IN THE CORONERS COURT
OF VICTORIA
AT MELBOURNE

COR 2023 005840

FINDING INTO DEATH WITHOUT INQUEST

Form 38 Rule 63(2)

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

Findings of:	Coroner Ingrid Giles
Deceased:	Gayle Patricia Carley
Date of birth:	5 October 1946
Date of death:	19 October 2023
Cause of death:	1a: Ischaemic heart disease
Place of death:	Bairnsdale Regional Health Service/Hospital 122 Day Street Bairnsdale Victoria 3875

INTRODUCTION

1. On 19 October 2023, Gayle Patricia Carley[1] was 77 years old when she died following an unwitnessed collapse at her home, after which she was transported by Ambulance Victoria (**AV**) paramedics to Bairnsdale Regional Hospital.

2. At the time of her death, Gayle lived at her home in Eastwood with her husband Jeffrey Carley (**Jeffrey**). Gayle and Jeffrey relied on community carers who would visit the home to support them to live independently.

THE CORONIAL INVESTIGATION

3. Gayle'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.

4. 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.

5. 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.

6. This finding draws on the totality of the coronial investigation into the death of Gayle Patricia Carley. 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]

[1] Referred throughout my finding as 'Gayle' unless more formality is required.

[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.

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

Circumstances in which the death occurred

7. On 19 October 2023, a carer visited Gayle and Jeffrey's home and discovered that Gayle had collapsed on the floor of her bedroom. At 11.42am, emergency services were called, and a '000' call-taker established that Gayle was unconscious and her breathing was abnormal.

8. At 11.50am, an AV advanced life support (**ALS**) paramedic team arrived, followed closely by a mobile intensive care ambulance (**MICA**) crew at 11:51 including two MICA paramedics (**MICA 1** and **MICA 2**). On arrival, Gayle was noted to be unconscious, with low blood pressure, a high heart rate and high blood sugar. Paramedics commenced emergency treatment of Gayle.

9. At 12.11pm, MICA 1 administered Gayle with metaraminol, a medication which is used in emergency settings to increase blood pressure. The intention was to administer metaraminol 500mcgs IO, however a dose of 5mgs (5000mcgs) was inadvertently administered, ten times the prescribed dose.[3]

10. The paramedic attending to Gayle was on his own at this time. Other attending paramedics, including MICA 2, were in an adjacent room talking with family.

11. At 12.13pm, Gayle went into pulseless electrical activity (**PEA**) cardiac arrest and cardiopulmonary resuscitation (**CPR**) was commenced, with endotracheal intubation undertaken and adrenaline administered.

12. Return of spontaneous circulation (**ROSC**) was achieved at 12:50; this was largely maintained *en route* to hospital.

13. At 1:23pm, Gayle experienced another brief loss of cardiac output with ROSC achieved at 1:28pm. She arrived at hospital Emergency Department (**ED**) with cardiac output at 1:43pm.

14. Whilst in the ED, clinicians were able to get Gayle's heart to start twice but she deteriorated again. CPR continued until 2:33pm until it was decided to stop due to prolonged down time.

[3] This information – namely, regarding the misadministration of metaraminol – was not known to the Court until a later juncture, namely after the discontinuation of the initial investigation on 30 December 2023, referred to further below.

15. Despite the best efforts of treating clinicians, Gayle was unable to be resuscitated and died at 2:47pm.

Identity of the deceased

16. On 19 October 2023, Gayle Patricia Carley, born 05 October 1946, was visually identified by her daughter Dee Ross.

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

Medical cause of death

18. Gayle's body came into the care of the coroner. Forensic Pathologist Dr Matthew Lynch (**Dr Lynch**) from the Victorian Institute of Forensic Medicine (**VIFM**) conducted an external examination and computed tomography scan of Gayle's body on 23 October 2023. Dr Lynch provided a written report of his findings dated 24 October 2023.

19. The post-mortem examination revealed metal in the lumbar spine, calcific coronary artery disease, cardiomegaly and right sided pulmonary consolidation. The CT scan revealed no intracranial haemorrhage.

20. The usual suite of toxicological analysis of post-mortem samples identified the presence of midazolam in keeping with therapeutic dosage. Midazolam was noted to be used by paramedics while treating Gayle.

21. Dr Lynch provided an opinion that the medical cause of death was *1(a) Ischaemic heart disease*. Dr Lynch considered Gayle's death to be of natural causes.

Preliminary determination to discontinue investigation

22. As the death was determined to be of natural causes, I ordered that the investigation be discontinued pursuant to section 17 of the Act.

23. The investigation was discontinued on 30 December 2023.

FAMILY CONCERNS

24. On 14 April 2024, the court received an application to set aside the determination to discontinue the investigation into Gayle's death. The application was made by Gayle's son Craig Carley (**Craig**). In Craig's application, he noted that on 27 December 2023, he had been

provided with a Statutory Duty of Candour (**SDC**) Report authored by AV. The report outlined the incorrect dosage of metaraminol and detailed the circumstances as to how this occurred – facts that were not known to the Court previously.

25. Craig provided the Court with his concerns of care in relation to Ambulance Victoria. The concerns raised included a question on what contribution the inadvertent administration of a higher than intended dose of metaraminol was to Gayle's death and further queried whether there was adequate training provided by Ambulance Victoria to prevent further occurrences in the future.

FURTHER INVESTIGATION

26. In response to Craig's concerns and following receipt of the new information, I referred the matter back to the Dr Lynch, the forensic pathologist, for further advice. Specifically, I sought information on whether metaraminol is routinely detected upon post-mortem toxicological testing, whether it could be tested for in Gayle's case, and, if applicable at that point, an opinion on whether the medication could have contributed to Gayle's death.

27. In August 2024, Dr Lynch noted that routine full toxicology at the VIFM does <u>not</u> include a test for metaraminol, but it was likely that it would be possible for the toxicology team to develop a method of testing for the drug on retained samples. However, this would take several months. I requested that post-mortem blood samples be tested.

28. On 13 December 2024, an amended toxicology report was issued that confirmed the presence of metaraminol at 0.09 mg/L.

29. On 30 January 2025, Dr Lynch provided a supplementary report. He commented that it is *possible* that the administration of metaraminol contributed to an ischaemic cardiac event and contributed to Gayle's death. However, he was of the ultimate opinion that the potential contribution of metaraminol to Gayle's death was no higher than *possible*.

30. As a result of the new information available to me, on 4 February 2025, I formally reopened the investigation into Gayle's death pursuant to section 77 of the *Coroners Act 2008* (Vic).

31. I sought a further statement and information from AV including copies of any reviews conducted following Gayle's death.

32. I received a statement from AV dated 7 October 2025. The statement outlined that:

a) The error in dosage of metaraminol was self-reported by the paramedic involved. The paramedic proactively and extensively reflected on the case. His reflection was that he should have checked the dosage with another paramedic but that he considered Gayle to be acutely unwell and in peri-arrest, requiring urgent treatment.

b) Metaraminol was introduced to MICA paramedic practice in 2022. Paramedics were trained on the procedure and appropriate use via e-learning modules, self-directed learning and via a workshop. The paramedic who administered the metaraminol had not subsequently reviewed a clinical practice guideline which was introduced to him on a continuing education day. As a result of the incident AV is considering implementing additional opportunities for information to be absorbed following the continuing education days.

c) AV considered the possibility of using a version of metaraminol that did not require dilution but determined that to do so it would rely on a sole supplier who may not be able to adequately supply the AV fleet and it would come at significant cost, lead to more wastage and take up precious physical space.

d) In December 2022, the pouches that store medication were updated to have 'panels', The panel for the metaraminol included the word 'dilute' which was designed to prompt dilution of the medication. AV was considering the making the word 'dilute' bigger and more prominent on the panel.

33. AV has conducted interviews and self-reflection with the paramedics involved in Gayle's care and reviewed:

a) The knowledge and practical understanding of medication by those who were involved in Gayle's care;

b) The procedures used when checking medication prior to administration;

c) The training related to metaraminol provided to paramedics who cared for Gayle.

34. An in-depth case review also identified:

a) MICA 1 correctly identified the dosage required but administered the higher dose as he incorrectly believed the vial dosage to be 1mg/1ml rather than 10mg/1ml. He recalled thinking that the dosage of metaraminol vial was 1mg/1ml as that is how it had been prior to the changes to policy in 2022. He reflected that he felt time pressure

owing to Gayle's condition and conceded he should have had the dosage cross-checked by another paramedic prior to administration.

b) MICA 1 felt that the continuing education day where paramedics were educated about the introduction of the new guideline in using metaraminol was delivered quickly but acknowledged that he should have sought to improve his knowledge by reviewing the guideline after the training.

c) MICA 1 self-reported the misadministration of the metaraminol, and AV considered that he has shown a high level of self-learning. MICA 1 has reviewed the relevant guidelines and sought feedback from peers.

CPU REVIEW

35. Following the receipt of Dr Lynch's report and the information from AV, I sought to refer the matter to the Health and Medical Investigation Team at the Coroners Prevention Unit (**CPU**)[4] in order to further assist me in determining the extent to which the metaraminol may have contributed to Gayle's death, as well as the adequacy of the AV review conducted after the event, including as to the family concerns provided to the Court (e.g. as to the adequacy of AV training).

36. The CPU explained that the usual dose of metaraminol is 0.5 - 1.0mg per dose but the administration is usually repeated frequently – often multiple times – until it provides the desired effect or as needed. For example, it would not be uncommon to administer it in 0.5mg or 1.0mg doses via boluses every minute or two. It is also a medication that can be administered via infusion at much higher rates.

37. The CPU noted that the medication is used in the context of a cardiac arrest to increase blood pressure and therefore it theoretically could cause heart failure or bradycardia due to an increase in afterload.

38. The CPU, however, considered Gayle's medical records and observed that while Gayle was given a higher than intended dose of metaraminol, the records demonstrate that it did not have the intended physiological effect on her (let alone the effect of an excessively large dose) as

[4] 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.

she continued to exhibit, *inter alia*, low blood pressure. The CPU further noted that Gayle had a significant life-threatening condition at the point the metaraminol was administered and the CPU was not of the view that the drug was a significant factor in Gayle's outcome, if at all.

39. The CPU also examined the family concerns of care relating to AV's training and considered the documents provided by AV.

40. The CPU noted that AV has been open and frank about the issue and committed to ongoing improvement for prevention.

41. The CPU was of the opinion that the identified improvements to training and education as a result of Gayle's death constituted a positive and appropriate course of action on the part of AV.

42. The CPU also endorsed the AV recommendation to label the medication with a larger 'dilute' sticker, as a reminder to paramedics facing high cognitive loads, and opined that it was reasonable for the AV choice to preference the current, space-efficient approach to metaraminol rather than recommending use of the pre-diluted version of the drug.

43. I accept the CPU's opinion.

FINDINGS AND CONCLUSION

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

    a) the identity of the deceased was Gayle Patricia Carley, born 05 October 1946;

    b) the death occurred on 19 October 2023 at Bairnsdale Regional Health Service/Hospital 122 Day Street Bairnsdale Victoria 3875, from *1(a) Ischaemic heart disease*.

    c) the death occurred in the circumstances described above.

45. Having considered all of the circumstances, I am satisfied that Gayle Carley died of ischaemic heart disease following an unwitnessed collapse in her home. While it was identified that an incorrect administration of metaraminol occurred immediately prior to her death, and that paramedic who administered it had failed to cross-check the dosage with his colleague, the evidence does not support that this error caused or had any palpable contribution to Gayle's death in the face of her already life-threatening condition.

46. I find that the response by Ambulance Victoria following the incident has been appropriate and that reasonable investigation and recommendations have been made to prevent further instances of administering above the intended dosage.

47. I have been unable to identify any further opportunity for prevention.

I offer my sincere condolences to all who loved and cared for Gayle and acknowledge the distress of her family at the need for a re-opened investigation into her death.

ORDERS AND DIRECTIONS

I order that a copy of this finding is published in accordance with the Rules.

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

Senior Next of Kin

Craig Carley

Ambulance Victoria c/o Lander and Rogers

Bairnsdale Regional Health Service

Constable Lauren Clarke, Coronial Investigator.

Signature:

Coroner Ingrid Giles

Date: 20 August 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.