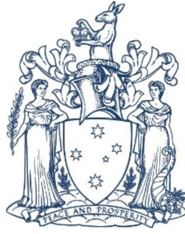

IN THE CORONERS COURT
OF VICTORIA
AT MELBOURNE

Court Reference: COR 2019 5322

FINDING INTO DEATH WITHOUT INQUEST

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

Findings of:	Katherine Lorenz, Coroner
Deceased:	Christian Joy
Date of birth:	26 October 1984
Date of death:	30 September 2019
Cause of death:	1(a) Cardiac Tamponade; and 1(b) Hemopericardium due to dissection of the ascending aorta
Place of death:	5816/70 Southbank Boulevard, Southbank, Victoria

INTRODUCTION

1. On 30 September 2019, Christian Joy was 34 years old when he died at his home after complaining of chest pain. At the time of his death, he was living at Southbank with his partner, Belinda Caldwell (**Belinda**).

2. Mr Joy had no significant past medical history but was obese. He was not on regular medication and did not smoke. According to Belinda he was attending the gym and was getting fitter. Earlier in 2019 he had successfully lost 20 kilograms.

THE CORONIAL INVESTIGATION

3. Mr Joy'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. The Victoria Police assigned an officer to be the Coroner's Investigator for the investigation of Mr Joy'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.

7. Coroner Jamieson had carriage of this investigation until April 2021 when it was transferred to me. I reviewed all the material obtained during Coroner Jamieson's investigation and completed this finding based on those materials.

8. This finding draws on the totality of the coronial investigation into the death of Christian Joy, 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

Circumstances in which the death occurred

9. At approximately 8.30 PM on 29 September 2019, whilst sitting on a couch at home, Mr Joy suddenly developed central chest pain. When it did not resolve Belinda called an ambulance. The ambulance arrived at approximately 10.00 PM. The paramedics noted that the pain was sharp, in the central chest, but did not radiate. Initial observations were normal except for an elevated blood pressure of 180/95. Mr Joy reported a pain severity of 7/10. He received a total of 10 mg of morphine intravenously and his pain score was 5/10 when he reached hospital.

10. Mr Joy was taken by the ambulance to the Emergency Department (**ED**) at St Vincent's Hospital where he was triaged as category 2[2] at 10:52 PM. The triage notes record the sudden onset of central chest pain and normal observations.

11. Mr Joy was seen by an ED doctor (**Dr Liang**) at approximately 11:15 PM. The history of sudden onset central chest pain with no radiation was again noted and was recorded to be coming and going in waves every few seconds. There was no associated dizziness, shortness of breath or vomiting and a Wells Score[3] was noted to be zero.

12. Blood tests, ECG and a chest x-ray were performed, and Mr Joy was given medication – a PPI[4] and a 'pink lady'[5] to treat his symptoms. It was noted in the medical record that the medication relieved his pain 'briefly'.

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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] Australian hospitals utilize a 5 level triage scoring system where 1 is most urgent and 5 least urgent. A triage category of 2 means that a patient should receive some treatment within 10 minutes.

[3] The Wells score for pulmonary embolism is a risk stratification score and clinical decision rule to estimate the probability for acute pulmonary embolism (PE) in patients in which history and examination suggests acute PE is a diagnostic possibility.

[4] PPI = proton pump inhibitor. These are a group of drugs that reduce acid production in the stomach and treat symptoms of GORD.

[5] A 'pink-lady' is a term that refers to a mixture of antacid medication (Mylanta) and local anaesthetic (lignocaine) gel used to treat symptoms of GORD.

13. Test results demonstrated a mildly elevated white blood cell count that was thought to be pain related, a negative troponin[6], and a chest x-ray that was thought by Dr Liang to demonstrate increased pulmonary vascular markings.

14. The original plan after this work-up was to discharge Mr Joy with a PPI and analgesia, and for GP review. According to the medical records, he was advised to re-present to the hospital if the pain got worse or if there was ongoing concern. Just prior to leaving the hospital Mr Joy vomited, which was thought to be related to the administration of morphine by ambulance paramedics without an antiemetic. Mr Joy was admitted to the short stay unit. His observations remained normal overnight and his pain score was recorded as '0' for the last 4 hours of his stay.

15. He was discharged at approximately 5.50 AM on 30 September 2019 with a diagnosis gastro-oesophageal reflux disease (**GORD**) and caught an Uber home.

16. According to Belinda, upon returning home, Mr Joy was not in as much pain as he had been the previous evening, but he was still "uncomfortable". At around midday, he was still not feeling well so he went to see Dr Martin Fox at Southgate Medical Centre. Afterwards, Mr Joy told Belinda that Dr Fox had thought he had gastritis and gave him a script. Mr Joy went to a pharmacist to have the script filled and bought some Gaviscon. After he returned home, he was feeling worse, so he called Dr Fox's surgery and told Belinda he'd been advised by Dr Fox's surgery to return to hospital.

17. Mr Joy returned to the St Vincent's Hospital ED at approximately 2.00 PM. After a brief discussion with a staff member at the triage counter, Mr Joy left the ED and returned home. There is no record of this re-attendance or advice in the St Vincent's medical record.

18. After returning home, Mr Joy continued to complain of bad pain. He took some Panadeine Forte but it did not relieve the pain. Belinda called the 'nurse on call' who advised her to go to a hospital. Belinda told the nurse that "*we've done that and they didn't do anything*." Belinda then telephoned a clinic in St Kilda and at approximately 6:15 PM they prepared to leave the apartment to go to the appointment.

[6] Troponin is a substance released into the blood by damaged heart muscle. It is a marker of heart muscle injury.

19. Mr Joy was inside his apartment when Belinda heard a thud and a wailing sound. Belinda found Mr Joy face down on the bed, struggling to breathe. She called an ambulance and commenced cardiac pulmonary resuscitation. Paramedics arrived at 6.21 pm but Mr Joy was deceased.

Identity of the deceased

20. On 30 September 2019, Christian Joy, born 26 October 1984, was visually identified by his partner, Belinda Caldwell.

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

Medical cause of death

22. Forensic Pathologist Dr Yeliena Baber from the Victorian Institute of Forensic Medicine (**VIFM**), conducted an external examination and CT scan and provided a written report of her findings dated 3 October 2019.

23. Examination of the post-mortem scan showed a large haemopericardium with a dissection of the ascending aorta. There was no calcification of aorta and only minor calcification of the coronary arteries.

24. Dr Baber provided an opinion that the medical cause of death was:

    1 (a) Cardiac Tamponade

    1 (b) Haemopericardium due to dissection of the ascending aorta.

25. I accept Dr Baber's opinion.

FURTHER INVESTIGATIONS

26. At the request of Coroner Jamieson, the Court's Health and Medical Investigation Team (**HMIT**), a part of CPU[7], conducted a review Mr Joy's care at St Vincent's Hospital. The HMIT reviewed Mr Joy's medical records and recommended that Coroner Jamieson seek a statement

[7] 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.

from Dr Dr Andrew Walby, the Director of Emergency Medicine at St Vincent's Hospital in relation to the medical care provide to Mr Joy.

27. Dr Walby provided a statement to the court dated 13 May 2020 based on a review of Mr Joy's electronic medical record as he had not met Mr Joy and had not been involved in his treatment. The statement sets out the examination and treatment given to Mr Joy during his visit to the ED on 29 September 2019. Relevantly, just after midnight, Dr Liang ordered a routine chest x-ray for the purpose of investigating the cause of the central chest pain. The x-ray was taken in the ED and the image was viewed by Dr Liang shortly thereafter. The image showed a widened mediastinum, which was not noted by Dr Liang. According to Dr Walby's statement, Dr Liang documented in the medical record that she had considered differential diagnoses of gastro oesophageal reflux or gastritis. The reporting radiology registrar did not consider that the findings might represent acute aortic dissection. Dr Walby commented that mediastinum changes can be explained by a number of clinical conditions and aortic dissection had not been clinically considered on the chest x-ray request slip.

28. Dr Liang had documented in the medical record that Mr Joy's pain had resolved following the administration of pantoprazole and the "pink lady", supporting the diagnosis of GORD. The troponin level was negative. On this basis, Dr Liang wrote the discharge plan for Mr Joy with GP follow up in a few days.

29. At the time of discharge at 5.50 AM on 30 September 2019, the full chest x-ray report was not available, but it was uploaded to the hospital's computer system shortly afterwards, at 5.57 AM.

30. Relevantly, the report states:

"Prominent appearing vascular structure at the right mediastinum, may represent aortic root dilation. Consider echo or CT angiogram for further assessment. No fluid overload. No cardiomegaly. No consolidation. No pneumothorax."

31. Unfortunately, the reporting radiology registrar did not telephone the ED to discuss the imaging report or the advice to consider the further echo or CT angiogram tests and clinical staff in the ED did not review the chest x-ray until after Mr Joy's death.

32. Dr Walby noted in his statement that the radiology registrar did not specifically consider that the findings might represent an acute aortic dissection.

33. The advice received from HMIT is that whilst the radiology registrar did not specifically consider acute aortic dissection, there is a clear indication that he or she was suspicious of aortic pathology. It is not known what was written on the x-ray request, but the history of sudden onset significant chest pain makes the x-ray findings very relevant. Aortic root dilatation would not be a very common x-ray finding in a previously well 34 year old.

34. Further, at the time of Mr Joy's admission, the practice at St Vincent's Hospital ED was for an ED consultant to review radiological reports. Dr Walby conceded that timely reviews of printed radiology reports by an ED consultant was ad hoc and relied on workload factors including the availability of an ED consultant.

35. In relation to Mr Joy's second visit to the ED on the afternoon of 30 September 2019, there is some apparent inconsistency between the account given by Mr Joy to Belinda and the medical record. According to Belinda, she dropped Mr Joy at the door of the ED at approximately 2.00 PM, parked the car and walked back to the ED. When she arrived at the ED, Mr Joy was talking to someone at the triage counter. He finished speaking to the triage staff member just as Belinda entered. He walked over to Belinda and told her that he had been told by triage staff that it was going to be a really long wait, "*that there was nothing further they would be able to do and that it was busy and that it would be a really long wait*", so he decided to leave.

36. According to Dr Walby's statement (presumably based on his discussions with ED staff, although this is not explicit), Mr Joy attended at the ED at approximately 2.00 pm stating that he had been in the ED that morning and was still "*not feeling right*", but chose not to wait to be reviewed and left the ED. Dr Walby explained that patients presenting to triage are normally asked to describe their presenting complaint prior to the triage staff obtaining identification from them. A quick assessment of a patient is prioritised to determine clinical urgency and triage category then a formal registration process is undertaken. Unfortunately, Mr Joy left the ED prior to his identification details being given.

37. Mr Joy's re-attendance was an opportunity to perform the 'quick assessment and determination of clinical urgency and triage category'. Doctor Walby further explained that any patient who represents to the ED, particularly within a short time frame, will normally undergo a full re-triage. It is standard procedure for any patient who represents to the ED to be seen by a more senior doctor than the one who initially assessed the patient, in this case, ideally a Consultant Emergency Physician.

38. In Mr Joy's case, the opportunity for a full re-triage medical reassessment was missed. No triage notes were made of his re-attendance at the ED, but on the available evidence, it is highly likely the "quick assessment" occurred because Dr Walby was able to say that Mr Joy was still "not feeling right" but that his symptoms had abated and he did not need to wait to see an ED clinician. This is consistent with the report Mr Joy gave to Belinda. Further, it is unlikely that a triage nurse would have referred a patient with undiagnosed chest pain to a GP from ED triage unless the nurse had known about Mr Joy's earlier diagnosis of GORD.

39. It is unfortunate that Mr Joy left the ED before triage and a medical review. Had he stayed, his chest x-ray results showing the 'widened mediastinum' may have been seen and potentially, alternative diagnoses may have been considered and treatment commenced.

40. According to Dr Walby, on the evening of 31 September 2019, a paramedic informed an ED consultant that Ambulance Victoria had been called again to Mr Joy's home on the evening of 30 September 2019 and that Mr Joy was now dead. The ED department conducted a retrospective review of the chest x-ray performed in the ED on 29 September 2019 which showed the widened mediastinum. St Vincent's Hospital was later informed by the Coroner's Court that the post-mortem examination had shown evidence of hemopericardium due to acute aortic dissection. Based on this information, Mr Joy's clinical presentation and his chest x-ray, St Vincent's Hospital ED realised that the diagnosis of acute aortic dissection had been missed during Mr Joy's admission to the ED.

41. According to Dr Walby's statement, on 15 October 2019, St Vincent's Hospital reported Mr Joy's death to Safer Care Victoria as a sentinel event under category 11, being "*all other adverse patient safety events resulting in serious harm or death*".

42. A root cause analysis (**RCA**) had been performed and the following issues were identified:

    I. There was no system to alert doctors that a typed (i.e. completed) radiology report is available;

    II. Review of formal radiology reports by ED consultants was subject to delays and may be unable to be traced or confirmed; and

    III. Verbal reporting of significant radiology findings was not fail proof, with potential for variation between clinicians.

43. As a result of the RCA, three recommendations for improvement were initiated:

I. Explore and implement an IT system that supports tracking of radiology requests and reports;

II. Develop and implement a process and delegate a clinician responsible for the review of printed radiology reports received in the ED from the overnight shift (from 1200 hours to 0800 hours); and

III. Medical Imaging department to review the case and learning as a department and to reinforce the policy for telephoning results to the referrer.

44. At the time of Dr Walby's statement, the recommendations were in the process of being implemented but were delayed due to competing priorities with COVID-19 pandemic planning.

45. There is no reference to the missed opportunity for re-triage at Mr Joy's second attendance at the ED in Dr Walby's summary of the RCA.

FINDINGS

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

(a) the identity of the deceased was Christian Joy, born 26 October 1984;

(b) the death occurred on 30 September 2019 at 5816/70 Southbank Boulevard, Southbank, Victoria from:

1(a) Cardiac Tamponade; and
1(b) Haemopericardium due to dissection of the ascending aorta, and

(c) the death occurred in the circumstances described above.

COMMENTS

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

(a) The standard of proof for coronial findings of fact is the civil standard of proof on the balance of probabilities, in accordance with the *Briginshaw* principles.[8] Adverse findings

[8] *Briginshaw v Briginshaw (1938) 60 C.L.R. 336 esp at 362-363. "The seriousness of an allegation made, the inherent unlikelihood of an occurrence of a given description, or the gravity of the consequences flowing from a particular finding, are considerations which must affect the answer to the question whether the issues had been proved to the reasonable satisfaction of the tribunal. In such matters "reasonable satisfaction" should not be produced by inexact proofs, indefinite testimony, or indirect inferences…"*

or comments against individuals in their professional capacity, or against institutions, are not to be made with the benefit of hindsight but only on the basis of what was known or should reasonably have been known or done at the time, and only where the evidence supports a finding that they departed materially from the standards of their profession and, in so doing, caused or contributed to the death under investigation.

(b) With this in mind, I find there were two missed opportunities which may have prevented Mr Joy's death relating to the missed diagnosis of aortic dissection. The sudden onset of chest pain was a concerning feature of Mr Joy's presentations, although he would not be considered to have been a patient typically at risk of aortic dissection[9]. Nevertheless, the pain settled only briefly, and recurred in the context of treatment given for the diagnosis of GORD. Mr Joy returned to the hospital as advised by the doctor who discharged him but did not have an opportunity to have his diagnosis reassessed, even when an abnormal chest x-ray had been reported since his previous attendance.

(c) It is possible, that if he had been reassessed on the afternoon of 30 September 2019 when he had returned to the ED, staff would have reviewed his x-ray and report and considered the diagnosis of aortic pathology.

(d) St Vincent's Hospital has the benefit of 'overnight' reporting of plain radiology by a radiology registrar. It is therefore unfortunate that the opinion of the radiology registrar was not passed on to the ED staff verbally in real time, as the reported findings were very relevant to Mr Joy's presenting symptoms, particularly if the x-ray request indicated that he had sudden onset of chest pain. Early review of this result by the ordering doctor may have resulted in reconsideration of the diagnosis and a recall of Mr Joy back to the ED.

(e) Mr Joy re-presented to the hospital as he was advised to do but was either advised to see a GP or elected to leave without medical review. There is a discrepancy between the account given by Belinda (albeit told to her by Mr Joy) and Dr Walby's explanation. It is highly probable that if he had been reassessed or had his x-ray report reviewed at this time, he would have been further investigated for his recurrent pain.

(f) In relation to Mr Joy's second visit to the ED and his decision to leave without a medical consultation, the discrepancy between the accounts given to Belinda by Mr Joy and the information set out in Mr Walby's cannot be reconciled. I am not able to determine whether Mr Joy was actively discouraged from waiting to be seen or whether he just felt

[9] Risk factors include hypertension, smoking, atherosclerosis and certain genetic diseases.

discouraged from the staying and waiting to be seen. In any event, the decision for him to leave was unfortunate and was the most critical of the missed opportunities for preventing Mr Joy's death.

(g) Finally, in his statement Dr Walby stated that St Vincent's Hospital has not met with Mr Joy's family since his death and open disclosure has not taken place. Open communication between the hospital and family after an adverse event is a legal and ethical obligation which requires an open and honest explanation of the adverse events which led to Mr Joy's death and an apology or expression of regret for the harm that resulted.[10]

RECOMMENDATIONS PURSUANT TO SECTION 72(2) OF THE ACT

48. I recommend that St Vincent's Hospital:

(a) Expedites the implementation of the three major recommendations of the RCA.

(b) Implements a change in imaging reporting so that the indication or clinical notes on an imaging request are included on the formal report so that the reviewing doctor (who may not be the requesting doctor) can correlate the relevance of the request to the findings in the report.

(c) Review their triage processes regarding patients with recurrent symptoms or concerns returning to the ED on the advice of ED clinicians following a recent admission, particularly with significant symptoms such as chest pain. Such a recommendation could include that a doctor review the patient's previous notes and results and speak to the patient prior to the patient leaving.

(d) Undertakes open disclosure with Mr Joy's family in accordance with the Australian Open Disclosure Framework.

Pursuant to section 73(1) of the Coroners Act 2008, I order that this finding is published on the Internet.

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

Belinda Caldwell, Senior Next of Kin

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[10] See The Australian Open Disclosure Framework, Australian Commission on Safety and Quality in Health Care, 2013, https://www.safetyandquality.gov.au/sites/default/files/migrated/Australian-Open-Disclosure-Framework-Feb-2014.pdf

Donna Filippich, St Vincent's Health

Safer Care Victoria

Constable Aaron Birrell, Coroner's Investigator

Signature:

KATHERINE LORENZ

CORONER

Date: 22 July 2021

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.