IN THE CORONERS COURT
OF VICTORIA
AT MELBOURNE

COR 2023 003025

FINDING INTO DEATH WITHOUT INQUEST

Form 38 Rule 63(2)

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

Findings of:	Coroner Therese McCarthy
Deceased:	JH
Date of birth:	1982
Date of death:	On or about 5 June 2023
Cause of death:	1a: Combined effects of mixed drug toxicity (amphetamine, alprazolam, bromazolam, cocaine and metonitazene) and bronchopneumonia
Place of death:	Mitcham, Victoria
Keywords:	Mixed drug toxicity; novel psychoactive substance; NPS; bronchopneumonia

INTRODUCTION

1. On 5 June 2023, JH was 41 years old when he was found deceased at his residence. At the time of his death, JH lived alone in Mitcham.

2. JH is a father of two who had separated from his children's mother. He is also survived by his sister and parents.

Background

3. JH's medical history included attention deficit hyperactivity disorder (**ADHD**), cirrhosis, nocturia and restless legs for which he was prescribed several medications.

4. JH's Pharmaceutical Benefit Scheme (**PBS**) records confirm that he was prescribed desvenlafaxine, atomoxetine, perindopril/amlodipine, dexamfetamine, fluconazole, ferric carboxymaltose (injection), pantoprazole, secukinumab in the year leading to his death.

5. JH also had a history of opioid addiction. The evidence indicates that he had previously sourced a 'natural' substance online from overseas to treat his nocturia. He was also immunocompromised and had been recently admitted to Box Hill Hospital for sepsis treatment on 10 May 2023.[1]

THE CORONIAL INVESTIGATION

6. JH'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.

7. 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.

8. 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

[1] Court File (**CF**), Eastern Health Medical Records, page 13.

comments or recommendations in appropriate cases about any matter connected to the death under investigation.

9. Coroner John Olle initially had carriage of this investigation until he retired, and it then came under my purview in August 2025 for the purposes of finalising the investigation and making findings.

10. This finding draws on the totality of the coronial investigation into the death of JH. 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.[2]

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

Circumstances in which the death occurred

11. On 31 May and 1 June 2023, JH underwent a tattooing session on his right forearm and was scheduled for further work on 2 June 2023.

12. On 2 June 2023, JH did not attend his tattoo appointment. He told his cousin, BK, that he was feeling unwell and sought assistance from him. BK is a paramedic. He attended JH's home to check on him that day, during which JH stated that he experienced symptoms suggestive of sepsis. JH indicated that he did not wish to attend a hospital, but he was agreeable to attend a local clinic.

13. At approximately 3.30pm, JH attended Whitehorse Medical Clinic with BK's support. He consulted Specialist General Practitioner, Dr Tristian Htut (**Dr Htut**), who noted JH's recently tattooed area was "*a bit [warm] to touch*" and suspected that it may be cellulitis. Dr Htut opined that JH required immediate intravenous antibiotic treatment and made an urgent referral to Box Hill Hospital for him to be admitted to the Emergency Department.

14. On 3 June 2023, at approximately 8.45am, JH called BK and informed him that he was feeling better. He also told BK that he had discharged himself from Box Hill Hospital against medical

[2] 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.

advice, despite his treating clinicians' recommendation that he remain in hospital for two further nights.

15. Later that afternoon, at approximately 4.40pm, JH called BK and said that although he did not feel any worse, his hand was sore from the blood draw.

16. On 4 June 2023, BK contacted JH by text message but received no response.

17. On 5 June 2023, at approximately 12.30pm, BK called JH but received no response. Concerned for JH's welfare, BK attended JH's unit and located him on a recliner chair with no sign of life.

18. BK contacted emergency services. Victoria Police responded and commenced an investigation. Following a scene examination, police observed a wide array of prescription and non-prescription drugs, which included his usual prescription medications. Police also located a black container containing several unmarked 'yellow' circular tablets.

Identity of the deceased

19. On 5 June 2023, JH, born 1982, was visually identified by his cousin, BK.

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

Medical cause of death

21. Forensic Pathology Trainee Dr Kaitian Audrey Yeo[3] (**Dr Yeo**) from the Victorian Institute of Forensic Medicine (**VIFM**) conducted an autopsy on 8 June 2023 and provided a written report of her findings dated 4 October 2023.

22. The autopsy revealed microscopic evidence of bronchopneumonia involving both lungs. The elevated level of serum C-reactive protein is consistent with an infection. Dr Yeo explained that bronchopneumonia is an infection of the lungs, predominantly involving the larger airways (bronchi and bronchioles) with extension into the surrounding lung parenchyma. Bronchopneumonia can lead to sepsis and respiratory function impairment.

23. The autopsy also revealed evidence of benign nephrosclerosis.

[3] Supervised by Dr Melanie Archer, Forensic Pathologist from the Victorian Institute of Forensic Medicine.

24. Dr Yeo noted the recently administered tattoo on the right forearm showed no macroscopic or microscopic evidence of infection. There was no post-mortem evidence of injuries that may have caused and/or contributed to the death.

25. Toxicological analysis of post-mortem samples identified the presence of amphetamine[4], cocaine[5] and its metabolites (benzoylecgonine, ecgonine methyl ester, norcocaine), alprazolam[6], bromazolam[7], metonitazene and desmethylvenlafaxine[8]. No ethanol (alcohol) was detected.

26. Dr Yeo explained that amphetamine is a central nervous system (**CNS**) stimulant, while alprazolam, bromazolam and metonitazene are CNS depressants. Bromazolam is a novel benzodiazepine and has no established therapeutic dose. Metonitazene is a novel synthetic opioid with potency similar to fentanyl and also has no therapeutic dose.

27. Dr Yeo also referred to the Victorian Department of Health's drug alert[9] of metonitazene and noted that it is white powder containing metonitazene and has been 'mis-sold' as cocaine in Melbourne.

28. Dr Yeo explained further that the combination of CNS depressants and stimulants is more dangerous than when either drug is used alone, as stimulants potentiate the tendency of CNS depressants to cause respiratory depression, leading to death.

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[4] Amphetamine is an indirectly acting sympathomimetic phenethylamine derivative thought to enhance dopaminergic and noradrenergic neurotransmission. It is both abused for its stimulant effects and used therapeutically.
Dexamfetamine (dexamphetamine, d-amphetamine, dextroamphetamine) is the d-isomer of amphetamine is indicated for ADHD and narcolepsy.
Amphetamine is also a metabolite of other drugs, including fenethylline, fenproporex, lisdexamphetamine, methamphetamine and prenylamine; only the prodrug lisdexamphetamine indicated for ADHD is listed on the Australian Register of Therapeutic Goods.

[5] Cocaine is an alkaloid found in the leaves of Erythroxylon coca (2% by weight). It is an indirectly acting sympathomimetic and is abused for its stimulant properties. Cocaine is highly unstable and rapidly hydrolysed to inactive metabolites, benzoylecgonine and ecgonine methyl ester, that are further hydrolysed to ecgonine. Norcocaine and the isoforms of hydroxy cocaine are active metabolites but produced at low concentrations. Anhydroecgonine methyl ester generated upon pyrolysis is a marker of smoking cocaine. Cocaethylene is formed by the transesterification of cocaine and ethanol when co-consumed.

[6] Alprazolam is a triazolobenzodiazepine derivative indicated for some depression symptoms, panic attacks, and panic disorder and agoraphobia.

[7] Bromazolam, also known as XLI-268, is a novel benzodiazepine that was first reported to European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) in 2016. It is considered to be a novel psychoactive substance, one of many new synthetic benzodiazepines. Bromazolam is not approved for medicinal use and has no established therapeutic dose. The pharmacology and toxicology are not well-known, making the interpretation of any measured concentration difficult. See further discussion regarding bromazolam in paragraphs 40 and 41.

[8] Desmethylvenlafaxine (O-desmethylvenlafaxine) is the major active metabolite of venlafaxine indicated for major depression.

[9] Victorian Department of Health, *Drug Advice (DA-10) Alert: Metonitazene sold as cocaine,* August 2023. Available on the Department of Health's website here.

29. Desmethylvenlafaxine is a metabolite of venlafaxine, an antidepressant of the serotonin-norepinephrine reuptake inhibitor (**SNRI**) class. The concentration of desmethylvenlafaxine detected in the post-mortem blood sample was within the non-toxic range. As such, Dr Yeo opined that it did not cause or contribute to death.

30. Dr Yeo provided an opinion that the medical cause of death was:

    1(a) COMBINED EFFECTS OF MIXED DRUG TOXICITY (AMPHETAMINE, ALPRAZOLAM, BROMAZOLAM, COCAINE AND METONITAZENE) AND BRONCHOPNEUMONIA.

31. I accept Dr Yeo's opinion.

CORONERS PREVENTION UNIT REVIEW

32. The Coroners Prevention Unit[10] (**CPU**) was requested to provide advice in assisting me to understand the contribution of prescription drugs and recreational drugs detected in the post-mortem toxicology analysis, as well as the appropriateness of their dosages prescribed in the period proximal to his death and whether there are any prevention opportunities to be pursued.

33. The CPU reviewed several sources of evidence obtained as part of my investigation, including JH's Medical and Medicare Patient History, PBS claim history, medical records Eastern Health and Whitehorse Road Medical Centre.

Contributory drugs

Dexamfetamine/lisdexamphetamine and Desvenlafaxine

34. In the 12 months leading up to his death, specifically for the period between 28 December 2022 and 3 June 2023, PBS records show that prescriptions for dexamfetamine/*lisdexamphetamine* and desvenlafaxine were dispensed to JH. There were no concerns arising from these prescriptions or any irregularities.

[10] 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.

Alprazolam

35. There were no scripts for alprazolam dispensed to JH in the 12 months leading up to JH's death. However, police located one blister packet of 2mg and a bottle of 2mg alprazolam tablets at the scene.

36. Eastern Health medical records revealed that JH was administered alprazolam 2mg during his hospital admission in May 2023 and June 2023 respectively. However, there is no evidence that he was provided any alprazolam scripts to be dispensed outside of hospital.

37. JH's patient's records from Burnley Street Medical Centre record a history of unprescribed administration of alprazolam (as well as clonazepam), indicating that he obtained these medications through sources other than registered medical practitioners. The use of these drugs was documented in correspondence sent by Dr James Ward, JH's treating sleep specialist to Dr Bill Arsenakis, JH's general practitioner. JH's reason for taking these medications is unknown.

38. Given that there was no cogent evidence to suggest that JH was prescribed alprazolam by medical practitioners, I accept Dr Ward's evidence that the alprazolam in JH's system was obtained without a prescription.

Bromazolam

39. Bromazolam is a novel benzodiazepine. According to the Victorian Department of Health's (**DHS**) drug alert for novel benzodiazepines dated May 2022, bromazolam is one of five novel benzodiazepines found in round, white, unmarked tablets that are commonly sold in the unregulated market in Victoria.[11]

40. The DHS's novel benzodiazepines drug alert warns that generally novel benzodiazepines produce similar effects to prescription benzodiazepines but are often more potent and unpredictable, as so-called 'novel' drugs have not been well-studied. Furthermore, using any benzodiazepines with other depressants such as alcohol or opioids increases the risk of overdose.

[11] Victorian Department of Health, *Drug Advice (DA-05) Alert: High Potency benzodiazepine tablets*, May 2022. Available on the Department of Health's website here.

EXPERT TOXICOLOGIST OPINION

41. After considering the opinion of Dr Yeo as to the medical cause of death, I sought an opinion from a forensic toxicologist expert to further understand the toxicity of metonitazene, particularly when taken in combination with the other drugs identified in JH's system,

42. I requested an opinion from Professor Olaf Drummer, Forensic Toxicology Consultant Specialist from the VIFM who provided an expert report on13 November 2025.

43. Professor Drummer explained that metonitazene is a highly potent form of nitazenes from the opioid class of drugs. It is an unregulated drug. It acts as a strong agonist at the mu-receptor[12], with a potency estimated to be approximately 10 to 100 times greater than of morphine, depending on the route of administration. As a result, relatively small amounts can cause significant opioid effects, including respiratory depression.

44. Metonitazene has been detected in recreational drug markets since 2019 in Europe. In recent years metonitazene has been identified in increasing numbers in both clinical settings and coronial cases in Australia. It is often sold as heroin or fentanyl or mixed with other recreational substances.

45. Professor Drummer advised that, because metonitazene is not a regulated substance, there is limited information regarding typical doses or predictable toxic effects. Its primary pharmacological effects are analgesia and sedation; however, at higher doses it can cause adverse effects such as nausea, low heart rate and reduced body temperature which can lead to respiratory depression and coma, with the latter symptoms being life threatening.

46. Professor Drummer opined that post-mortem findings associated with nitazene toxicity are non-specific and are similar to those seen in opioid-related deaths, including congested lungs, bronchopneumonia and petechia.

47. In JH's toxicology results, amphetamine was detected but methamphetamine was not. Professor Drummer advised that the detected concentration found in JH's results is consistent with therapeutic use and that this finding is consistent with the therapeutic use of lisdexamphetamine (Vyvanse) for ADHD, which is rapidly metabolised to amphetamine.

[12] A mu receptor, or mu-opioid receptor, is a G-protein-coupled receptor in the brain and nervous system that binds to opioids, mediating strong pain relief but also causing euphoria, sedation, slowed breathing and physical dependence.

48. Desvenlafaxine, prescribed for depression, was also detected at a concentration consistent with therapeutic use and was not considered to have contributed to JH's death.

49. In contrast, Professor Drummer identified recent cocaine use and the presence of two benzodiazepines – alprazolam and bromazolam, in addition to metonitazene could have been responsible for JH's death in combination with other factors including his respiratory illness and sepsis. He explained that alprazolam is prescribed for anxiety under the brand name Xanax (and other generic brands). However, recreational/non-prescription Xanax tablets are known to contain novel benzodiazepines, including bromazolam. It is impossible to ascertain whether the alprazolam consumed by JH was contaminated with these other novel substances.

50. Nitazenes, in turn, are highly potent opioids, and like heroin and other opioids have the potential to cause sudden death by depressing the respiratory centre in the brain. The use of opioids, particularly opioids not prescribed to the specific individual, including those that may be illicitly sourced or inadvertently contaminated, can also cause the development of pulmonary infections such as bronchopneumonia.

51. In JH's case, Professor Drummer opined that the blood concentration of nitazene fell within the range reported in other fatal cases. He further advised that the presence of additional substances affecting the cardiovascular system and/or breathing centre, such as cocaine and benzodiazepines, combined with significant disease, including pneumonia, would have contributed to toxicity. Together these factors led to an increased risk of JH's sudden drug-related death.

52. I accept Professor Drummer's opinion.

FINDINGS

53. Pursuant to section 67(1) of the *Coroners Act 2008* I make the following findings:

    a) the identity of the deceased was JH, born 1982;

    b) the death occurred on or about 5 June 2023 in Mitcham, Victoria, 3132, from the *combined effects of mixed drug toxicity (amphetamine, alprazolam, bromazolam, cocaine and metonitazene) and bronchopneumonia*; and

    c) the death occurred in the circumstances described above.

54. Having considered all of the evidence, I am satisfied that JH's death was caused by the combined effects of multiple substances including prescription medication and illicit substances – bromazolam, cocaine and metonitazene, in the context of bronchopneumonia, and not the use of a novel psychoactive substance alone. I am also satisfied his intentional use of multiple substances contributed to his death.

COMMENTS

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

55. I note that in other matters[13] where deaths have been directly attributed to the contribution of novel psychoactive substances, Victorian coroners have made recommendations aimed at improving early detection and public awareness of emerging drug risks. While those cases differ from the present matter, I adopt the underlying public health objectives and endorse, in principle, the recommendations made in those cases regarding the development of an early drug warning system and strategies to educate the community about the dangers and risks associated with the unregulated drug market. [14]

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

ORDERS AND DIRECTIONS

I order that this finding be published on the Coroners Court of Victoria website in accordance with the *Coroners Court Rules 2019*.

[13] In 2021, following her investigation into the deaths of five young people (Court Reference: COR 2016 003441, COR 2016 005703, COR 2016 006116, COR 2017 000214, COR 2017 000216, delivered 31 March 2021, Findings available here: COR 2016 003441, COR 2016 005703, COR 2016 006116, COR 2017 000214, COR 2017 000216), Deputy State Coroner Paresa Spanos made a groundbreaking recommendation to the "*Department of Health as the appropriate arm of the Victorian Government, implements a drug early warning network in the State of Victoria as a matter of urgency, to reduce the number of preventable deaths (and other lesser harms) associated with the use of drugs obtained from unregulated drug markets"*. In her finding, Deputy State Coroner Spanos outlined the feasibility and the interdependence of both systems.

[14] Most recently, in her Finding into the passing of Raymond John Flaherty (Court Reference: COR 2025 000913) handed down on 4 December 2025, Coroner Ingrid Giles recommended that the Victorian Department of Health commission the Chief Addiction Medicine Advisor to investigate and address the risks associated with the increasing availability of novel and counterfeit benzodiazepines in unregulated drug markets, including through targeted harm-reduction strategies, education, drug-check initiatives, and consultation with specialist services and stakeholders. Finding available here.

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

FH & GH, Senior Next of Kin

Department of Health

Eastern Health

Dr Tristian Htut

Dr James Ward

Dr Bill Arsenakis

Senior Constable Luke Yeatman, Coronial Investigator

Signature:

Coroner Therese McCarthy

Date: 17 July 2026

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.