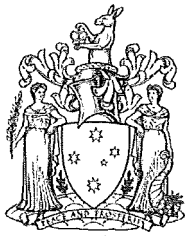

IN THE CORONERS COURT
OF VICTORIA
AT MELBOURNE

Court Reference: COR 2016 6007

FINDING INTO DEATH WITHOUT INQUEST

(following a determination under section 77 of the Coroners Act 2008)

Form 38 Rule 60(2)
Section 67 of the Coroners Act 2008

Findings of:	Sarah Gebert, Coroner
Deceased:	Ian DUNLOP
Date of birth:	5 April 1942
Date of death:	19 December 2016
Cause of death:	Pericarditis post aortic valve surgery
Place of death:	Donvale Rehabilitation Hospital, 1119 Doncaster Road, Donvale Victoria 3111

INTRODUCTION

1. Ian Dunlop was a 74-year-old man who lived with his wife, Clare Dunlop, at 27 Gregg Street, Diamond Creek at the time of his death.

2. Mr Dunlop died at Donvale Rehabilitation Hospital (**Donvale**)[1] on 19 December 2016. He died following an aortic valve replacement at Warringal Private Hospital (**Warringal**) on 5 December 2016.

THE PURPOSE OF A CORONIAL INVESTIGATION

3. Mr Dunlop's death was reported to the Coroner as it appeared unexpected or unnatural or to have resulted, directly or indirectly, from an accident and so fell within the definition of a reportable death in the *Coroners Act 2008* (**the Act**).

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. Having considered the evidence obtained during the coronial investigation, Coroner Simon McGregor made findings dated 27 March 2020. Subsequent to those findings being made an application was brought by Associate Professor George Matalanis (**A/Prof Matalanis**) and Dr Rosanna Hage-Ali (**Dr Hage-Ali**) pursuant to section 77(1) of the Act to re-open the investigation and/or set aside findings. Following consideration of the application, I ordered pursuant to section 77(2)(b) of the Act that certain findings be set aside and the investigation re-opened only to the extent required to make findings relevant to those matters which had been set aside.[2]

7. For clarity, where findings were not set aside as part of my determination, I have adopted

[1] Donvale Rehabilitation Hospital is a 90-bed facility providing inpatient, day patient and outpatient rehabilitation services.
[2] Determination dated 17 September 2021, published on the Coroners Court website.

those findings made by Coroner McGregor as set out in this finding.[3]

BACKGROUND

8. Mr Dunlop was a retired nurse educator who, prior to retirement was employed by the Department of Health and Human Services. Mrs Dunlop describes her husband as having been a fit and healthy man who did a lot of physical activity and ate a mainly vegetarian diet.[4]

9. Mr Dunlop suffered from several health issues, including obstructive sleep apnoea (**OSA**) requiring a CPAP machine[5], rheumatoid arthritis, hypothyroidism[6], hypertension[7], atrial fibrillation on apixaban[8], polymyalgia[9] and previous lumbar spine surgery.

10. On 5 December 2016, Mr Dunlop underwent aortic valve replacement surgery at Warringal to correct his severe aortic stenosis.[10] The surgery was performed by A/Prof Matalanis. The operation was uneventful and Mr Dunlop had a routine post- operative recovery in the Intensive Care Unit (**ICU**) and then subsequently in the cardiac ward.[11]

11. Prior to his discharge, on 12 December 2016 Mr Dunlop underwent an echocardiogram.[12] The pericardial effusion was first noted as an incidental finding. It was a small pericardial effusion and without evidence of cardiac compression. The echocardiogram was performed because Mr Dunlop had gone into atrial fibrillation and was requiring anticoagulation. Mr Dunlop was clinically well and with control of the atrial fibrillation, his haemodynamics were normal.[13]

12. Mr Dunlop was kept in hospital for an additional three to four days. Dr Smyth states that a repeat echocardiogram was performed. This showed that the effusion was unchanged, again with no sign of tamponade[14] and with normal cardiac function.[15] A/Prof Matalanis'

[3] Findings are made 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.
[4] Statement of Clare Dunlop dated 29 March 2017, Coronial Brief.
[5] Treatment for OSA involving a device which delivers continuous positive airway pressure.
[6] Underactive thyroid requiring thyroxine replacement medication.
[7] High blood pressure.
[8] Irregular heartbeat causing an increased risk of stroke. Mr Dunlop was placed on the anti-coagulant, apixaban, to prevent blood clotting.
[9] Pain and stiffness in muscles.
[10] Narrowing of the aortic valve, which is the main exit valve between the heart and the aorta. Statement of Dr Noel Smyth dated 4 May 2017, Coronial Brief.
[11] Statement of Associate Professor George Matalanis dated 14 March 2018, Coronial Brief.
[12] Ultrasound of the heart.
[13] Statement of Associate Professor George Matalanis dated 14 March 2018, Coronial Brief.
[14] Heart compression caused by accumulating fluid.

additional statement details that there was only the one post-operative echocardiogram, but nothing discrete turns on this. As Mr Dunlop had been well and was seemingly improving, A/Prof Matalanis and cardiologist, Dr Hage-Ali decided to delay the repeat echocardiogram for a week or two, pending clinical progress.[16]

13. On 15 December 2016, Mr Dunlop was transferred to Donvale for post-surgery rehabilitation. Patients at Donvale are under the care of two doctors. The first of these doctors is a rehabilitation specialist who overseas activities within their specialty and the second, a general practitioner who is responsible for the patient's general health.[17]

14. In the nursing notes from Donvale, Mr Dunlop was noted as feeling fatigued and complained of pain in his shoulders and breastbone[18], but was otherwise progressing satisfactorily. Dr Smyth states that the tiredness Mr Dunlop complained of was not out of proportion to the surgery.[19] On 16 December 2016, routine blood tests were organised.[20]

15. On 17 December 2016, Mr Dunlop told his family that he had pain in his right shoulder. He also appeared to be more breathless than he had been in previous days, and was concerned that he was unwell. Mrs Dunlop asked the nurses if Mr Dunlop was going to be reviewed by a doctor. The nurses informed Mrs Dunlop that a doctor would be in on 19 December 2016. She was told that the shoulder pain and breathlessness were normal post-surgery.[21]

16. On the evening of 18 December 2016, blood tests showed that Mr Dunlop was anaemic and he was subsequently commenced on iron supplements and medication for nausea.[22]

17. At approximately 8.00pm, Mr Dunlop was distressed and anxious, having just vomited. Nursing notes indicate that Mr Dunlop was reviewed and reassured. Mr Dunlop's observations were essentially unchanged from previous observations. His blood pressure had always been at the lower limit of normal (100/65 mmHg) and his pulse rate had been at the upper limit of normal (90- 100 beats per minute) for the previous two days.

18. At approximately 9.45pm, nursing notes recorded a raised pulse of 104 beats per minute, blood pressure of 92/60, respiratory rate of 22, temperature of 35.9°C and oxygen saturation

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[15] Statement of Associate Professor George Matalanis dated 22 March 2017, Coronial Brief.
[16] Statement of Associate Professor George Matalanis dated 14 March 2018, Coronial Brief.
[17] Statement of Dr Noel Smyth dated 4 May 2017, Coronial Brief.
[18] This pain would not be uncommon as the chest is opened for the surgery by sawing through the breastbone.
[19] Statement of Dr Noel Smyth dated 4 May 2017, Coronial Brief.
[20] Statement of Dr Noel Smyth dated 14 March 2018, Coronial Brief.
[21] Statement of Clare Dunlop dated 29 March 2017, Coronial Brief.
[22] Statement of Dr Noel Smyth dated 4 May 2017, Coronial Brief.

at 98%.[23]

19. Due to Mr Dunlop's symptoms[24] and concerns, he was reviewed by nursing staff on at least three occasions overnight. His observations were not considered by nursing staff to be in a range mandating clinical review.

CIRCUMSTANCES IN WHICH THE DEATH OCCURRED

20. Periodically throughout the early morning of 19 December 2016, Mr Dunlop had his observations taken by nursing staff. Mr Dunlop had reported various symptoms, including anxiety and difficulty breathing. As 19 December 2016 fell on a Monday, there was no doctor onsite until later in the morning. Observations were left to nursing staff until the duty doctor arrived.

21. At approximately 7.30am, Dr Smyth attended Mr Dunlop's room. He found Mr Dunlop warm to the touch, with no pulse and with fixed dilated pupils. Dr Smyth called "Code Blue" and commenced cardiopulmonary resuscitation (**CPR**). CPR was continued for approximately ten minutes with no restoration of cardiac activity.[25]

22. Dr Smyth pronounced life to be extinct at 7.40am.[26]

IDENTITY

23. On 19 December 2016, Alexander Dunlop visually identified the body of his father, Ian Dunlop, born 5 April 1942.

24. Identity is not in dispute andrequires no further investigation.

CAUSE OF DEATH

25. On 21 December 2016, Dr Paul Bedford a Forensic Pathologist practising at the Victorian Institute of Forensic Medicine, conducted an autopsy upon Mr Dunlop's body and reviewed a post mortem computed tomography (CT scan), medical deposition and the Police Report of Death for the Coroner.

26. Dr Bedford provided a written report dated 5 January 2017, in which he formulated the

[23] Ibid.
[24] Anxiety and shortness of breath.
[25] Statement of Dr Noel Smyth dated 4 May 2017 and First Constable Daniel Hopkins dated 12 April 2017, Coronial Brief.
[26] Statement of Dr Noel Smyth dated 4 May 2017, Coronial Brief.

cause of death as *'I(a) Pericarditis post aortic valve surgery*'.[27]

27. Dr Bedford commented that post mortem examination showed a florid pericarditis (inflammation of the lining of the sac around the heart) with a large bloody pericardial effusion leading to tamponade and death.

28. He further noted that no issues were identified relating to the technical aspects of the surgery to the aortic valve. Pericarditis is not uncommon post this type of surgery but Mr Dunlop's was an unusually large pericardial effusion.

29. I accept Dr Bedford's opinion as to cause of death.

REVIEW OF CARE

30. In considering the adequacy of care afforded to Mr Dunlop, the Coroners Court of Victoria, Coroner's Prevention Unit (**CPU**)[28] was directed to undertake a review of Mr Dunlop's medical procedure and rehabilitation. Specifically, the review included obtaining statements from relevant parties and a thorough evaluation of clinical notes and medical evidence.

Surgery at Warringal Private Hospital

31. An expert briefing from Associate Professor Justin Mariani (**A/Prof Mariani**), Consultant Cardiologist (VMO), Alfred Health was commissioned by the Court and a report dated 17 May 2022 was subsequently prepared.

32. The Court sought advice regarding whether A/Prof Matalanis and/or Dr Hage-Ali failed to properly investigate and/or inform Donvale about the possibility of Mr Dunlop having pericarditis. In addition, if a failure was identified, did it contribute to Mr Dunlop's death.

33. A/Prof Mariani considered that, given Mr Dunlop's history and presentation, there was no issue that surgical intervention was the appropriate course of action. In addition, that given his age and overall robustness, an open cardiac surgical intervention was entirely appropriate.

[27] Florid pericarditis (inflammation of the lining of the sac around the heart) was noted with large pericardial effusion (450ml of bloody fluid) leading to tamponade and death. No issues relating to the technical aspects of surgery to the aortic valve were noted.

[28] 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.

34. A review by A/Prof Mariani of the summary of the inpatient notes between 5 December 2016 and Mr Dunlop's transfer to Donvale on 15 December 2016 revealed that he had *a not unexpected* perioperative course in hospital. A/Prof Mariani said that findings of atrial fibrillation perioperatively, anaemia, bilateral pleural effusions, and mild changes in inflammatory markers and renal function are not unexpected in this group. He noted that no comment was made regarding ECG changes of pericarditis and this is a common finding after cardiac surgery. Further, no comment was made regarding a small pericardial effusion, and this is also a common finding after cardiac surgery. He noted that Mr Dunlop was accepted by Donvale, and the discharge date of day ten post cardiac surgery is *within the normal range.*

35. An echocardiogram was performed on 12 December 2016, 7 days post cardiac surgery. A/Prof Mariani said that this was probably a routine ECG, which is *reasonable practice*. The echocardiogram demonstrated normal left and right ventricular size and systolic function, mild biatrial enlargement, and normal function of the aortic valve bioprosthesis. He said that the significance of trivial aortic regurgitation (not paravalvular) compared to what was seen in the perioperative echocardiogram is *clinically insignificant*. Mr Dunlop had mild pulmonary hypertension although this was not described in the conclusions. Contributing to the mild pulmonary hypertension was elevated right atrial pressure. No comment was made about how the right atrial pressure was estimated at such a high level, but A/Prof Mariani said that this was typically based on estimate of inferior vena cava size and respirophasic variation. Imaging was described as difficult (Technical quality: Difficult) and A/Prof Mariani suggested that it was difficult to assess right atrial pressure.

36. A/Prof Mariani said it is important to note that the majority of patients who have cardiac surgery have weight gain related to fluid in the immediate perioperative phase that takes up to a week or so to return to baseline. The comment by Dr Kearney on 11 December 2016 was that Mr Dunlop's venous pressures were still elevated although he had returned to his preoperative weight.

37. A/Prof Mariani noted that Dr Hage-Ali made her determination on 12 December 2016 to recommence oral anticoagulation based on the interim echo report. Again no comment was made regarding a pericardial effusion, and she documented this (medical notation noted). The instruction to commence anticoagulation was from Dr Kearney, Dr Hage-Ali presumably covering, and given the past history of atrial fibrillation, including in the perioperative phase, commencement of oral anticoagulation was *entirely appropriate*. Mr Dunlop had already been on heparin and aspirin prior to converting to formaloral

anticoagulation (with heparin and aspirin subsequently being ceased). The finalised report from the following day reports a small pericardial effusion. No comment was made regarding features of tamponade. He noted that the presence of elevated right atrial pressure could be a marker and that Mr Dunlop was in sinus rhythm at the time.

38. A/Prof Mariani said that a series of ECGs[29] were provided to him for review but unfortunately most were not dated (apart from the admission ECG to Donvale on 15 December 2016 at 5.00pm). A/Prof Mariani said that most of the undated ECGs demonstrated that they were routine ECGs. He noted that each of them reflected a similar QRS pattern, usually with sinus rhythm although one is in atrial fibrillation. A/Prof Mariani said that these features are probably indicative of post-pericardiotomy syndrome, which occurs in 20-30% of patients after heart surgery. Features include chest pain, low-grade fever, which Mr Dunlop did not seem to have, elevated inflammatory markers which others had commented on, and the presence of both pleural effusion on chest x-ray (as per 11 December 2016) and pericardial effusion on ECG (12 December 2016).

39. He noted that the ECG that showed sinus rhythm with a resting heart rate of 87 and an annotation of "QT 400-440 ms" signed by Dr Kearney is presumably the ECG from 12 December 2016. He noted that this ECG does not have classical features of pericarditis. Appropriately, the cardiologist recommended that the amiodarone dose be reduced, as this is recognises a cause of QT prolongation, and there was a recommendation for assessment of electrolytes including calcium and magnesium, with a recommendation for repeat blood tests the following day (day of transfer).

40. In summary, A/Prof Mariani considered that the perioperative course at Warringal was reasonable and Mr Dunlop was transferred to Donvale in a reasonable clinical situation.

41. He said that the presence of a small pericardial effusion in the weeks after cardiac surgery is not uncommon and commencement of anticoagulation for atrial fibrillation after cardiac surgery is expected, and usually not delayed because of a small pericardial effusion.

42. A/Prof Mariani considered there was no evidence that A/Prof Matalanis or Dr Hage-Ali (or for that matter Dr Kearney who Dr Hage-Ali was covering) failed to investigate pericarditis. He noted that Mr Dunlop had an echocardiogram on day 7 post surgery, and this demonstrated a small pericardial effusion. There was no evidence that Mr Dunlop was complaining of symptoms typical of pericarditis.

[29] Electrocardiography.

43. A/Prof Mariani noted that there is some suggestion of a pericarditis pattern on some of the ECGs, but not of a significant effusion (on the echocardiogram). The final ECG from Warringal dated 14 December 2016 could suggest pericarditis.

44. As such A/Prof Mariani considered that A/Prof Matalanis or Dr Hage-Ali did not fail to investigate pericarditis properly. He noted that there will be conjecture as to the significance of a small pericardial effusion but that this is a very common finding after cardiac surgery. He said that there was no evidence that at the time of transfer that Mr Dunlop had a clinically significant version of pericarditis and he did not think it is unreasonable that a small pericardial effusion would not be handed over to the staff at Donvale. He stated that it would be implicit in the referral and handing over of a patient, and the acceptance of such a patient, that any clinical deterioration be reported back to the surgical team.

45. I accept A/Prof Mariani advice on these matters.

Assessments performed on Mr Dunlop at Donvale Rehabilitation Hospital from 15 through to 19 December 2016

46. An expert briefing from Dr David Eddey, Staff Specialist in Emergency Medicine at The Geelong Hospital and Consultant Physician, CPU, Coroners Court of Victoria, was commissioned by the Court to consider Mr Dunlop's care and management at Donvale.

47. Dr Smyth states that Mr Dunlop had formal assessments prior to commencing rehabilitation on 16 December 2016. During these assessments he complained of tiredness. Dr Smyth did not consider this to be disproportionate to his recent surgery. On 16 December 2016, Dr Smyth organised for routine blood tests.[30]

48. On 18 December 2016, results from the blood tests showed that Mr Dunlop was anaemic with a haemoglobin level of 84g/L. The normal range for haemoglobin should be >115g/L. he was subsequently placed on iron supplements. Mr Dunlop was also complaining of nausea and was prescribed Maxolon.

49. At approximately 9.45pm, nursing notes recorded a raised pulse of 104 beats per minute,

    blood pressure of 92/60, respiratory rate of 22, temperature of 35.9°C and oxygen saturation at 98%.[31]

50. On 19 December 2016 at approximately 1.10am, Mr Dunlop complained to nursing

[30] Statement of Dr Noel Smyth dated 14 March 2018, Coronial Brief.
[31] Ibid.

staff that he had shoulder pain. His oxygen levels had dropped to 83% on room air. He was given supplementary oxygen at a. rate of two litres per minute and the saturation improved to 96%.[32]

51. When Mr Dunlop was checked again at approximately 6.30am, his oxygen saturation was 99% on two litres of oxygen and his blood pressure was 99/55. Mr Dunlop is alleged to have told nursing staff that he had felt a lot worse over the previous few days and that the oxygen therapy overnight had helped. Mr Dunlop was last seen alive between 6.45am and 7.00am.[33]

Possible cause for Mr Dunlop's symptoms in the day prior to his death

52. Dr Smyth states that post operation, Mr Dunlop had a rapid atrial fibrillation needing amiodarone and Lasix converting back into sinus rhythm. He further states, Mr Dunlop's shortness of breath and anxiety were in keeping with post-operative surgery and that there was no obvious infection.[34]

53. In relation to the drop in Mr Dunlap's saturated oxygen levels, Dr Smyth initially suggested that the drop could have been due to Mr Dunlop's sleep apnoea and poor respiratory effort due to pain from surgery.[35]

54. Dr Eddey denies this is a possibility, stating that Mr Dunlop was awake and complaining of shortness of breath at 1.10am on 19 December 2016. He had summoned staff for assistance because he had a respiratory rate of 27 and low blood pressure. With sleep apnoea, a patient experiences respiratory obstruction and/or brief cessation of breathing while asleep. Oxygen levels quickly return towards normal once the patient is awake and breathing at a normal rate. This was not the case with Mr Dunlop and therefore, could not have been sleep apnoea related.[36]

55. In a subsequent statement to the Court, Dr Smyth recognises that the drop in oxygen saturation in Mr Dunlop was not likely caused by sleep apnoea. He further states that in retrospect, despite being two weeks post-surgery and still experiencing a reasonable degree of pain, this was not enough to cause a decreased oxygen saturation from poor respiratory effort.[37]

[32] Statement of Dr Noel Smyth dated 4 May 2017, Coronial Brief.
[33] Ibid.
[34] Expert Opinion Report by Dr David Eddey dated 28 November 2018, Coronial Brief.
[35] Ibid.
[36] Expert Opinion Report by Dr David Eddey dated 28 November 2018, Coronial Brief.
[37] Statement of Dr Noel Smyth dated 6 March 2019, Coronial Brief.

Opportunities to recognise Mr Dunlop's large pericardial effusion and subsequent tamponade

Donvale Rehabilitation Hospital

56. Dr Smyth states that he does not believe there was an opportunity to recognise Mr Dunlop's large pericardial effusion. He details that Mr Dunlop was started on Apixaban 5mg in Warringal for atrial fibrillation but only after the ECG had shown stable heart function. He notes that it was only a small pericardial effusion found and that it was not considered of significance.[38]

57. Dr Eddey states that he is of the opinion that, while there is only limited access to diagnostic resources in a rehabilitation facility, there was a missed opportunity to act upon deterioration in Mr Dunlop's condition at Donvale. Specifically, Dr Eddey considers there to have been opportunities for medical staff to observe and respond appropriately to changes in Mr Dunlop's condition.[39]

58. Mr Dunlop was having his observations recorded on a standard *Observation Response Chart*[40] (**ORC**), also known as a *Track and Trigger Chart.* ORC charts have been promoted by the Australian Commission on Safety and Quality in Healthcare and are standard practice in clinical areas. The purpose of the ORC is to track vital signs and if an observation falls within a shaded area, an appropriate action is initiated.[41]

59. In Dr Eddey's opinion, Mr Dunlop's deterioration, initially in blood pressure then subsequently in pulse rate and respiratory parameters, was not met by nursing staff with an appropriate escalation response. There were opportunities on several occasions. Medical notes from 1.10am record that Mr Dunlop complained of shortness of breath and that his oxygen saturations were 83% on air, with low blood pressure. In addition, the review by the nurse coordinator documented anxiety, low blood pressure, low oxygen saturations and shoulder pain. Furthermore, examination of the chest revealed reduced air entry at the right lung field. Despite this, the nurse co-ordinator did not make any judgement as to the cause or significance of Mr Dunlop's abnormal observations. The only intervention that occurred in response to these triggers was at

[38] Statement of Dr Noel Smyth dated 14 March 2018, Coronial Brief.
[39] Expert Opinion Report by Dr David Eddey dated 28 November 2018, Coronial Brief.
[40] The ORC does not diagnose the cause of the deterioration, nor does it prescribe treatment. It requires the patient to be assessed by an appropriate clinician in the event observations fall outside certain ranges.
[41] Expert Opinion Report by Dr David Eddey dated 28 November 2018, Coronial Brief.

2.00am on 18 December 2016.[42]

60. Dr Eddey states the Mr Dunlop's distress and anxiety during this period was most likely due to his body's response to falling blood pressure, falling cardiac output and falling oxygen levels.[43]

61. In a subsequent statement obtained from the Director. of Nursing at Donvale, Caroline Andrew, she details that since reading Dr Eddey's report, she recognises that the anxiety displayed by Mr Dunlop may have been directly related to his physical symptoms. She has since requested that the Donvale Medical Advisory Committee consider amending the observation chart to include in the 'looks unwell' the words 'displaying anxiety'. This will have the effect of highlighting the fact that a presentation of anxiety is a symptom of clinical deterioration.[44]

62. I am satisfied that an amendment to the observation chart, as detailed in paragraph [61] above, will lessen the likelihood of anxiety being overlooked as a legitimate symptom of a potentially greater problem.

63. I consider Dr Eddey's assessments of Donvale's care to have isolated to the requisite standard, several missed opportunities for identifying Mr Dunlop's large pericardial effusion and subsequent tamponade.

Arrangements in place for medical cover and staffing at Donvale Rehabilitation Hospital outside of business hours

64. A/Prof Matalanis stated that:

> *Communication is obviously essential between nursing staff and medical staff and between medical staff at the different institutions and that is always something that is encouraged on our part and we are always receptive to phone calls and contacts about our patients*.[45]

65. Dr Smyth states that doctors are on call 24 hours a day at Donvale. Communication is via mobile phone.[46]

66. Ms Andrew, states that patients are generally reviewed by a doctor every 24 to 48 hours

[42] Ibid.
[43] Ibid.
[44] Statement of Caroline Andrew dated 26 February 2019, Coronial Brief.
[45] Statement of Associate Professor George Matalanis dated 14 March 2018, Coronial Brief.
[46] Statement of Dr Noel Smyth dated 14 March 2018, Coronial Brief.

unless more frequent attendances are required. She further states that there are no doctors onsite out of business hours, unless they have been called in to attend to a patient.[47]

67. Dr Eddey states that rehabilitation hospitals, such as Donvale, generally accommodate patients who have been assessed as low risk of acute deterioration. However, if acute deterioration eventuates, there are arrangements in place to obtain urgent medical review. He further notes that the utilisation of these arrangements potentially depends upon the culture within the hospital and the readiness of nursing staff to call doctors and the preparedness of doctors to attend out of hours.[48]

68. I am satisfied that there are no issues with the medical practitioner coverage protocol at Donvale. I do however, note the failure of the escalation procedures, which are clearly stipulated in the ORC. The procedures specified in the ORC serve to remove the requirement for nursing staff to make judgement calls or to make their own assessments in situations where escalation is a potential. This last point has been acknowledged by Ms Andrew[49] and is discussed in detail below.

Clinical escalation procedures at Donvale Rehabilitation Hospital

69. Ms Andrew states that in December 2016, clinical escalation procedures were governed by the Donvale Healthcare Policy. In addition, the ORC that forms part of the clinical records is used to track vital signs. If an observation falls within a shaded area, an appropriate action is initiated. According to Mr Dunlop's records, his blood pressure was taken on 19 December 2016 as follows, 1.15am - 93/67, 1.25am - 85/60, 3.00am - 100/65, 3.30am - blood pressure not taken as patient was asleep, 6.00am 90/55.[50]

70. Ms Andrew states that although Mr Dunlop's blood pressure was tracked in an area of the chart that required a doctor be notified, this did not happen. When the nurse in charge reviewed Mr Dunlop at the request of the treating nurse, she did not believe that Mr Dunlop looked unwell. Ms Andrew states that the nurses believed that if they advised Mr Dunlop that they were calling in the doctor, this would have heightened his stress and anxiety. Instead, the nurses determined that they would re-evaluate the need to call in a doctor at the next set of observations.[51]

71. Dr Eddey considers this statement from Ms Andrew to be remarkable, especially when

[47] Statement of Caroline Andrew dated 12 June 2018, Coronial Brief.
[48] Expert Opinion Report by Dr David Eddey dated 28 November 2018, Coronial Brief.
[49] Statement of Caroline Andrew dated 12 June 2018, Coronial Brief.
[50] Ibid.
[51] Ibid.

calling for a doctor was clearly required by both the ORC and the Donvale's clinical escalation procedure.[52]

72. Mr Dunlop's next set of observations were at 3.00am. At this time his blood pressure had improved to 100/65. Although not recorded, Ms Andrew further states that nurses assured her that Mr Dunlop was checked on regularly throughout the night to ensure his anxiety had not returned and that he was sleeping peacefully.[53]

73. Dr Eddey considers that that there was a period of time from the afternoon on 16 December 2016 onwards, where Mr Dunlop's observations were persistently abnormal. Most particularly were his observations overnight on 18 December 2016. Dr Eddey considers this to have been a missed opportunity to have Mr Dunlop assessed by a doctor. It is possible that in the course of conducting a basic/standard bedside cardiovascular examination requiring no special equipment, a doctor could have potentially picked up on the signs of Mr Dunlop's heart failure[54], including a significant pericardial effusion and/or impending cardiac tamponade. At the very least, assessment by a doctor of Mr Dunlop's observations would most likely have elicited consideration of referral to a higher level of care.[55]

74. In a subsequent statement obtained from Dr Smyth, he states:

> *His blood pressure recorded in my notes was 100 over 60 on admission. This remained low over the weekend. The drop in oxygen saturation at 01.10 hours at 83% should have resulted in the nursing staff making a telephone call to seek medical assistance.*[56]

75. I am satisfied that the recognition, response to and the management of Mr Dunlop's deterioration was neither appropriate nor adequate. Instead of following the ORC, nursing staff:

    a. came to their own incorrect interpretation of the cause of abnormal observations;

    b. made their own incorrect interpretation of physical examination findings;

    c. relied upon the improvement of a single observation parameter (oxygen

[52] Expert Opinion Report by Dr David Eddey dated 28 November 2018, Coronial Brief.
[53] Ibid.
[54] In particular, the 'jugular venous pressure (JVP) in the neck would be significantly elevated. Observation of the JVP is an important part of a·basic cardiovascular examination and would have been easily seen in a relatively thin man, such as Mr Dunlop.
[55] Expert Opinion Report by Dr David Eddey dated 28 November 2018, Coronial Brief.
[56] Statement of Dr Noel Smyth dated 6 March 2019, Coronial Brief.

saturation) with the administration of oxygen as having solved the problem;

d. failed to consider the cause of other abnormal observations; and

e. incorrectly attributed Mr Dunlop's distress to "anxiety".[57]

Hospital Case reviews

Donvale Rehabilitation Hospital case review

76. Dr Smyth states that he presented Mr Dunlop's case to the Clinical Audit Committee Meeting of the Hospital Doctors. In response to whether any issues were identified through the various review processes, Dr Smyth details that there had been a discussion on the drop in Oz saturation at 3.00am "that responded immediately to the application of intranasal oxygen."[58] Dr Eddey highlights in his report that despite responding quickly to the administration of oxygen, this did not solve the problem. The improvement on oxygen saturation did not address the underlying cause of the low oxygen saturation or the low blood pressure and fast heart rate, both remained abnormal or borderline.[59]

77. Ms Andrew states that aside from the 1.15am reading which was "rectified" via the administration of two litres of intranasal oxygen, Mr Dunlop's readings were at 99%. Nursing staff did not deem it necessary to call in the doctor during this incident because Mr Dunlop was sleeping deeply and needed "breathing up". The Medical Director has since reviewed this assessment and believes that because Mr Dunlop responded immediately to the application of intranasal oxygen, the nursing response was appropriate.[60]

78. Conversely, Dr Eddey is of the opinion that the reduced air entry at the right lung base was most likely due to the pleural effusion found post mortem,[61] highlighting the dangers of nursing staff not following proper procedures and coming to their own conclusions outside of protocol.

79. Ms Andrew and the Medical Director conducted a serious incident investigation, which involved reviewing clinical notes and interviewing nursing staff and doctors. I note that Ms Andrew was on annual leave on 19 December 2016 and was not directly involved in Mr Dunlop's care. The case was also discussed at the Hospital's Senior Nursing Meeting, Clinical Risk and Quality Meeting and presented as a peer review at the Medical Quality

[57] Expert Opinion Report by Dr David Eddey dated 28 November 2018, Coronial Brief.
[58] Statement of Dr Noel Smyth dated 6 March 2019, Coronial Brief.
[59] Expert Opinion Report by Dr David Eddey dated 28 November 2018, Coronial Brief.
[60] Statement of Caroline Andrew dated 12 June 2018, Coronial Brief.
[61] Statement of Caroline Andrew dated 12 June 2018, Coronial Brief.

Meeting.[62]

80. Ms Andrew states that the issues identified include the failure by nursing staff to follow the specific procedure outlined in the relevant policy and marked in the ORC on the medical record.

81. Recommendations following the identification of these issues included that education of nursing staff be undertaken to reinforce the need to follow the relevant procedures. A recent audit was conducted to ensure that all staff had attended the education sessions.[63]

82. In his report, Dr Eddey raised concerns that there is nothing in the *Recognising and Responding to Clinical Deterioration* policy that requires a doctor to attend and physically assess a patient requiring a clinical review. Instead, it merely advises nursing staff to make a record of conversations with the medical practitioner. As Dr Eddey highlights in his report, it is conceivable that, based on this policy, a doctor would still not attend once the oxygen saturation had been restored with the administration of oxygen.[64]

83. In Ms Andrew's subsequent statement, she details that the *Recognising and Responding to Clinical Deterioration* policy was updated in May 2017. The updated policy does not specifically mandate that that a medical practitioner, when contacted by nursing staff and advised of deteriorating observations, attend and physically assess the patient. Ms Andrew further states that mandating such attendance was due to be the subject of discussion at the Medical Advisory Committee Meeting on 20 March 2019.[65]

84. Accordingly, it will be recommended that this policy be provided to the Court once it has been updated as per the above.

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85. A/Prof Matalanis states that Mr Dunlop's case was reviewed in detail between himself and the attending cardiologist, Dr Hage-Ali. After consideration of the circumstances, they concluded that Mr Dunlop did not require further intervention before his discharge.[66]

86. This assessment is consistent with the expert evidence provided to the Court by A/Prof Mariani.

[62] Statement of Caroline Andrew dated 12 June 2018, Coronial Brief.
[63] Ibid.
[64] Expert Opinion Report by Dr David Eddey dated 28 November 2018, Coronial Brief.
[65] Statement of Caroline Andrew dated 12 June 2018, Coronial Brief.
[66] Statement of Associate Professor George Matalanis dated 14 March 2018, Coronial Brief.

FINDINGS AND CONCLUSION

87. After consideration of the evidence before me, I am satisfied to the requisite standard that Mr Dunlop's death was preventable, in that:

    a. the nursing staff at Donvale failed to follow proper procedure to escalate care, despite further objective evidence of deterioration.

88. I express my sincere condolences to Mr Dunlop's family for their loss.

89. Having investigated the death, without holding an inquest, I make the following findings pursuant to section 67(1) of the Act:

    a. The identity of the deceased was Ian Dunlop, born 5 April 1942;

    b. The death occurred on 19 December 2016 at Donvale Rehabilitation Hospital, 1119 Doncaster Road, Donvale Victoria 3111 from pericarditis post aortic valve surgery; and

    c. The death occurred in the circumstances described above.

RECOMMENDATION

Pursuant to section 72(2) of the Act[67], the following recommendation is made:

90. That, as soon as is practicable, Donvale provide the Court with their *Recognising and Responding to Clinical Deterioration* policy, as revised following the discussion by their Medical Advisory Committee Meeting scheduled for 20 March 2019.

OTHER MATTERS

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

    a. Ms Clare Dunlop, senior next of kin;

    b. Ms Jillian Sands, Warringal Private Hospital, interested party;

    c. Dr Noel Patrick Smyth, Eastbrooke Family Clinic Doncaster, interested party;

    d. Dr Rosana Hage-Ali, cardiologist, interested party;

    e. Associate Professor George Matalanis, cardiothoracic and vascular surgeon, interested party;

[67] I note that this recommendation has already been published to the recipient and responded to as required by the Act.

f. Avant Law on behalf of Associate Professor George Matalanis;

g. Kennedy's on behalf of Dr Rosana Hage-Ali;

h. Ms Caroline Andrew, Director of Nursing, Donvale Rehabilitation Hospital, interested party;

i. First Constable Daniel Hopkins, Victoria Police, Coroner's Investigator.

Signature:

Coroner Sarah Gebert
Date : 30 November 2022

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.