevent deaths and promoting public health and safety and the administration of justice through the making of comments or recommendations in appropriate cases about any matter connected to the death under investigation.
- 5. The Victoria Police assigned an officer to be the Coroner's Investigator for the investigation of Ms Kiroyan's death. The Coroner's Investigator conducted inquiries on my behalf, including taking statements from witnesses such as family, the forensic pathologist, treating clinicians and investigating officers and submitted a coronial brief of evidence.
- 6. This finding draws on the totality of the coronial investigation into Ms Kiroyan's death, including evidence contained in the coronial brief. Whilst I have reviewed all the material, I will only refer to that which is directly relevant to my findings or necessary for narrative clarity. In the coronial jurisdiction, facts must be established on the balance of probabilities.¹

¹ Subject to the principles enunciated in *Briginshaw v Briginshaw* (1938) 60 CLR 336. The effect of this and similar authorities is that coroners should not make adverse findings against, or comments about, individuals unless the evidence provides a comfortable level of satisfaction as to those matters taking into account the consequences of such findings or comments.

MATTERS IN RELATION TO WHICH A FINDING MUST, IF POSSIBLE, BE MADE

Identity of the deceased

- 7. On 20 May 2018, Jessinda Kiroyan, born 29 August 1977, was visually identified by her father, Noke Kiroyan.
- 8. Identity is not in dispute and requires no further investigation.

Medical cause of death

- 9. Professor Noel Woodford, Director of the Victorian Institute of Forensic Medicine (VIFM), conducted an examination on 24 May 2019 and provided a written report of his findings dated 11 October 2019.
- 10. Toxicological analysis of post-mortem samples identified the presence of codeine,² ranitidine,³ doxylamine,⁴ metoclopramide,⁵ paracetamol,⁶ and nitrite and nitrate.
- 11. Due to findings at the scene (literature relating to suicide and bottles of food preservative (sodium nitrate and sodium nitrite)), testing was undertaken for these substances. Testing of both blood and stomach contents revealed the presence of nitrite and nitrate at potentially toxic levels. The significance of nitrite and nitrate and how it causes death is explained below.
- 12. Professor Woodford noted that when taken in excess, these substances may lead to the formation of methaemoglobin. This condition (methaemoglobinaemia) is associated with significant impairment of oxygen transport mechanisms, leading eventually to loss of consciousness and death. Unfortunately, in this case there were no suitable specimens to enable the determination of methaemoglobin levels.
- 13. Professor Woodford provided an opinion that the medical cause of death was "1(a) Nitrate/nitrite toxicity".
- 14. I accept Professor Woodford's opinion.

² Codeine is an opiate and is an effective antitussive and antidiarrhoeal agent.

³ Ranitidine is used for the short-term treatment of duodenal ulcer and gastric ulcer.

⁴ Doxylamine is an antihistamine and sleep-inducing agent.

⁵ Metoclopramide is an anti-emetic drug used for the treatment of nausea and vomiting.

⁶ Paracetamol is an analgesic drug.

Circumstances in which the death occurred

- 15. Ms Kiroyan was born in Indonesia. She moved to Germany in 1991 and then to Melbourne in 1994 with her father, stepmother, and half-sister.
- 16. Although she had found the separation of her parents at age nine years difficult and later had difficulty settling in Melbourne, it appears she did not suffer depression until about 1995. At this time, Ms Kiroyan failed to return home for several days and was treated at The Alfred Hospital for paracetamol overdose. Her family became aware that this event was a suicide attempt.
- 17. Ms Kiroyan thereafter left school and moved out of home. She later remained in Australia when her family moved overseas. Ms Kiroyan's father, Noke Kiroyan, stated that the family remained in contact with Ms Kiroyan mostly via email. He believed his daughter was happy during this time and over the next few years; there was no indication she was suffering from depression.
- In 1999, Ms Kiroyan was diagnosed with bipolar affective disorder after having a manic episode. She had suffered depression in the lead up to this diagnosis, which had been treated with antidepressants and psychological intervention. Over the following years, she sought and received treatment for bipolar affective disorder, which included psychiatric assistance and medication. However, it appears that Ms Kiroyan eventually began to reject ongoing treatment she did not follow through with a referral to a psychologist in 2013 and in 2014 self-ceased her medication due to feeling stable. She thereafter did not receive any further mental health treatment.
- 19. While Ms Kiroyan regularly made trips to Indonesia for family events and to visit family members over the following years, in 2011 and 2016 she ceased communication with her sister and stepmother respectively following relatively minor disagreements. It is unclear how this estrangement impacted her mental health.
- 20. On 16 May 2019, Ms Kiroyan's friend, Cara Lo Iacono, received an express post parcel from Ms Kiroyan. The parcel contained Ms Kiroyan's will, and a typed note asking for help and details about how she could access a key to her unit. Concerned for her friend's welfare, Ms Lo Iacono contacted Victoria Police when Ms Kiroyan failed to respond to her phone call and text message.

- At approximately 2.50pm that day, police members entered Ms Kiroyan's unit and found her deceased in bed. A stool near the front door held a folder and two small containers. The folder contained Ms Kiroyan's will, a typed suicide note, personal documents, and instructions regarding the clean-up and disbursement of her property. The two small containers contained ashes of her beloved deceased dogs.
- 22. Victoria Police members subsequently seized a number of items from Ms Kiroyan's home, including an external hard drive. Examination of the hard drive revealed Ms Kiroyan had extracted various suicide-related information from the internet over a long-term period.
- A bottle labelled *The Melbourne Food Ingredient Depot Sodium Nitrite (Preservative) 50g* and another labelled *Sodium Nitrate (Preservative) 50g* were submitted to the VIFM, which prompted testing for these substances in Ms Kiroyan's post-mortem samples. It is unclear where these bottles were found within Ms Kiroyan's home nor how she had obtained them.
- 24. Having considered all of the evidence, including the extent of Ms Kiroyan's end of life preparations and research, I am satisfied that Ms Kiroyan intentionally took her own life.

SODIUM NITRITE AND NITRATE

- 25. As part of my investigation, I sought advice from the Coroners Prevention Unit (**CPU**) about the use of nitrites and nitrates in suicide.
- 26. The Coroners Prevention Unit (CPU) was established in 2008 to strengthen the prevention role of the coroner. The unit assists the Coroner with research in matters related to public health and safety and in relation to the formulation of prevention recommendations. The CPU also reviews medical care and treatment in cases referred by the coroner. The CPU is comprised of health professionals with training in a range of areas including medicine, nursing, public health and mental health.

Sodium nitrite

- 27. Sodium nitrite (NaNO₂) is an inorganic compound similar in appearance to table salt: a white to slightly yellow crystalline powder which is odourless and soluble in water.
- 28. From an internet search, it appears that sodium nitrite is readily available to purchase online.
- 29. The Australia New Zealand Food Standards Code (Food Standards Code) permits the use of sodium nitrite as an additive to a range of food products including particularly meat, poultry,

and game products. The salt inhibits bacterial growth that causes a common food poisoning known as botulism and preserves the attractive pink colour of the meat. Sodium nitrite is also used as a treatment for cyanide poisoning, as an anti-corrosive, and as a precursor in the manufacture of pharmaceuticals, dyes, and pesticides.⁷

- 30. In Australia, sodium nitrite is classified as a poison under Schedules 2, 5, 6 and 7 of the Commonwealth's *Standard for the Uniform Scheduling of Medicines and Poisons* (SUSMP, also known as the Poisons Standard); the concentration of sodium nitrite and its intended use determine the Schedule under which any substance containing sodium nitrite is regulated.
- 31. The sodium nitrite used in suicide is most often sold as a curing salt by food ingredient retailers and butcher suppliers, including online. These products have a sodium nitrite content ranging from 2 to 12 percent and are regulated under Schedule 6 of the SUSMP. Schedule 6 sodium nitrite is determined to present a moderate risk of harm; to reduce this risk, when sold for curing and pickling purposes it requires a cautionary label, which warns that its use may be dangerous.
- 32. As an additional safety measure to avoid accidental ingestion, curing mixes containing sodium nitrite are usually dyed pink to distinguish them from table salt, hence they are commonly known as 'pink salt'.
- 33. Preparations containing sodium nitrite above 40 percent concentration have a high potential to harm and are regulated as Schedule 7 poisons, which means they are only available to specialised or authorised users from chemical suppliers. These include its use in commercial, medical, scientific and industrial settings. Domestic access and possession of Schedule 7 sodium nitrite is unlawful under the current legislation.

Sodium nitrate

- 34. Sodium nitrate (NaNO₃) differs to sodium nitrite in its chemical composition, although they share similar attributes, both being white crystalline solids that taste like table salt and are highly soluble in water.
- 35. As outlined in the Food Code Standards, sodium nitrate (also known as 'chile saltpetre') is used as a food additive in cheese products, and a curative in slow dried cured meats such as prosciutto, pastrami, and salami. Nitrates in the salt convert into nitrites over time when

⁷ Abdollahi M and Khaksar MR, "Sodium nitrite," in *Encyclopedia of Toxicology*, third edition, 2014, accessed via https://doi.org/10.1016/B978-0-12-386454-3.01206-9, accessed 15 December 2020.

- exposed to bacteria present on meats during the curing process. Sodium nitrate is also used in fertilisers, pyrotechnics, and rocket propellant.
- 36. Sodium nitrate is not currently scheduled in the SUSMP, and thus there are no restrictions to access. However, a material containing a high concentration of sodium nitrate is considered a high-risk chemical of security concern as a precursor to homemade explosives.⁸
- 37. Substances containing lower concentrations of sodium nitrate are available for purchase at food ingredient suppliers in the form of curing-salt mixes. Substances containing higher concentrations for industrial purposes can be sourced online. Warning labels are vary.

How sodium nitrite ingestion causes death

- 38. When sodium nitrite is ingested, haemoglobin (the protein in red blood cells that transports oxygen and carbon dioxide around the body) is oxidised to methaemoglobin, interfering with blood oxygen transport. This condition of elevated methaemoglobin level is called methaemoglobinaemia.
- 39. Clinical signs associated with elevated methaemoglobin levels are cyanotic skin discolouration and chocolate brown appearance of whole blood (present at methaemoglobin level of 10 to 20 percent in blood), headache and rapid heartbeat (20 to 30 percent), fatigue, confusion, dizziness and increasingly rapid heartbeat (30 to 50 percent); and coma, seizures, arrhythmias and acidosis (50 to 70 percent). A higher methaemoglobin level restricts oxygen to the brain, which in turn may cause central nervous system depression, hypoxia, and death. A higher methaemoglobin level restricts oxygen to the brain, which in turn may cause central nervous system depression, hypoxia, and death.
- 40. Two other important features of sodium nitrite poisoning are:
 - (a) the oxidation of haemoglobin to methaemoglobin is reversed over time by protective enzymes in the human body. Therefore, a sufficiently high quantity of sodium nitrite must be ingested to result in death. The lethal dose has been estimated to be

⁸ A high sodium nitrate concentration is regarded to be a 10% or greater concentration of sodium nitrate in a water-based solution, or sodium nitrate at a concentration of 65% or above in any other form. See Australian Government, *National Code of Practice for Chemicals of Security Concern*, Barton ACT: Attorney-General's Department, 2016.

⁹ Walker R, "The metabolism of dietary nitrites and nitrates," *Biochemical Society Transactions*, 24(3), 1996: 780-785. ¹⁰ Mansouri A and Lurie A, "Methemoglobinemia," *American Journal of Hematology*, 42(1), 1993: 7-12; Standefer JC and Jones AM, "Death associated with nitrite ingestion: Report of a case," *Journal of Forensic Science*, 24(4), 1979: 768-771.

approximately three grams of sodium nitrite, ¹¹ although a reliable case report from the United Kingdom identified a fatality following ingestion of only one gram; ¹² and

(b) death by sodium nitrite has been documented to take approximately an hour between ingestion and death.¹³ A reason for this may be that humans can survive severe methaemoglobinaemia for short periods, with one case report describing a person who fully recovered from a methaemoglobin blood level of 92.7 percent.¹⁴

Sodium nitrite ingestion as a suicide method

- 41. Sodium nitrite ingestion has been promoted as a viable and effective suicide method by the voluntary euthanasia movement.
- 42. The CPU identified 20 confirmed sodium nitrite suicides between 2000 and 2020 (including Ms Kiroyan). However, I note that the VIFM is currently unable to test for the presence of nitrates and nitrites in blood; instead, this testing is done upon request by Queensland Health Forensic and Scientific Services if there is evidence to suggest it might be pertinent. This may mean that there may be cases where sodium nitrite toxicity has not been identified as a possible cause of death.
- 43. While there were no deaths between 2000 and 2016, since 2017 the rate has steadily increased as follows:
 - (a) one in 2017;
 - (b) three in 2018;
 - (c) eight in 2019; and
 - (d) eight in 2020 (as at 31 October 2020).
- 44. Of the 20 Victorian sodium nitrite suicides:

nitrate ingestion," Toxicology Communications, 2018, 2(1): 21-23.

¹¹ Nitschke P and Stewart F, "Lethal Inorganic Salts", in *The Peaceful Pill eHandbook*, 2017. The CPU obtained a print-out of this section of *The Peaceful Pill eHandbook* from another coronial investigation. The print-out is from 2017. The exact date is not known, but it would have been printed in September or later in the year, as this is when the chapter was added.

¹² Gowans WJ, "Fatal methaemoglobinaemia in a dental nurse. A case of sodium nitrite poisoning," *British Journal of General Practice*, 40, 1990: 470-471.

¹³ Standefer JC and Jones AM, "Death associated with nitrite ingestion: Report of a case," *Journal of Forensic Science*, 24(4), 1979: 768-771; Nishiguchi M, Nushida H, Okudaira N and Nishio H, "An autopsy case of fatal methemoglobinemia due to ingestion of sodium nitrite," *Journal of Forensic Research*, 6(1000262), 2015, doi:10.4172/2157-7145.1000262. ¹⁴ Dela Cruz M, Glick J, Merker SH and Vearrier D, "Survival after severe methemoglobinemia secondary to sodium

- (a) 13 people were male (65 percent) and seven were female (35 percent);
- (b) the highest suicide frequency by age group was the 18 to 24 range with six deaths (30 percent), followed by 35 to 45 group with four suicides (20 percent), and three suicides (15 percent) each between ages of 25 to 24, and 55 to 64;
- (c) 16 people (80 percent) had history of mental disorder/s including depression, anxiety, schizoaffective disorder, and anorexia; and
- (d) six people (30 percent) were diagnosed with physical ailments such as chronic pain, chronic obstructive pulmonary disease, and multiple sclerosis.
- 45. Post-mortem toxicological analysis detected the presence of metoclopramide or other antiemetics in 13 people (65 percent). This detection is consistent with advice voluntary euthanasia advocates that people using sodium nitrite in suicide take an anti-emetic first to reduce the risk of the salty solution being vomited after ingestion.
- 46. Other pharmaceutical drugs were detected in 16 people (80 percent), including benzodiazepines, antidepressants, and opioids.

Potential prevention opportunities

47. To identify potential interventions to reduce the risk of sodium nitrite suicide, the CPU reviewed the extant literature on sodium nitrite suicide as well as relevant literature on sodium nitrite toxicity more broadly. In the review process, the CPU identified six potential areas for intervention as follows.

Education for clinicians

48. The need for clinicians to consider the possibility of methaemoglobinaemia in relevant patient presentations, and to know how to respond appropriately, was the most frequently mentioned prevention intervention in the literature. One research group suggested methaemoglobinaemia diagnosis should be considered for all patients who are:

[...] presenting after an intentional overdose with dark-appearing blood, cyanosis, hypoxia, and hemodynamic instability. Methylene blue should be administered

immediately, with early repeat dosing, along with early consideration of RBC or exchange transfusions. ¹⁵

- 49. The use of methylene blue is considered as the first-line antidote therapy in presentation of methaemoglobinaemia from suspected sodium nitrite toxicity. Whilst methaemoglobin levels of 70 percent and above are considered potentially lethal, methylene blue had been successful in treating a patient with an initial methaemoglobin level of 92.5 percent secondary to ingesting sodium nitrite. It was subsequently noted that timely response can potentially reverse even the most extreme methaemoglobinaemia and save the patient's life.
- 50. However, this intervention is only relevant in circumstances where there is a medical response between sodium nitrite ingestion and death; and more specifically, where the clinicians failed to recognise methaemoglobinaemia.

Taking down online information about sodium nitrite

- 51. The second most frequently mentioned intervention was to target online sources of information about sodium nitrite as a suicide method. The basis of this recommendation was that most people who intentionally self-harmed by taking sodium nitrite had learned about the method online, as appears to be the case with Ms Kiroyan. One study revealed the importance of preventing and fighting existing suicide information networks over the internet, particularly networks through which 'suicide kits' can be purchased and delivered while circumventing customs controls. 19
- 52. While to date no Victorian coroner has considered restrictions on information about sodium nitrite suicide, the issue of controlling information about other suicide methods has been considered.²⁰ However, in both cases it was acknowledged that there was no practical method to prevent people viewing and accessing this material online.

¹⁵ See Mudan A, Repplinger D, Lebin J, Lewis J, Vohra R and Smollin C, "Severe methemoglobinemia and death from intentional sodium nitrite ingestions," *Journal of Emergency Medicine*, 2020, 6(31): 1-4; Neth M, Love J, Horowitz Z, Shertz M, Sahni R and Daya MR, "Fatal sodium nitrite poisoning: Key considerations for prehospital providers," *Prehospital Emergency Care*, 2020, doi: 10.1080/10903127. 2020.1838009.

¹⁶ Gowans WJ, "Fatal methaemoglobinaemia in a dental nurse. A case of sodium nitrite poisoning," *British Journal of General Practice*, 40, 1990: 470-471.

¹⁷ Katabami K, Hayakawa M and Gando S, "Severe methemoglobinemia due to sodium nitrite poisoning," *Case Reports in Emergency Medicine*, 2016, doi: 10.1155/2016/9013816.

¹⁸ Mudan A, Repplinger D, Lebin J, Lewis J, Vohra R and Smollin C, "Severe methemoglobinemia and death from intentional sodium nitrite ingestions," *Journal of Emergency Medicine*, 2020, 6(31): 1-4.

¹⁹ Durao C, Pedrosa F and Dinis-Oliveira RJ, "A fatal case by a suicide kit containing sodium nitrite ordered on the internet," *Journal of Forensic and Legal Medicine*, 2020, 73; doi: 10.1016/j.jflm. 2020.101989.

²⁰ In COR 20074986 (unpublished) and in COR 2014 0169 Finding into death without inquest regarding WJ, dated 21 September 2015 (published).

Safe storage in the workplace

- 53. Sodium nitrite is used across a range of industries and therefore readily accessible on various work sites: not only food retailers but research and medical institutions, dentist surgeries, plants that produce pesticides and dye and pharmaceuticals.
- 54. The need to ensure sodium nitrite present in workplaces is stored safely, was mentioned in a United Kingdom case study:

The toxicity of sodium nitrite tablets is not widely known, despite their widespread use in the medical and dental professions. If they are to be kept on surgery premises at all then secure storage must be guaranteed.²¹

55. In Victoria, at least two people were believed to have sourced sodium nitrite from their workplace. The recommendation thus likely has limited utility in Victoria due to the low frequency of relevant deaths.

Public awareness campaigns

One study proposed a public awareness campaign highlighting the dangers of sodium nitrite.²² However, there was little detail about how such a campaign would be executed, and the CPU was concerned that such a campaign may further disseminate knowledge of the method (which contradicts the imperative noted above to restrict this information), while not being clear as to how public awareness might at the same time reduce risks.

Restricting access to sodium nitrite

One study proposed restricting access to sodium nitrite generally.²³ While this proposal is theoretically sound as means restriction is the suicide intervention with the highest level of evidence for efficacy, sodium nitrite is widely used for legitimate purposes in many different areas, and of particular note, an alternative to sodium nitrite as a multifunctional food additive

²¹ Gowans WJ, "Fatal methaemoglobinaemia in a dental nurse. A case of sodium nitrite poisoning," *British Journal of General Practice*, 40, 1990: 470-471.

²² Mudan A, Repplinger D, Lebin J, Lewis J, Vohra R and Smollin C, "Severe methemoglobinemia and death from intentional sodium nitrite ingestions," *Journal of Emergency Medicine*, 2020, 6(31): 1-4.

²³ Mudan A, Repplinger D, Lebin J, Lewis J, Vohra R and Smollin C, "Severe methemoglobinemia and death from intentional sodium nitrite ingestions," *Journal of Emergency Medicine*, 2020, 6(31): 1-4.

in cured meats has not been identified despite significant research effort.²⁴ Therefore, this does not appear to be a practical intervention opportunity.

Increased focus on investigation of sodium nitrite suicides

- 58. While not strictly a prevention intervention as such, one study suggested that death investigators should be aware of the possibility of sodium nitrite toxicity and should have processes in place to test for this as a mechanism of death.²⁵ This points to a potential route to future prevention insights.
- 59. At present in Victoria we have limited knowledge of where people are sourcing sodium nitrite for suicide, and in what form. If coroners prioritised establishing sodium nitrite sources in their investigations, and also establishing how people learned about the suicide method, it is possible that we might be able to develop a better evidence base for prevention recommendations in the future.
- 60. In a similar vein, I note the work of the Victorian Suicide Register (VSR).

VICTORIAN SUICIDE REGISTER

- 61. The VSR is a database containing detailed information on suicides that have been reported to and investigated by Victorian Coroners between 1 January 2000 and the present.
- 62. The VSR indicates the annual frequency of suicides occurring in the state of Victoria has been steadily increasing for the past decade, from 537 deaths in 2010 to 726 deaths in 2019.
- 63. The annual Victorian suicide rate for the period 2010 to 2019 ranged from 9.8 suicides per 100,000 people (2010) to 11.3 suicides per 100,000 people (2018).
- 64. The proportion of suicides by history of diagnosed or suspected mental ill health between 2009 and 2016 was 55.7 percent (for those diagnosed) and 19.8 percent (for those suspected but not diagnosed).
- 65. The primary purpose of gathering suicide data in the VSR is to assist Coroners with prevention-oriented aspects of their suicide death investigations. VSR data is often used to contextualise an individual suicide with respect to other similar suicides; this can generate

²⁴ Alahakoon AU, Jayasena DD, Ramachandra S and Jo C, "Alternatives to nitrite in processed meat: Up to date," *Trends in Food Science & Technology*, 2015, 45(1): 37-49.

²⁵ Durao C, Pedrosa F and Dinis-Oliveira RJ, "A fatal case by a suicide kit containing sodium nitrite ordered on the internet," *Journal of Forensic and Legal Medicine*, 2020, 73; doi: 10.1016/j.jflm. 2020.101989.

insights into broader patterns and trends and themes not immediately apparent from the individual death, which in turn can lead to recommendations to reduce the risk that further such suicides will occur in the future.

66. So much is still unknown about suicide and, given that every suicide occurs in unique circumstances to a person with a unique history and life experience, possibly there is much we will never be able to quantify and understand. But through recording information about each individual suicide in the VSR, particularly information about the health and other services with whom the person had contact, and then looking at what has happened across time and across people, we hope the VSR can at least lead us to new understandings of how people who are suicidal might better be supported in our community.

FINDINGS AND CONCLUSION

- 67. Pursuant to section 67(1) of the Act I make the following findings:
 - (a) the identity of the deceased was Jessinda Kiroyan, born 29 August 1977;
 - (b) the death occurred between 14 and 16 May 2019 at 2/17 Cornell Street, Camberwell, Victoria, from nitrate/ nitrite toxicity; and
 - (c) the death occurred in the circumstances described above.

I convey my sincere condolences to Ms Kiroyan's family for their loss.

Pursuant to section 73(1A) of the Act, I order that this finding be published on the Coroners Court of Victoria website in accordance with the rules.

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

Noke Kiroyan, senior next of kin

Wistar Natadiningrat, senior next of kin

Dr Ashvin Arunachalam (care of Lander & Rogers Lawyers)

Senior Constable Anthony Buchalka, Victoria Police, Coroner's Investigator

Signature:

Tand M



DEPUTY STATE CORONER

Date: 19 March 2021

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NOTE: Under section 83 of the *Coroners Act 2008* (the Act), a person with sufficient interest in an investigation may appeal to the Trial Division of the Supreme Court against the findings of a coroner in respect of a death after an investigation. An appeal must be made within six months after the day on which the determination is made, unless the Supreme Court grants leave to appeal out of time under section 86 of the Act.