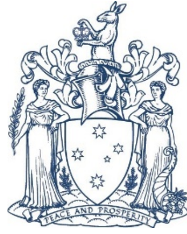

IN THE CORONERS COURT
OF VICTORIA
AT MELBOURNE

**COR 2021 004938**

# FINDING INTO DEATH WITHOUT INQUEST

*Form 38 Rule 63(2)*

*Section 67 of the* ***Coroners Act 2008***

| | |
|---|---|
| Findings of: | Judge John Cain, State Coroner |
| Deceased: | Nathan Ruan Roy Greenwood |
| Date of birth: | 20 March 2003 |
| Date of death: | 17 September 2021 |
| Cause of death: | 1(a) SODIUM NITRITE TOXICITY |
| Place of death: | Monash Medical Centre, 246 Clayton Road, Clayton, Victoria, 3168 |
| Keywords: | Sodium Nitrite; Sodium Nitrite Toxicity; Amazon Australia; Sanctioned Suicides |

## INTRODUCTION

1. Nathan Ruan Roy Greenwood was 18 years of age when he passed away on 17 September 2021.

2. Nathan is survived by his parents, Colin Greenwood and Yupin Kongyu, and his sister Sarah Greenwood. At the time of his death, he lived in Dingley Village, Victoria with his father and sister.

3. Nathan suffered from anxiety for most of his life and had received support from a number of services. In the year preceding his death, Nathan's appeared to have struggled with the stressors of the COVID-19 pandemic including the extended lockdowns.

4. In the early hours of 17 September 2021, Nathan contacted triple zero after consuming a quantity of Sodium Nitrite. He was taken to Monash Medical Centre in Clayton after being located by emergency services in a distressed state on the nature strip outside his family home. Despite resuscitation efforts, he sadly passed away shortly after admission.

5. Colin described his son as a great guy with a good personality.

## MENTAL HEALTH HISTORY

6. Nathan has been a patient of Mackie Road Clinic (the **Clinic**) in Bentleigh since his early childhood. The evidence suggests that from around 2013, he had been seen at the Clinic for behavioural and/or mental health concerns. Nathan was a regular patient of General Practitioner, Dr Tatiana Brodskaia at the Clinic from 2016 until his death.

7. In 2017, at the age of 13, Colin took Nathan to Headspace. Following an assessment, a staff psychiatrist prescribed Nathan 25mg of Fluoxetine to manage his anxiety. Nathan continued on Fluoxetine for a number of years. In mid 2020, following a decline in Nathan's mental health, Nathan's dose of Fluoxetine was increased from 25mg to 50mg per day. Nathan had a bad reaction and was involved in an incident with his father on 10 October 2020.

8. Following the incident, Nathan was assessed by the Police Ambulance Clinical Early Response unit. He was subsequently admitted to 'Stepping Stones' an adolescent inpatient mental health unit managed by Monash Health for approximately 1 week. During this admission, Nathan's dose of Fluoxetine was reduced to 25 mg per day.

9. On 27 October 2020, Dr Brodskaia referred Nathan to Ms Catherine Hogan, Psychologist at Live Life Psychology. Nathan attended four appointments with Ms Hogan between November

2020 to March 2021. Ms Hogan diagnosed Nathan with severe depression, anxiety and stress. Nathan's reported concerns were difficulty engaging in his second attempt at completing Year 12 studies, his low energy, lack of motivation and disordered sleep patterns. Ms Hogan stated that Nathan was booked in for a further appointment in April 2021 which he did not attend and that he did not re-book any further appointments. In his statement to police, Colin stated that Nathan was unable to further consult with Ms Hogan due to their being a six-month waitlist at her practice.

10. On 4 May 2021, Nathan attended an appointment with Dr Brodskaia via telehealth after not consulting with her for 6-months. He reported an increase in his anxiety about returning to school and that he was staying up until 4am often playing computer games and then sleeping during the day. He mentioned that he had some thoughts of self-harm late at night. Dr Brodskaia advised Nathan that it would be helpful for him to see a psychiatrist, given his age, ongoing symptoms despite being on antidepressants and the degree that he had become withdrawn from his sleep cycles. Colin expressed to Dr Brodskaia that Nathan would be unlikely to attend the appointments due to his habits of sleeping during the day.

11. Due to Nathan's pervious adverse reaction to an increased dose of Fluoxetine, Dr Brodskaia weaned Nathan off Fluoxetine and switched his medication to Zoloft. He commenced the medication at 25mg per day for a week before increasing to 50mg daily. Dr Brodskaia stated that Nathan and his father were advised that this change could initially precipitate an increase in agitation and thoughts of self-harm or suicide and were advised to monitor for these changes.

12. Nathan attended review appointments with Dr Brodskaia on 11 May 2021 and 25 May 2021. At these appointments, Nathan did not report any concerns or side-effects, nor thoughts of self-harm of suicide. At a follow up appointment on 22 June 2021, Nathan reported that he had an improved mood and was not experiencing any side effects. However, Colin was still concerned regarding Nathan's low motivation and not leaving the house. Dr Brodskaia stated that she discussed a referral to a psychologist and/or psychiatrist, but Colin felt that Nathan would not make it to an appointment during the day. At this consultation, Nathan's dose of Zoloft was increased to 100mg daily.

13. Dr Brodskaia next reviewed Nathan on 20 July 2021. During the consultation he reported no side effects with the increased dose of medication, he had been waking up earlier than before, but reported that the COVID-19 pandemic was impeding his motivation and ability to leave

the house and work. Nathan agreed to a referral to a psychologist. A referral was provided for Moving Mindsets Clinic which was sent to Colin via email.

14. Nathan had a final review appointment with Dr Brodskaia via telehealth on 17 August 2021. He reported that the waitlist to see a psychologist at Moving Mindsets was approximately 6 months, but reported a stable mental health and that his sleep was better. He also advised Dr Brodskaia that his anxiety levels were stable, and he felt that the Zoloft was helping with this. Dr Brodskaia provided Nathan with a referral to a psychiatrist who was conducted telehealth appointments. This was her last appointment with Nathan before his death.

## THE CORONIAL INVESTIGATION

15. Nathan's death was reported to the Coroner as it fell within the definition of a reportable death in the *Coroners Act 2008* (Vic) (**the Act**). Reportable deaths include deaths that are unexpected, unnatural or violent or result from accident or injury.

16. 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.

17. 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.

18. Victoria Police assigned Sergeant Julia Knight to be the Coroner's Investigator for the investigation of Nathan's death. Sergeant Knight 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.

19. This finding draws on the totality of the coronial investigation into the death of Nathan Ruan Roy Greenwood 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]

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

### Identity of the deceased, pursuant to section 67(1)(a) of the Act

20. On 17 September 2021, Nathan Ruan Roy Greenwood, born 20 March 2003, was visually identified by their father, Mr Colin Greenwood.

21. Identity is not in dispute and requires no further investigation.

### Medical cause of death, pursuant to section 67(1)(b) of the Act

22. On 20 September 2021, Specialist Forensic Pathologist, Dr Michael Burke from the Victorian Institute of Forensic Medicine (**VIFM**), conducted an external examination and provided a written report of his findings dated 23 September 2021.

23. The post-mortem external examination and CT scan were unremarkable.

24. Toxicological analysis of ante-mortem and post-mortem samples identified the presence of:

    - Sertraline[2]; and
    - Nitrate/Nitrate[3].

25. The presence of methaemoglobin was also identified which is said to arises from the ingestion of Sodium Nitrite and the oxidisation of haemoglobin (the protein in red blood cells that transports oxygen and carbon dioxide around the body) to methaemoglobin which in turn interferes with blood oxygen transport.

26. It is noted that the testing for Nitrate/Nitrite was conducted by the Queensland Health and Forensic and Scientific Services.

27. Dr Burke provided an opinion that the medical cause of death was *Sodium Nitrite toxicity*.

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[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.

[2] Sertraline is sold under the brand name Zoloft and is an antidepressant of the selective serotonin reuptake inhibitor class.

[3] Sodium Nitrite, organic nitrates and other nitrites act to release the nitrite ion into the body. It is widely used for fertilizers, and both nitrites and nitrates are used to cure meats. Nitrites and Nitrates salts have also been advertised by euthanasia organisations.

28. I accept Dr Burke's opinion as to the cause of death.

**Circumstances in which the death occurred, pursuant to section 67(1)(c) of the Act**

29. On the evening of 16 September 2021, Nathan cooked a meal and went to his room inside the garage. At around midnight, Colin retired for the evening.

30. At around 3.30am on 17 September 2021, Nathan contacted triple zero requesting an ambulance. He told the call taker that he had consumed 30 grams of Sodium Nitrite mixed with water. The call taker asked Nathan when he had taken the substance and he advised that he had lost consciousness for a short time but estimated that he had taken the substance approximately 30 minutes before he contacted emergency services. Nathan advised the call taker that he would wait at the front gate of his family home, as he did not want to wake up his family.

31. At around 3:43am, Ambulance Victoria arrived on scene and found Nathan rolling around in a distressed state on the nature strip outside the Greenwood family home. Approximately 10 minutes later, MICA paramedics arrived on scene to assist. Nathan was unconscious by this time and went into cardiac arrest. Cardiopulmonary resuscitation was administered.

32. Nathan was transferred to the Monash Medical Centre in Clayton. Sadly, he did not regain consciousness and passed away at around 5.45am.

**INVESTIGATION BY VICTORIA POLICE**

33. Victoria Police commenced an investigation into the circumstances which led to Nathan's death. The Greenwood family home and Nathan's bedroom were examined as well as Nathan's room inside the garage.

34. Nathan's bedroom was observed to be clean and tidy. The room in the garage contained a computer, desk, couch, bar fridge and closet of clothing. Police observed 8 cans of beer, a bottle of Jägermeister and 3 containers of 'G Fuel' which is a powder used as an energy drink.

35. In the desk draw, police located a container with a label which stated that it contained 100g of 'Sodyum Nitrit' with a supplier label of 'LabShop41'. Police located a receipt that indicated Nathan had placed the order on 24 August 2021 through Amazon Marketplace. The packaging for product was located in the recycling bin outside of the Greenwood family home.

36. A packet of 'Sertraline 100 mg' as well as a packet of 'Anagraine (Metoclopramide Hydrochloride 5 mg) Paracetamol 500 mg'[4] were also located.

37. Colin provided police with the passwords to Nathan's computer and social media. On Nathan's computer, Colin discovered a suicide letter written by Nathan which had been emailed to one of his friends. Nathan's Gmail account also contained correspondence between Nathan and 'Sanctioned Suicides' which is a publicly available internet forum known for its open discussion of suicide and suicide methods.

38. I discuss the issues associated with the online purchase and sale of Sodium Nitrite and Sodium Nitrate as well as the availability of information on Sodium Nitrite as a suicide method in the comments section below.

**FINDINGS AND CONCLUSION**

39. Pursuant to section 67(1) of the Act, I make the following findings:

    a) the identity of the deceased was Nathan Ruan Roy Greenwood, born 20 March 2003;

    b) the death occurred on 17 September 2021 at Monash Medical Centre, 246 Clayton Road, Clayton, Victoria, 3168, from *sodium nitrite toxicity*; and

    c) the death occurred in the circumstances described above.

40. Having considered all of the circumstances, I find that Nathan intentionally took his own life.

**COMMENTS**

Pursuant to section 67(3) of the Act, I make the following comments connected with the death.

41. The Court has previously investigated a number of deaths involving Sodium Nitrite. To better understand the occurrence of these deaths in Victoria and the associated issues, I obtained information from the Coroner's Prevention Unit[5] (**CPU**) at the Court.

42. The CPU advised that Sodium Nitrite is an inorganic compound similar in appearance to table salt. The *Australia New Zealand Food Standards Code* (Food Standards Code) permits the

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[4] Anagraine is used to treat symptomatic headache, nausea and vomiting.

[5] The CPU was established in 2008 to strengthen the coroners' prevention role and assist in formulating recommendations following a death. The CPU is comprised of health professionals and personnel with experience in a range of areas including medicine, nursing, mental health, public health, family violence and other generalist non-clinical matters. The CPU may review the medical care and treatment in cases referred by the coroner, as well as assist with research related to public health and safety.

use of Sodium Nitrite in food products including meat, poultry and game products. 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.

43. Sodium Nitrite is classified as a poison in the Commonwealth's *Standard for the Uniform Scheduling of Medicines and Poisons* (**Poisons Standard**). Depending on the concentration of Sodium Nitrite and its intended use, a product containing Sodium Nitrite could fall under one of four schedules in the Poisons Standard, each of which is subject to different access and labelling requirements, as follows:

    - the product contains 15% or less Sodium Nitrite, it is generally listed under Schedule 2, 5 or 6 of the Poisons Standard and can be accessed without restriction.

    - if the product contains 15% or more Sodium Nitrite, it is generally listed under Schedule 7 of the Poisons Standard and its availability, use and possession may be restricted.

44. Whilst medicine and poison scheduling, occurs at a Commonwealth level, the restrictions applied to the scheduled substances are determined at the state level. In Victoria the *Drugs, Poisons and Controlled Substances Act 1981* (Vic) (**DPCS Act**) is the relevant legislation for this purpose. Under the DPCS Act, certain restrictions apply to all Schedule 7 poisons.

45. For example:

    - Under Section 38 of the DPCS Act, a person who sells or supplies any Schedule 7 poison in Victoria is required to keep an accurate record of the purchaser, date of supply, and name and quantity of the poison supplied.

    - Under Section 40 of the DPCS Act a Schedule 7 poison must not be supplied to a child in Victoria.

46. Additional restrictions are also applicable to Schedule 7 poisons listed in Victoria's Poisons Code (a legislative instrument prepared under Section 12 of the DPCS Act). If a poison is listed in the Poisons Code, then it cannot be offered for general sale by retail, and authorisation or licencing under the DPCS Act is required to sell or supply the poison by wholesale or retail (Section 26 and Section 27 of the DPCS Act). However, Sodium Nitrite is not listed in the Poisons Code, so there are no effective barriers in Victoria to a person obtaining a product containing Sodium Nitrite regardless of schedule, provided the person is aged 18 years or over.

47. Sodium Nitrate 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. As outlined in the Food Code Standards, sodium nitrate 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 exposed to bacteria present on meats during the curing process. Sodium Nitrate is also used in fertilisers, pyrotechnics and rocket propellant.

48. Sodium Nitrate is not currently listed in the Poisons Standard, so are no restrictions on sale or access to it. 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.

49. Although Sodium Nitrate is relatively non-toxic when ingested, 5% of the nitrate is rapidly reduced to the more toxic nitrite by bacteria in the saliva and gastrointestinal tract. Ingesting a larger amount of sodium nitrate can therefore produce a toxic level of nitrite and lead to (potentially fatal) poisoning.

**Sodium Nitrite ingestion as a suicide method**

50. The CPU advised that in recent times, the worldwide number of reported suicide cases involving Sodium Nitrite as a suicide method has dramatically increased.

51. The dissemination of Sodium Nitrite ingestion as a suicide method in Australia appears to have been largely driven by leading pro-euthanasia advocacy organisation, 'Exit International'. Exit International is a not-for-profit organisation founded in 1997 by Australian, Dr Philip Nitschke. He is also the co-author of the *Peaceful Pill Handbook* which contains end of life strategies and step by step instructions for peaceful and reliable death which was banned in Australia.

52. In September 2017, Exit International released an updated *Peaceful Pill eHandbook* that identified three inorganic salts as peaceful and reliable means to suicide: sodium cyanide, sodium azide, and Sodium Nitrite. The CPU advised that this publication ranked Sodium Nitrite as being the most suitable for use in suicide, when considering a range of factors including reliability, availability, peacefulness and safety.

53. Exit International has since continued to advocate for Sodium Nitrite as a viable and reliable alternative to pentobarbitone, declaring Sodium Nitrite to be '*the holy grail in the right-to-die*

*movement*'. The October and November 2020 updates of the e-Handbook included new material on Sodium Nitrite suicide.

**Sodium Nitrite suicide in Victoria**

54. The CPU advised that until recently, no Victorian forensic toxicologist or forensic pathologist had encountered Sodium Nitrite in their work at the VIFM. The CPU noted that it is possible that relevant deaths had occurred but were not recognised as such during forensic medical examination because of lack of past exposure to these deaths.

55. The CPU identified 52 Sodium Nitrite suicides in Victoria from 2017 to 2023. The CPU noted that despite the recent publicity and attention given to Sodium Nitrite ingestion as a suicide method, the annual number of deaths has been relatively steady since 2019 with an average of 10 deaths per year.

56. The CPU noted that where the Sodium Nitrite sources could be identified (in 23 of the 52 deaths), the sources were primarily online vendors (both Australia and based overseas) but were otherwise diverse, including food stores, chemical and laboratory supply companies and private sellers. The data also indicates that in 23 of the 52 suicides that the deceased, researched the suicide method. The most frequently mentioned were Exit International and the *Peaceful Pill Handbook* and other sources included the Sanctioned Suicide online forum and the Suicide Squad dark website.

57. In addition, the CPU advised that in 28 of the deaths for which toxicology reports were available, an anti-emetic medication (an anti-vomiting or nausea medication), as was taken by Nathan was detected. The CPU noted that this is a potential proxy indicator for people educating themselves about the suggested method of taking anti-emetics to prevent vomiting the Sodium Nitrite after ingesting it.

**Restricting access to Sodium Nitrite**

58. Sodium Nitrite is widely used for legitimate purposes in many different areas including as a multifunctional food additive and sold as an online product which causes difficulties in restricting the purchase and sale of the product.

59. Following Nathan's death, Colin wrote to the Hon. Mark Dreyfus KC MP, Attorney General of Australia (**the Attorney General**) to advise that Nathan had purchased the Sodium Nitrite through Amazon Marketplace. The Attorney General then wrote to Amazon Australia seeking

information about whether Amazon Australia had considered banning the sale of Sodium Nitrite on its platform and regulating the purchase of the product.

*60.* Ms Janet Menzies, Country Manager of Amazon Australia responded to the letter from the Attorney General and advised that the sale of Sodium Nitrite and Sodium Nitrate as standalone products from Amazon Australia is not permitted and that these products have been restricted since 2017.

61. Ms Menzies also acknowledged Colin's concern about the ability of Australians to purchase Sodium Nitrite from Amazon. To that end, Ms Menzies advised that Amazon Australia was investigating further restricting Australian customers' ability to purchase these products from other Amazon stores.

62. I subsequently sought an update from Amazon Australia on any additional investigation that had been undertaken by Amazon Australia since becoming aware of the circumstances of Nathan's death. In response to that request, Amazon Australia advised that it has continued to work closely with Amazon's global teams to continuously monitor and improve the effectiveness of global controls on products such as Sodium Nitrite and Sodium Nitrate. Amazon Australia also advised that in 2022 to more effectively restrict the sale and purchase of Sodium Nitrite, the global Amazon teams introduced a global policy that restricts products that have Sodium Nitrite as the primary or sole ingredient from being made available to Australian customers shopping on other Amazon stores. I commend Amazon Australia on this ongoing work.

63. Further, the CPU advised that the Therapeutic Goods Association recently considered the issue of how access to Sodium Nitrite should be regulated in Australia. This occurred in the context of an April 2021 proposal to create a new Schedule 10 entry in the Poisons Standard for products containing concentrations above 15% of Sodium Nitrite.

64. At the time when this proposal was considered, products with a concentration above 40% Sodium Nitrite were listed in Schedule 7 of the Poisons Standards. The ultimate outcome of the consultation process was that the Schedule 10 proposal was rejected, but the concentration threshold for a product to fall under Schedule 7 of the Poisons Standard was lowered from 40% to 15%. The reasons given for the decision included:

- the legitimate uses for Sodium Nitrite across multiple industries (such as food, pharmaceuticals, explosives, dyes, and pesticides) meant that the availability of Sodium Nitrite might have a substantial unintended impact on business;

- placing Sodium Nitrite products in Schedule 10 would mean that those products cannot be sold or used anywhere in Australia, without exception; and

- amending the existing Schedule entries was viewed as a means to place stronger controls on Sodium Nitrite access while not unduly restricting industrial uses.

65. Having considered the available evidence, it is evident that individuals who may choose to suicide with the use of Sodium Nitrite can easily purchase the product online notwithstanding the restrictions in place on websites such as Amazon Marketplace.

66. In this regard, I am of the view that a recommendation to further restrict access to the online purchase of Sodium Nitrite is worth considering. In this regard, the CPU suggested that I make a recommendation to the Secretary to the Victorian Department of Health to include Sodium Nitrite in the Victorian Poisons Code which would restrict the general sale of the product through a retailer.

67. I accept this proposal by the CPU, but I also acknowledge that this will not prevent individuals being able to purchase the product online from interstate or overseas vendors.

**Taking down online information about sodium nitrite**

68. The CPU also advised that another frequently mentioned intervention is to target online sources of information about Sodium Nitrite as a suicide method. The basis of this proposal is that the majority of people who self-harmed by taking Sodium Nitrite had learned about the method online.

69. While to date, no Victorian coroner has considered making a recommendation restricting the information about Sodium Nitrite suicide, the issue of controlling information about other suicide methods has been considered. Most recently, Coroner Spanos (as she was then known) commented in her finding following the *Coronial Investigation into the Death of Joseph Waterman (COR 2014 000169)* that:

> 'Suicide organisations' publications advocating specific suicide methods…are banned in Australia but there is no practical way to prevent Australians from viewing and accessing them via the internet'.

70. The CPU also concurs that, given the ubiquity of information about Sodium Nitrite suicide on the internet, there is no practical way to implement an intervention.

71. Having considered the available evidence and advice from CPU, I agree that given the sheer volume of material online that is available to an individual who is seeking information about Sodium Nitrite as a suicide method there does not appear to be a practical way to prevent Australians from accessing that information or the product from other sources on the internet.

72. However, notwithstanding the difficulties outlined above, I am of the view that the Federal Government should investigate ways to further restrict the online sale and distribution of Sodium Nitrite in Australia.

**RECOMMENDATIONS**

Pursuant to section 72(2) of the Act, I make the following recommendation:

That the Assistant Minister for Mental Health and Suicide Prevention; The Hon Emma McBride investigate in conjunction with other appropriate Ministers, Departments and Agencies of the Commonwealth ways to further restrict the online sale and distribution of Sodium Nitrite in Australia.

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

Pursuant to section 73(1B) 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:

**Colin Greenwood, Senior Next of Kin**

**Janet Menzies, Amazon Australia**

**Secretary to the Victorian Department of Health**

**Leading Senior Constable Shane Ruwhiu, Coroner's Investigator**

Signature:

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**JUDGE JOHN CAIN**
**STATE CORONER**
Date: 25 July 2024

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 6 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.