IN THE CORONERS COURT

OF VICTORIA

AT MELBOURNE

Court Reference: COR 2015 4750

FINDING INTO DEATH WITHOUT INQUEST

Form 38 Rule 60(2)

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

I, AUDREY JAMIESON, Coroner having investigated the death of CHRISTOPHER ALBERT NANCE

without holding an inquest:

find that the identity of the deceased was CHRISTOPHER ALBERT NANCE

born 31 January 1948

and the death occurred on 18 September 2015

at Epworth HealthCare, 89 Bridge Road, Richmond Victoria 3121

from:

1 (a) ISCHAEMIC HEART DISEASE

Pursuant to section 67(1) of the **Coroners Act 2008**, I make findings with respect to **the following circumstances**:

1. Christopher Albert Nance was 67 years of age at the time of his death. He lived in Ferntree Gully with his wife, Leah Nance. Mr Nance's medical history included paroxysmal atrial fibrillation, a permanent pacemaker inserted in January 2015, ischaemic heart disease and osteoarthritis of the right knee. Mr Nance received regular cardiology and pacemaker reviews and was anti-coagulated due to his history of atrial fibrillation.

2. On 12 September 2015, Mr Nance attended the Angliss Hospital with severe and worsening right knee pain following a fall several days earlier. With raised inflammatory markers,[1] a diagnosis of septic arthritis[2] of the right knee was made. Mr Nance was transferred to Epworth HealthCare in Richmond, and on 13 September 2015 underwent an arthrotomy and washout of the septic right knee.[3] The procedure was uncomplicated, and intra-operative vital sign observations were all within normal limits. A sample of fluid from the knee was cultured and indicated that the likely cause of the knee pain was gout.[4] In the immediate post-operative period, Mr Nance appeared to recover physically and was mobilising with the assistance of daily physiotherapy.

3. However, from the afternoon of 14 September 2015, Mr Nance began to experience episodes of confusion. The investigation of possible causes[5] for Mr Nance's cognitive symptoms included an Electrocardiogram (ECG),[6] urine microscopy and culture, blood cultures and a range of laboratory investigations and a computed tomography (CT) scan of the brain. The brain CT scan was negative for an intracranial haemorrhage, and reviewed by the neurosurgeon Mr Paul D'Urso. The liver function tests were abnormal, but unchanged from three months earlier.[7]

4. On the morning of 15 September 2015 Mr Nance was reviewed following a Code Grey alert for aggressive behaviour.[8] The medical review determined that the likely cause for Mr Nance experiencing hallucinations and now aggressive behaviour[9] was possibly related to ethanol withdrawal.[10] However, this was only a speculative connection, the validity of which was

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[1] A raised C Reactive Protein at 237mg/Litre (normal range <5 mg/Litre) was noted, along with raised white cells and neutrophils.

[2] An infection in the joint with a clinical presentation of joint pain, swelling, warmth and restricted movement.

[3] An arthrotomy is the creation of an opening in a joint.

[4] Gout is a form of arthritis, which can cause pain and swelling in the joints

[5] The possible diagnosis included infection, an imbalance in biochemistry

[6] Non-invasive investigation of the electrical conduction pathway of the heart.

[7] Gamma glutamyl transpeptidase (GGT) 149U/L (normal range less than 50U/L, Alkaline phosphatase (ALP) 136 (Normal range 35-110U/L) and total protein 48g/L (normal range 63-80g/L).

[8] A code response indicating the need for review and management due to aggressive behaviour and hallucinations.

[9] Mr Nance received individual, one on one nursing care.

[10] Mr Nance was recorded as having regularly consumed 3-4 glasses of Scotch Whiskey a day. Alcohol related hallucinations develop within 12-24 hours of abstinence and resolve within 48 hours.

refuted by Mr Nance's family.[11] He was commenced on thiamine[12] and diazepam 10mg, only receiving three diazepam 10mg doses, all on 15 September 2015.

5. Following a review of the investigations performed, the consensus was that Mr Nance's cognitive symptoms were a result of the anaesthetic, possibly some of the analgesics which commonly cause confusion, along with ethanol withdrawal. The prescribing of tramadol[13] 100mg was ceased, with oxycodone and non-steroidal anti-inflammatory medications continued for post-operative analgesia.

6. Mr Nance's cognitive symptoms and confusion appeared to resolve over the next two days. It was noted in the medical record on 17 September 2015 that Mr Nance was 'vastly improved', but had features of obstructive sleep apnoea.

7. On 17 September 2015 at approximately 6.45pm, Mrs Nance reported what she described as a 'seizure' lasting a few minutes. No reference to Mrs Nance's observations were documented by nursing or medical personnel in the medical record. Mr Nance's vital sign observations documented later in the evening were all within normal limits. According to the nursing progress notes in the medical record, Mr Nance had a set of observations which were within normal limits on 17 September 2015 at 10.30pm. Mr Nance went to the toilet around midnight and was offered a cup of tea. He was asleep at 2.00am on 18 September 2015, checked by the nurse at 3.30am and noted to have passed urine in bed, and at 4.00am was checked and sleeping. The nature of what this check entailed was unclear.

8. On 18 September 2015 the MR39 form (a neurological assessment document) indicates that Mr Nance had a Glasgow Coma Scale (GCS) score[14] of 14. The time of the assessment was, however, overwritten. The nursing notes written at 4.10am on 18 September 2015 stated four hourly neurological GCS observations of 14 to 15. However, the timing of the neurological assessment was later clarified in a retrospective entry (made at 7.00am that morning) to be 10.30pm on 17 September 2015.

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[11] I note that Mr Nance's family have advised the Court that he was only a moderate drinker of alcohol.

[12] Vitamin B12.

[13] Tramadol is an opioid analgesic metabolised in the liver. Mr Nance was ordered 100mg twice a day, receiving a total of three doses. The last dose was in the morning of 13 September 2015.

[14] An objective scale of neurological assessment, ranging from three (deep unconsciousness) to fifteen (no impairment).

9. At 5.20am on 18 September 2015, during a routine early morning check of the patients, a nurse found Mr Nance unresponsive and a Code Blue was called. Advanced life support measures were instigated and continued. The on call cardiologist was notified by telephone, who suggested that reports of a very low arterial pH[15] and blood sugar levels[16] on blood tests taken during the resuscitative efforts were indicative of a prolonged downtime and poor prognosis. The resuscitation efforts were ceased after approximately 50 minutes, and Mr Nance's time of death was recorded by the attending Intensive Care Unit Registrar as 6.30am on 18 September 2015.

INVESTIGATIONS

Forensic pathology investigation

10. Dr Michael Burke, Senior Forensic Pathologist at the Victorian Institute of Forensic Medicine performed a full post mortem examination on the body of Mr Nance, reviewed a post mortem CT scan and referred to the Victoria Police Report of Death, Form 83. At autopsy, Dr Burke found evidence of significant heart disease. Mr Nance's heart was enlarged and there was myocardial fibrosis and associated coronary artery disease.

11. Mr Nance's pacemaker was interrogated and showed a short run of ventricular arrhythmia at 11.39pm on 17 September 2015. This was thought to be ventricular tachycardia. Mr Nance had further episodes of fast ventricular rhythms on 18 September 2015, beginning at 12.13am. The pacemaker recorded ventricular fibrillation at 12.42am. In a supplementary report dated 14 December 2015, Dr Burke noted that the pacemaker was reviewed by Cardiologist, Associate Professor (A/Prof) Neil Strathmore. The cardiology report indicated Mr Nance's time of death was 12.58am, following 15 minutes of ventricular fibrillation. As the internal pacemaker clock was 17 minutes behind, this would mean the time of Mr Nance's death was 1.15am on 18 September 2015.

12. Dr Burke ascribed the cause of Mr Nance's death to natural causes, being ischaemic heart disease.

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[15] An arterial blood sample taken at 6.22am showed a PH 6.48 (normal range 7.35-7.45), pO2 34.0mmHg (normal range 83-108 mmHg) and CO2 174 mmHg (normal range 32-48 mmHg)

[16] Blood glucose level 2.1mmol/Litre.

Family concerns

13. By way of email dated 7 October 2015, Mr Nance's wife Leah Nance, and children Matthew Nance and Deborah Fletcher wrote to the Court detailing concerns about the level of care provided to Mr Nance by the Epworth Hospital. The family expressed concerns related to Mr Nance's confused and distressed state in the days after the surgery. Mrs Nance described what she felt was an inadequate response by nursing staff to the apparent seizure she witnessed during the evening of 17 September 2015. A nurse was called, and Mrs Nance stated that she requested a medical review of Mr Nance, but this did not occur as the nurse considered it to be unnecessary.

14. An additional letter of concern from Mrs Nance was provided to the Court by Ms Fletcher on 29 October 2015. Mrs Nance emphasised her earlier concerns regarding the general level of care her husband received at Epworth HealthCare. Mrs Nance also expressed disagreement with Dr Burke's opinion that Mr Nance had died due to natural causes.

15. By way of email dated 17 December 2015, Mrs Nance submitted a Form 26 application for Inquest. Mrs Nance wrote that she had identified a number of discrepancies between the hospital's notes and the information the hospital had provided to the family at a meeting on 19 November 2015. In particular, Mrs Nance noted that the family had been advised that Mr Nance was lucid and drinking cups of tea between 10.30pm on 17 September 2015 and 5.10am on 18 September 2015, in contrast to the time of death ascertained by the pacemaker report, of 1.15am on 18 September 2015.

16. The Court also received correspondence from Bree Knoester at Adviceline Injury Lawyers on behalf of Mrs Nance, dated 26 September 2016, supporting her request for an Inquest. Ms Knoester wrote that an Inquest would be in the public interest because *inter alia*, there were concerns regarding the attribution of Mr Nance's delirium and associated symptoms to alcohol withdrawal, in contrast to the family's instructions that he was a modest drinker; a perceived inadequacy of treatment, including frequency of rounds, following Mr Nance's delirium and reported 'seizure'; and the inconsistency between the pacemaker's indication that the time of death was 1.15am, and the clinical notes suggesting Mr Nance was alive at this time.

Coroners Prevention Unit investigation

17. Following receipt of the family's concerns, I referred this matter to the Coroner's Prevention Unit[17] (CPU) to review the circumstances of Mr Nance's death.

18. A request was made to Epworth HealthCare to detail the level of observations overnight on 18 September 2015. Acting Medical Director Dr Julian Hunt-Smith provided a statement dated 16 September 2016. Dr Hunt-Smith advised that the last vital sign observations were at 10.30pm on 17 September 2015, with the Bedside Hourly Rounding Log indicating Mr Nance was checked at midnight, 2.00am and 4.00am on 18 September 2015, and noted to be asleep at each of these times.

19. In subsequent correspondence dated 23 September 2016, Dr Hunt-Smith noted an omission in that a 'Neurovascular Assessment Flowchart – Lower Limbs', contained a documented set of neurological observations timed at 3.30am[18] and noted that no cardiovascular observations were recorded after 10.30pm.[19]

20. The review of medical notes and investigations identified that the level of medical care pertaining to Mr Nance's arthrotomy surgery and the treatment of possible septic arthritis was of a satisfactory standard. It appeared Mr Nance's confused state was recognised and adequately investigated by the treating medical team. Mr Nance's care was appropriately referred to and managed by a consultant physician and neurologist. Mr Nance's renal function was checked and found to be normal, despite the family's concerns that he may have been dehydrated. The effects of analgesic and sedating medications were believed, along with alcohol withdrawal, to be the most likely cause of Mr Nance's delirium.[20] These medications were ceased and over the following two days Mr Nance was reported to improve cognitively.

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[17] 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, as well as assisting in monitoring and evaluating the effectiveness of the recommendations. The CPU comprises a team with training in medicine, nursing, law, public health and the social sciences.

[18] A/Prof Hunt-Smith wrote that the neurological observations occurred at 3.30am on 17 September 2015; I have assumed that this was an error, and A/Prof Hunt-Smith in fact meant '18 September 2015.'

[19] A/Prof Hunt-Smith wrote that no cardiovascular observations were recorded after 10.30pm on 16 September 2015, I have assumed that this was an error, and A/Prof Hunt-Smith in fact meant '17 September 2015'.

[20] Delirium is a clinical syndrome caused by a medical condition, substance intoxication or withdrawal, or medication side effect that is characterized by a disturbance of consciousness with reduced ability to focus, sustain, or shift attention.

21. Of note, interrogation of the pacemaker showed no cardiac arrhythmia at the time Mr Nance was reported by Mrs Nance to have 'seizure like activity' on the evening of 17 September 2015. Abnormal heart rhythms were recorded as commencing just prior to midnight. Interrogation of the pacemaker identified the actual time of Mr Nance's death to be four hours earlier than when he was found unresponsive and CPR commenced. Therefore, it appeared that Mr Nance was deceased when the nurse caring for him had assumed and documented he was sleeping. The conclusion to be drawn was that the nurse had either documented observations in the wrong medical record or did not perform the observations at all.

22. However, in considering all the evidence of the surrounding circumstances, including Mr Nance's medical history and the findings at the post mortem examination, it is unlikely that had Mr Nance been found earlier, the outcome would have been different. Predictors for survival after in-hospital cardiac arrest include early recognition of ventricular fibrillation. While Mr Nance's pacemaker indicated that he suffered ventricular fibrillation for 15 minutes prior to his death, for this to be detected he would have needed to be on a cardiac monitor for both early recognition and early resuscitative efforts. However, there was no clear medical reason, or earlier cardiac arrhythmia identified by pacemaker interrogation, to indicate Mr Nance required earlier cardiac monitoring.

23. In his statement to the Court dated 16 September 2016, Dr Hunt-Smith noted that Mr Nance's death was reviewed by A/Prof Waxman and the Epworth Richmond Clinical Review Committee, but no medical or nursing issues were identified. Dr Hunt-Smith advised that no specific recommendations or process changes were identified as required. There was no explanation given of the discrepancy in relation to the time of death according to the pacemaker and the medical record. However, Dr Hunt-Smith did note that as part of a general quality of care improvement activity, electronic 'point of care' documentation of rounding was now being introduced, which allows vital signs and observations and comments on a patient's state of arousal to be recorded directly at the patient's bedside.

Mention hearing on 6 December 2016

24. I scheduled a mention hearing for 6 December 2016, noting that concessions had not yet been made by Epworth HealthCare in relation to the discrepancies between the pacemaker's information and the medical record, during the early hours of 18 September 2015. The purpose of the mention hearing was also to progress the investigation, noting that Mrs Nance had made

an application for an Inquest, and to inform Epworth HealthCare that I was likely to be making adverse comment in any Finding.

25. At the mention hearing, Ms Knoester appeared on behalf of the Nance family and Mr Arushan Pillay of Counsel appeared on behalf of Epworth HealthCare. Mr Pillay advised that Epworth HealthCare had reviewed its care of Mr Nance in advance of the mention hearing, and had prepared an apology[21] to the Nance family. The apology, dated 6 December 2016 and signed by Nicole Waldron, Executive Director at Epworth Richmond, noted that the hospital had reflected on the family's feedback and implemented a policy and formal procedures so family members can escalate their concerns. The apology also acknowledged that Mr Nance's medical record for the morning of 18 September 2015 was incorrectly completed, and that there was a failure to adequately complete bedside rounding observations. It was noted that measures had been implemented to improve the quality and accuracy of documentation and counselling and guidance were implemented with the relevant staff who were involved in Mr Nance's care.

26. Mr Pillay advised that Epworth HealthCare has introduced a document entitled 'Code Worried', modelled on the principle that family members know their loved ones best and to ensure they can escalate concerns. Mr Pillay also noted that new technology has been introduced, being the Epworth Point of Care system. This system requires nurses to go to the patient's bedside and log in with their thumb print, to complete a rounding exercise on the screen. Mr Pillay added that the system times the observations and transmits this data to the nurses' main station; using a green, amber and red code to track the punctuality of observations and 'rounding'.

27. At the conclusion of the mention hearing, I invited Mr Pillay to provide written submissions by 17 January 2017. This would then enable me to assess the progress of my investigation, and offer Mrs Nance the opportunity to review her request for a public hearing.

Subsequent correspondence

28. By way of email dated 17 January 2017, Andrea de Souza of MinterEllison Lawyers provided detailed submissions on behalf of Epworth HealthCare, and attached copies of the Epworth Point of Care User Guide, Code Worried, and Physiological Observations Protocol.

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[21] I refer to Section 70 of the *Coroners Act 2008* (Vic), which provides that an 'apology means an expression of sorrow, regret or sympathy but does not include a clear acknowledgement of fault'. In addition, Section 70 provides that an apology 'does not constitute an admission as to any matter for the purposes of findings that are made under section 67 or 68'.

29. The submissions reinforced Mr Pillay comments at the mention hearing. A detailed explanation was provided regarding the Point of Care system, including a 'leader rounding' process performed daily by senior nursing staff, which includes the patient's family if they are present at the bedside. Leader rounding provides patients and their families with an opportunity to raise concerns that they feel are not being adequately addressed by their usual nurse. It was submitted that the Point of Care system is an effective measure for preventing confusion in relation to rounding and observations, and is a useful tool to ensure they are performed in a thorough and timely manner.

30. The 'Code Worried' protocol was also elaborated upon in the submissions. It was noted that this protocol involves three tiers of escalation; beginning with raising concerns with the patient's nurse, followed by the nurse in charge. If patients or families still feel that their concerns are not resolved, they are encouraged to call the Code Worried telephone number, which is answered by the nurse in charge of the Intensive Care Unit, who will refer the concerns to the appropriate clinical or administrative staff member. In addition, it was noted that Epworth HealthCare has reviewed and updated its existing Physiological Observations Protocol to incorporate a description of the purpose for bedside rounding, as being not only the opportunity to improve the patient experience, but also, to confirm patient safety and well-being.

31. It was submitted by the lawyers on behalf of Epworth HealthCare that a public hearing was not required, and that given Epworth HealthCare's concessions and recent introduction of significant new practices, a recommendation to review its standards of documentation and nursing observation was not necessary.

32. By way of email dated 30 January 2017, Ms Knoester advised the Court that Mrs Nance had reviewed Epworth Healthcare's submissions and did not wish to pursue her request for an Inquest.

COMMENTS

Pursuant to section 67(3) of the Coroners Act 2008, I make the following comment connected with the death:

1. Mrs Nance and her children have suffered considerable anguish in the wake of Mr Nance's death. Unfortunately, their distress has been no doubt compounded by the drawn out process of

clarifying what actually transpired during the early hours of 18 September 2015, and gaining related acknowledgment and concessions from Epworth HealthCare.

2. The investigation has identified that Mr Nance's treatment at Epworth HealthCare was largely reasonable and appropriate. Moreover, noting that pacemaker records did not indicate any contemporaneous cardiac arrhythmia when Mrs Nance witnessed an apparent seizure at 6.45pm on 17 September 2015, the family's concerns regarding the treatment of this possible seizure and Mr Nance's confused state were not causative of his death, and are therefore not within the scope of my jurisdiction.

3. However, the four hour discrepancy between the medical records and data in the pacemaker, as to Mr Nance's time of death, has illuminated that alarmingly inadequate and incorrect nursing observations were made by Epworth HealthCare staff on 18 September 2015. It is disappointing that Epworth HealthCare did not take the earlier opportunity, in Dr Hunt-Smith's correspondence to the Court, to concede that this discrepancy fell below expected standards of care. However, I do acknowledge – and hope that Mr Nance's family take comfort in – the apology rendered at the mention hearing on 6 December 2016.

4. Moreover, the restorative and preventative measures raised by Mr Pillay at the mention hearing, and elaborated upon in subsequent submissions, do indicate that Epworth HealthCare now has superior systems in place, to ensure nursing observations are timely and accurate, and that families have a clear process by which to escalate their concerns. It is to be hoped that the 'Point of Care' and 'Code Worried' systems prevent the recurrence of like events in the future.

5. Having regard to all the matters including that Mrs Nance's application for an Inquest has effectively been withdrawn, and that restorative and preventative measures have been undertaken by Epworth HealthCare, I have determined not to hold a public hearing.

FINDINGS

I find that at the time of Mr Nance's admission to Epworth HealthCare with a diagnosis of septic arthritis of the right knee, he suffered from significant co-morbidities, including ischaemic heart disease.

AND I further find that the weight of the evidence indicates that while Mr Nance's care was generally reasonable and appropriate, the nursing observations undertaken during the early hours of 18 September 2015 were inadequate and incorrect. However, in the absence of an identified medical

reason for continuous cardiac monitoring of Mr Nance on the evening of 17 to 18 September 2015, I am unable to find that the death of Mr Nance was preventable or that the issue about his observations contributed to his death.

In the circumstances, I accept and adopt the medical cause of death as identified by Dr Michael Burke and find that Christopher Albert Nance died from natural causes, being ischaemic heart disease.

Given the identified educative value of this Finding for health professionals, pursuant to section 73(1A) of the *Coroners Act 2008,* I order that this Finding be published on the internet.

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

Mrs Leah Nance
Ms Gabrielle Castillo, Epworth HealthCare
Ms Bree Knoester, Adviceline Injury Lawyers
Ms Andrea de Souza, MinterEllison
Mr Arushan Pillay of Counsel

Signature:

AUDREY JAMIESON
CORONER

Date: 17 February 2017