FORM 38

Rule 60(2)

FINDING INTO DEATH WITHOUT INQUEST

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

Court reference: 4217/08

In the Coroners Court of Victoria at Melbourne

I, JUDGE JENNIFER COATE, State Coroner

having investigated the death of:

Details of deceased:

Surname: WESTLEY
First name: ANDREW
Address: 43 Equestrian Drive, Woodcroft, South Australia 5162

without holding an inquest:

find that the identity of the deceased was ANDREW WESTLEY
and death occurred on 10th July, 2008

at The Alfred Hospital, Commercial Road, Melbourne, Victoria 3004

from

1a. CARDIOGENIC SHOCK
1b. END STAGE ISCHEMIA DUE TO CHEMO RELATED CARDIOMYOPATHY
1c. FULMINANT RESPIRATORY FAILURE
1d. VRE SEPSIS AND ASPERGILLUS AND HEPATIC AND RENAL FAILURE
2. HEART TRANSPLANT COMPLICATED BY NEED FOR EXTRA CORPOREAL MEMBRANE OXYGENATION (ECMO) FOR 30 DAYS

Pursuant to Section 67(2) of the **Coroners Act 2008**, an inquest into the death was not held and the deceased was not immediately before the person died, a person placed in custody or care; but there is a public interest to be served in making findings regarding the following circumstances:

Introduction

1. Andrew Westley ("Mr Westley") was 56 years old at the time of his death. He resided with his wife Sandra Westley ("Mrs Westley") in Adelaide. Mr Westley had a past medical history, which included a myocardial infarction, coronary artery surgery, aortic valve replacement and mediastinal radiotherapy for Hodgkins lymphoma. As a result of this treatment, he developed dilated cardiomyopathy. Mr Westley was an ex-smoker.

2. Mr Westley was admitted on to the cardiac transplant list in January, 2008 and assessed in the transplant clinic of the Alfred Hospital on 17 April, 2008. He was classified in class 3-4 heart failure and continued working from home.

Transplant procedure

3. On 9 June, 2008, a donor heart was sourced from far North Queensland. A decision was made to accept the organ for transplant. Mr Westley was advised of this decision and booked on a 6:45am flight from Adelaide due to arrive at 8:30am.

4. In the meantime, the donor team from the Alfred Hospital departed Melbourne at 3:00am on 10 June, 2008 and arrived at 6:40am. The donor cross clamp was at 7:38am. At 8:48am, the team departed and arrived at 12:34pm in Melbourne. The team was transported back to the Alfred by helicopter at 1:10pm and arrived at 1:25pm. The organ was transferred into theatre at 1:30pm.

5. At 9:23 am on 10 June, 2008, Mr Westley was contacted by the transplant co-ordinator at the Alfred Hospital. It was discovered that Mr Westley's flight was delayed. As a result, Mr Westley arrived in the Emergency and Trauma Centre at 10:00am. At 10:07am, an x-ray was performed in order to facilitate a speedy admission. He was subsequently admitted and prepared for surgery by the Resident Medical Officer and anaesthetist. Mr Westley was taken to the operating theatre at 10:30am.

6. Following administration of anaesthesia, Professor Donald Esmore, Head of Cardiothoracic Surgery, commenced surgery at 11:34am. At 2:00pm, Mr Westley's cardiopulmonary bypass was established and at 2:51pm, the donor heart was prepared. At 2:56pm, Mr Westley's heart was cross clamped. At 4:38pm, the cross clamp was removed and at 7:02pm, the heart/lung machine was turned off. As the donor heart was unable to support the circulation, an intra-aortic balloon pump (IABP) was inserted via his left femoral artery and inotropes were increased. With continuing low cardiac output, Mr Westley was placed on extra corporeal membrane oxygenation (ECMO) to support the heart. The anaesthesia finished at 7:57pm and Mr Westley was transferred to the intensive care unit (ICU) at 8:38pm. The statements indicated a total ischaemic time (time without normal blood flow) of 9 hours. It was also revealed that during surgery, Mr Westley's heart had severe adhesions as a result of previous surgery and radiotherapy.

Post operative care

7. Post operatively, Mr Westley remained in ICU for 30 days. During this time, Mr Westley developed a range of complications. Mr Westley underwent a transoesophageal echocardiogram (TOE) that showed a dilated hypocontractile left ventricle. Mr Westley's condition remained

unstable. The IABP was removed and a cardiac biopsy performed on 17 June, 2008 showed no rejection of the organ. Mr Westley became septic and developed gastrointestinal bleeding. A gastroscopy performed on 18 June, 2008 revealed erosive gastritis.

8. On 22 June, 2008, the ECMO was removed and IABP was reinserted. Mr Westley's condition continued to deteriorate and the following day the ECMO was recommenced.

9. Mr Westley continued to have abnormal liver function and remained septic with vancomycin resistant entercoccus (VRE) noted on blood cultures. A family meeting was held regarding the insertion of a left ventricle assist device (LVAD). On 6 July, 2008, the LVAD was inserted and two days later a right ventricular assist device (RVAD) was inserted. ECMO continued to support the failing donor heart along with inotropes.

10. Despite the biventricular assist device, Mr Westley's condition continued to deteriorate with worsening multi organ failure. Following discussion with the family, Mr Westley was palliated and he passed away on 10 July, 2008.

11. The cause of death ascribed on the medical certificate was cardiogenic shock, end stage ischemia due to chemo related cardiomyopathy, fulminant respiratory failure, VRE sepsis and aspergillus and hepatic and renal failure complicated by heart transplant needing ECMO for 30 days, LVAD and RVAD.

Family concerns

12. On 14 August 2008, the Health Service Commissioner received a complaint from Mrs Westley about the care Mr Westley received from Professor Esmore and the Alfred Hospital.

13. Given that Mr Westley's death was not initially reported to the coroner, the complaint was referred to the coroner for investigation. Mrs Westley was notified of this on 18 September, 2008.

Investigation

14. The Clinical Liaison Service (CLS)[1], reviewed the circumstances of Mr Westley's death at three multidisciplinary Case Review Meetings, chaired by a coroner on 29 October, 2008, 13 May 2009 and 20 May, 2009, wherein they had regard to the medical records provided by the

[1] CLS (now recognised as the Health and Medical Investigation Team (HMIT)) sits within the Coroners Prevention Unit (CPU), which was established to strengthen the prevention role of the coroner. The CLS is an initiative aimed at evaluating clinical management in reportable healthcare deaths and assisting in identifying factors that may improve patient safety and risk management in health services. CLS is staffed by practising Clinical Physicians and Clinical Nurse Reviewers. The case was further reviewed by HMIT on 7 and 8 December, 2010.

Alfred Hospital, Mrs Westley's letter dated 12 August, 2008, the pathology report and statements from the Alfred Hospital. Following the meetings, the coroner considered it necessary to obtain statements from Professor Esmore, the transplant procurement team and an independent expert opinion.

Statement of Professor Esmore

15. Ultimately, Professor Esmore provided two statements.[2] In summary the questions to and responses from those statements were as follows:

What factors were taken into account in relation to the decision to proceed with the transplant surgery?

16. Professor Esmore indicated the primary considerations as to when to proceed with a transplant are based on blood group, patient-donor size match and the prospective lymphocyte cross-match result. Secondary considerations included duration on the waiting list and clinical need.

17. Professor Esmore highlighted that his experience and judgement is called upon to make difficult clinical and operating decisions therefore all decisions in relation to Mr Westley's procedure were based purely on clinical factors not whether a patient was publicly or privately insured. In a complex case such as Mr Westley's, clinical management decisions were discussed within a multi-disciplinary team.

18. He had performed over 400 heart transplants and had never abandoned a transplant procedure. He considered Mr Westley's presentation to be a particularly complex case.

19. Whilst the surgery to remove Mr Westley's heart was more difficult than expected due to adhesions, the transplant procedure itself was completed uneventfully. The fact Mr Westley had previously undergone open heart surgery was not in itself contraindicative to surgery. Professor Esmore indicated that an experienced surgeon would envisage an operating time of approximately 1.5 hours to establish cardiopulmonary bypass in preparation for the transplant procedure.

20. In relation to donor information, Professor Esmore outlined that the donor was a 54 year old male, weighed 76 kg, had a good cardiac output, no family history of heart disease on no inotropic support, although a smoker. On the basis of these particulars, overall he considered the donor to be a 'good (but not optimal) quality donor.'

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[2] Dated 11 March 2009 and 28 February, 2011

What are the time frames that are acceptable practice for ischaemic time for a donor organ prior to transplantation

21. Prolonged ischaemic time was usually regarded as 6.5 hours, however, Professor Esmore indicated that the Alfred Hospital has had extensive experience and success with long ischaemic time in excess of 6.5 hours. He referred to a seminal article detailing successful clinical outcomes of transplant patients where there were long ischaemic times.

Post operative care

22. Professor Esmore opined that at all stages Mr Westley was offered *"the maximum in contemporary care, always with consensus from the multi-disciplines involved".* Reference was also made to the *"frank and open discussion and consultation with his wife".*

23. In conclusion in his statement dated 28 February, 2011 Professor Esmore stated: "*this complex heart transplant procedure involved a cascade of unexpected delays in recipient* (Mr Westley's) *transfer, a good but not optimal donor, a prolonged organ transit time and an extremely complex implant procedure. However the ischaemic time was nevertheless in an area where success has been achieved by our Unit in the past."*

Expert opinion

24. Dr Paul Jansz, Cardiothoracic Surgeon & Heart and Lung Transplant surgeon provided an independent expert report.[3] I note Dr Jansz currently practises at the St Vincent's Hospital in Sydney.

25. In summary, Dr Jansz indicated:

> The ideal circumstances, although "not a hard and fast rule" to proceed with a donor heart with an ischaemic time in excess of 6 hours would be: a young donor, preferably a male, preferably larger than the recipient, on no inotropes, no cardiovascular history, good cardiac function on echocardiogram and a straightforward recipient operation, in particular no previous surgery and a low transpulmonary gradient (TPG).

Post operative care

26. In his opinion, the clinical care provided to Mr Westley "was entirely appropriate."

[3] Undated

Should transplant have proceeded given the difficulties that were being experienced?

27. At the time the decision was made to proceed with surgery, the ischaemic time was 4 hours.[4] An ischaemic time of six hours had elapsed when the donor heart reached The Alfred.[5]

28. Dr Jansz was of the opinion that if Mr Westley's heart could have been removed and the donor heart implanted and re-perfused within the ensuing 2 hours, it was a reasonable decision to proceed with the surgery, if the circumstances were ideal as noted above.

29. It was preferable that the operation on Mr Westley commenced well in advance of the donor heart arriving, given the ischaemic time of six hours. According to Dr Jansz, it was reasonable to assume that if surgery started at 11:34am, Mr Westley's heart could be removed and the donor heart implanted within 2 hours. However, it took 2.5 hours to establish cardiopulmonary bypass[6] only, this in itself was indicative that "the recipient procedure was difficult, even in the hands of one of the most experienced surgeons in Australia."

30. It would be a difficult situation, according to Dr Jansz, to have predicted that the removal of Mr Westley's heart would have taken as long as it did, although previous surgery and radiotherapy may have been indicative of this. However, once the decision was made to proceed with surgery, which was clearly difficult, Dr Jansz was of the opinion that "at this point there was no way of turning back."

The prolonged ischaemic time

31. According to Dr Jansz, 9 hours ichaemic time would undoubtedly be associated with increased morbidity and mortality. Given that it was evident that ischaemic time would be prolonged, in his view this, itself, was not a contraindication to proceeding with transplant surgery provided the donor and recipient were chosen appropriately, that is, the circumstances were ideal.

32. In conclusion, Dr Jansz stated that *"while the decision to proceed with the transplant could be justified, a conservative surgeon in such a circumstance would probably shy away from such a transplant given the difficult circumstances. However, it is clear that proceeding with such a transplant would be only advisable if the donor organs were optimal in that the donor was young.[7] From the outset of deciding to proceed with this donor the decision would have been*

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[4] from 7:38am when donor organ was cross clamped until 11:34 am when Mr Westley was taken into surgery - see under heading 'Transplant procedure'

[5] At 1:30pm - see under heading 'Transplant procedure'

[6] At 2:00pm

[7] At the time Dr Jansz prepared the report he did not have information in relation to the donor. This information was subsequently obtained and was listed in Professor Esmore's report dated 28 February, 2011.

made knowing that the travel time was going to exceed 5-6 hours and that the ischaemic time was going to be at least 7 hours."

Conclusion

33. Having regard to Dr Jansz and Professor Esmore's statements, I find that Mr Westley's transplant procedure was highly complex. Whilst the donor was 'good' but not optimal the cascade of uncontrolled circumstances led to an unsuccessful outcome. I am, however, satisfied that the decision to proceed with the transplant was based on clinical factors within a multi-disciplinary team and therefore, reasonable and appropriate. I consider the care provided to Mr Westley post transplant was as Dr Jansz states, "entirely appropriate".

34. I wish to note that this finding does not diminish Mr Westley's life or diminish the issues raised and heartache felt by Mrs Westley at the loss of her husband.

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

1. I note in Professor Esmore's further report, he indicates Mr Westley's transplant procedure was extensively reviewed, both in individual departments at the Alfred Hospital and in the Mortality and Morbidity Committee. As a result of these reviews, there has been a change of practice within the Alfred Hospital in relation to transplants. Firstly, very few organs are now accepted from Queensland donors owing to the distance for procurement and the uncertainty this can cause and secondly, elective extra corporeal membrane oxygenation (ECMO) support is now being considered for any ischaemic time in excess of 6 hours.

2. Given the role of the coroner in promoting public health and safety, I consider it appropriate in this case to direct that a copy of this decision be published on the court's website, to assist in highlighting risks associated with transplants particularly with prolonged ischemic times.

Finding

I find Mr Andrew Westley died as a result of cardiogenic shock, end stage ischemia due to chemo related cardiomyopathy, fulminant respiratory failure, VRE sepsis and aspergillus and hepatic and renal failure complicated by heart transplant needing extra corporeal membrane oxygenation (ECMO) for 30 days, left ventricular assist device (LVAD) and right ventricular assist device (RVAD).

Signature:

Judge Jennifer Coate
State Coroner
Date: October 20, 2011

DISTRIBUTION:
I direct that this Finding be distributed to the following:

Mrs Sandra Westley
Mr Bill O'Shea, Corporate Counsel, Alfred Hospital
Professor Donald Esmore, Alfred Hospital
Ms Diana Battaglia, Manager Legal Support Services
Ms Beth Wilson, Health Services Commissioner
Dr Paul Jansz, St Vincent's Hospital, Sydney