IN THE CORONERS COURT
OF VICTORIA
AT MELBOURNE

Court Reference: COR 2016 6008

FINDING INTO DEATH WITHOUT INQUEST

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

Findings of:	Simon McGregor, Coroner
Deceased:	**Tangimama Tavai**
Date of birth:	7 April 1981
Date of death:	19 December 2016
Cause of death:	Unascertained
Place of death:	Sunshine Hospital, 176 Furlong Road, St Albans Victoria 3021

INTRODUCTION

1. Tangimama Tavai was a 35-year-old woman who lived with her partner, Peter Jones at and their six children at 9 Denton Avenue, St Albans Victoria 3021 at the time of her death.

2. Ms Tavai died from complications after giving birth to her eighth child[1] at Sunshine Hospital, 176 Furlong Road, St Albans Victoria 3021 on 19 December 2016.

THE PURPOSE OF A CORONIAL INVESTIGATION

3. Ms Tavai's death was reported to the Coroner as it appeared unexpected, 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.*

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 Coroner's Investigator, First Constable Paul Attard prepared a coronial brief in this matter. The brief includes statements from witnesses, including the forensic pathologist who examined Ms Tavai and treating clinicians.

7. After considering all the material obtained during the coronial investigation, I determined that I had sufficient information to complete my task as coroner and that further investigation was not required. 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.

8. I have based this finding on the evidence contained in the coronial brief. In the coronial jurisdiction facts must be established on the balance of probabilities.[2]

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[1] Ms Tavai was in her ninth pregnancy, including seven prior live births.

[2] This is 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

9. In considering the issues associated with this finding, I have been mindful of Ms Tavai's basic human rights to dignity and wellbeing, as espoused in the *Charter of Human Rights and Responsibilities Act 2006*, in particular sections 8, 9 and 10.

BACKGROUND

10. On 18 December 2016 at approximately 8.57am, Ms Tavai was admitted into the Sunshine Hospital Women's Pregnancy Care Centre (the Hospital).

11. Ms Tavai was a smoker and had a body mass index (BMI) of 36. Throughout her antenatal care, discussions had been held with her detailing the risks of an elevated BMI. These included gestational diabetes, pregnancy induced hypertension, as well as the risk of bleeding postpartum or postpartum haemorrhage. Cessation of smoking was also encouraged.[3]

12. From 8.00am on 18 December 2016 through to 8.00am 19 December 2016, Associate Professor Vinay Rane was the rostered Obstetrician and Gynaecologist Consultant on call at the Hospital.[4]

13. On 18 December 2016 at approximately 11.00am, Assoc. Prof. Rane received a phone call from the duty registrar, stating that a 35-year-old grand multiparous[5] patient had presented at 40 weeks and 4 days gestation with absent foetal movements on a background of recurrent presentations over the preceding week with decreased foetal movements. Assoc. Prof. Rane was told that 'the CTG[6] was normal and that an amniotomy was possible albeit with an unfavourable cervix'.[7]

14. Treatment and management options were discussed, including assessment of foetal wellbeing versus immediate induction of labour. Given Ms Tavai's history, Assoc. Prof. Rane advised that it was best to induce labour as soon as practicable. This advice was given

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the evidence provides a comfortable level of satisfaction as to those matters taking into account the consequences of such findings or comments.

[3] Statement of Associate Professor Vinay Rane dated 18 November 2016 [typographical error, should read 2018], Coronial Brief

[4] Statement of Associate Professor Vinay Rane dated 20 December 2016, Coronial Brief.

[5] Generally considered to be a woman who has given birth to five or more infants who have achieved a gestational age of 24 weeks or more.

[6] Cardiotocography: records the foetal heartbeat.

[7] Statement of Associate Professor Vinay Rane dated 20 December 2016, Coronial Brief

with the view that should Ms Tavai decline, foetal wellbeing was to be assessed with a CTG and ultrasound.[8]

15. Due to demand in the birth suite at the time, the decision was made to place a Cook's Catheter[9] in Ms Tavai until the amniotomy[10] (ARM) could be performed. Shortly after this decision, Assoc. Prof. Rane was informed by the duty registrar that the birth suite was able to accommodate Ms Tavai. The duty registrar suggested that Ms Tavai not have the Cook's Catheter and instead have ARM/ syntocinon[11] when possible. As this was keeping within the Western Health Induction of Labour Policy[12], Assoc. Prof. Rane was comfortable with this management plan.[13]

16. At approximately 9.30pm, the duty registrar role was handed over to Dr Kristy Fennessy. Dr Fennessy was told that Ms Tavai had previous uncomplicated deliveries but that this time she was suffering from pregnancy induced hypertension. The handover board flagged that Ms Tavai was at risk of postpartum haemorrhage because she was a grand multiparous woman. Dr Fennessy was further informed that Ms Tavai had an ARM at approximately 5.15pm, followed by a syntocinon infusion.[14]

17. On 19 December 2016 at approximately 4.47am, Assoc. Prof. Rane received an automated text message calling an obstetric alert in relation to Ms Tavai. At 4.48am, a live baby was born with Dr Fennessy in attendance.[15] In an effort to manage her postpartum risk, ten units of IV syntocinon were administered to Ms Tavai a short time after.[16]

18. At approximately 5.05am, Ms Tavai was noted as having some bleeding.[17] At approximately 5.12am, Dr Fennessy called Assoc. Prof. Rane to discuss the case. She told him that she believed Ms Tavai was having a postpartum haemorrhage in the context of multiparity. Dr Fennessy detailed that the vagina appeared intact and that she believed the bleeding was coming from the uterus.[18]

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[8] Ibid.
[9] Cervical ripening balloon.
[10] Artificial rupture of membranes ('breaking the water').
[11] Labour can be induced or augmented using intravenous oxytocin (Syntocinon®).
[12] Women's Services DG-CC2.6.1
[13] Statement of Associate Professor Vinay Rane dated 20 December 2016, Coronial Brief.
[14] Statement of Dr Kristy Fennessy dated 14 December 2017, Coronial Brief.
[15] Statement of Associate Professor Vinay Rane dated 20 December 2016, Coronial Brief.
[16] Statement of Dr Kristy Fennessy dated 14 December 2017, Coronial Brief.
[17] Statement of Associate Professor Vinay Rane dated 20 December 2016, Coronial Brief.
[18] Statement of Dr Kristy Fennessy dated 14 December 2017, Coronial Brief.

19. Dr Fennessy had already made the decision to take Ms Tavai to theatre for EUA[19] and management of postpartum haemorrhage with a Bakri balloon[20] placement.[21] She advised Assoc. Prof. Rane of the clinical situation and informed him that arrangements were being made.[22]

20. Assoc. Prof Rane offered to attend if required and asked Dr Fennessy if she was happy to proceed without him onsite. At the time, Ms Tavai was haemodynamically stable and was not complaining of any abdominal pain.[23] After discussing Ms Tavai's clinical condition and the proposed management plan, Dr Fennessy and Assoc. Prof. Rane agreed that it was appropriate for the surgery to be undertaken without delay.[24] Assoc. Prof. Rane remained offsite and the surgery commenced at 5.40am.[25]

21. At approximately 5.48am, Assoc. Prof. Rane received a call requesting his attendance because a bleeding cervical tear had been noted.[26] Specifically, Dr Fennessy found a large posterior cervical tear extending to the top of the vagina. Ms Tavai's uterus was intact and there was ongoing bleeding from the tear and the uterus.[27] Assoc. Prof. Rane immediately made his way to the hospital.[28]

22. During the surgery, Dr Fennessy re-examined the uterus and then held the cervix with sponge holding forceps. She notes that the cervical tear extended to the top of the vagina but did not appear to extend into the lower segment on visual inspection and when feeling to the apex. Dr Fennessy repaired the cervical tear with a continuous 1.0 vicryl suture, commencing at the apex of the tear.[29]

23. While en route at approximately 5.56am, Assoc. Prof. Rane was updated that the bleeding had settled but that his attendance was still required. Assoc. Prof. Rane advised 'that if there was any concern regarding haemostasis that the vagina should be packed' until he arrived.

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[19] Examination under anaesthesia.
[20] Used to provide temporary control or reduction of postpartum uterine bleeding.
[21] Statement of Associate Professor Vinay Rane dated 20 December 2016 and Statement of Dr Kristy Fennessy dated 14 December 201, Coronial Brief.
[22] Supplementary statement of Western Health dated 6 September 2019, Coronial Brief.
[23] Statement of Associate Professor Vinay Rane dated 20 December 2016, Coronial Brief.
[24] Supplementary statement of Western Health dated 6 September 2019, Coronial Brief.
[25] Statement of Associate Professor Vinay Rane dated 20 December 2016, Coronial Brief.
[26] Statement of Associate Professor Vinay Rane dated 20 December 2016, Coronial Brief.
[27] Statement of Dr Kristy Fennessy dated 14 December 2017, Coronial Brief.
[28] Statement of Associate Professor Vinay Rane dated 20 December 2016, Coronial Brief.
[29] Statement of Dr Kristy Fennessy dated 14 December 2017, Coronial Brief.

He was informed that blood loss was estimated at approximately one litre on the birth suite with some further unmeasured loss in theatre.[30]

24. While suturing the tear, Dr Fennessy noticed that Ms Tavai's systolic blood pressure was 72mmHg, and her pulse rate was 82. Given that Ms Tavai was suffering ongoing bleeding, the decision was made to give her an urgent blood transfusion along with crystalloid resuscitation.[31]

25. Haematologist, Dr William Renwick confirms that activation of the massive transfusion protocol occurred at 5.50am. He further states that he believes that this decision was made at the appropriate time.[32]

26. At approximately 6.00am, after the tear had been repaired, the Bakri balloon was inserted and inflated. Dr Fennessy noted that Ms Tavai continued to be hypotensive[33] and grew concerned about her haemodynamic stability. Obstetrician and gynaecologist resident, Dr Ha, was requested to collect the blood products required for the previously activated massive transfusion protocol. The Intensive Care Unit (ICU) registrar, Dr Winyak, was requested in order to assist with the resuscitation and central venous access. Due to the condition of Ms Tavai, Dr Fennessy also called the ICU on call specialist, Dr James Douglas and requested his urgent attendance.[34]

CIRCUMSTANCES IN WHICH THE DEATH OCCURRED

27. At approximately 6.12am, Assoc. Prof. Rane received a further update that a code blue had been called following a bradycardic episode and that cardiopulmonary resuscitation (CPR) had commenced.[35]

28. Assoc. Prof. Rane queried whether Dr Fennessy was comfortable to commence an emergency laparotomy, but was advised that haemostasis[36] had been achieved ten minutes prior to the code blue. Assoc. Prof. Rane inquired about the availability of the second on call consultant. He was advised that they would be 30 minutes away. At this point, Assoc. Prof. Rane was approximately 3.2 kilometres away from the Hospital.[37]

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[30] Statement of Associate Professor Vinay Rane dated 20 December 2016, Coronial Brief.
[31] Statement of Dr Kristy Fennessy dated 14 December 2017, Coronial Brief.
[32] Statement of Dr William Renwick dated 28 August 2018, Coronial Brief.
[33] Abnormally low blood pressure.
[34] Statement of Dr Kristy Fennessy dated 14 December 2017, Coronial Brief.
[35] Statement of Associate Professor Vinay Rane dated 20 December 2016, Coronial Brief.
[36] Stopping of a flow of blood.
[37] Statement of Associate Professor Vinay Rane dated 20 December 2016, Coronial Brief.

29. Assoc. Prof. Rane arrived at the Hospital at approximately 6.18am. When he entered the operating theatre, CPR was underway. Ms Tavai was unresponsive and there was no vaginal bleeding. Specifically, the obstetric issues remained in control. Assoc. Prof. Rane noted approximately 150 millilitres of blood in the Bakri bag and no vaginal bleeding. The uterus was firm, central and size appropriate, given the presence of a 400 millilitre Bakri balloon.[38] He continued:

> *Anaesthetic and ICU teams were in attendance and the respective on call consultants for each discipline had been contacted. Compressions were ceased for a moment to assess the patient's cardiac rhythm and during this time I performed a bedside ultrasound examination of the pelvis to exclude intra-abdominal pathology and in particular uterine rupture. Ultrasound examination did not reveal gross intra-abdominal fluid. The abdomen was not distended.*[39]

30. The anaesthetic team performed a thoracic ultrasound, which demonstrated bilateral lung whiteout. There was ongoing difficulty with ventilating Ms Tavai and CPR was recommenced. The principle issue at that point in time was critical care of Ms Tavai, and in particular, her life support.[40]

31. At approximately 6.32am, Clinical Services Director, Women's and Children's Services at Western Health, Sunshine Hospital, Associate Professor Glyn Teale received a call from Assoc. Prof. Rane. Assoc. Prof. Rane informed him that Ms Tavai was undergoing CPR following a cardiac arrest in the context of a postpartum haemorrhage. Assoc. Prof. Teale was at home at the time and made his way to the hospital, arriving at approximately 7.20am.[41]

32. At approximately 7.13am, just prior to Assoc. Prof. Teale's arrival, Assoc. Prof. Rane informed him that Ms Tavai had a pulse, blood pressure and cardiac output and that CPR had subsequently been stopped. He further informed Assoc. Prof. Teale that Ms Tavai's oxygen level remained inadequate. In conjunction with Dr Douglas, attempts were made to improve oxygenation unsuccessfully.[42]

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[38] Ibid.
[39] Ibid.
[40] Ibid.
[41] Statement of Associate Professor Glyn Teale dated 19 December 2016, Coronial Brief.
[42] Ibid.

33. Upon his arrival, Ms Tavai was still in theatre. There were three consultants and a full resuscitation team present, comprising of nurses and other doctors.[43] After approximately 45 minutes of resuscitation efforts, vaginal bleeding recommenced and the Bakri balloon was removed and replaced twice. The second replacement was done by Assoc. Prof. Teale, who also conducted an EUA and noted a further clot within the uterus. Between each placement of the Bakri balloon, the uterus was noted to be well contracted, only to become atonic[44] again. At this stage, Ms Tavai was on maximal supportive therapy and remained profoundly hypoxic.[45]

34. A multi-disciplinary discussion about the possibility of hysterectomy was held. It was concluded that this was not an option because a laparotomy would not be survivable given Ms Tavai's current state.[46]

35. During the resuscitation efforts, Ms Tavai had 'a massive transfusion of blood products, ongoing asystole, and torrential, bloody frothy sputum from the endotracheal tube associated with significant ventilatory difficulty. A bedside echocardiogram and lung ultrasound showed no evidence of either a pneumothorax or a pericardial effusion and she remained in cardiac standstill'.[47]

36. At approximately 8.20am, Dr Douglas, Dr Alex Henry, Assoc. Prof. Rane and Assoc. Prof. Teale made the collective decision to stop blood pressure support in the context of ongoing severe hypoxia.[48] The decision was made as all attempts of salvage were exhausted.[49]

37. Assoc. Prof. Teale stated that he believed postpartum haemorrhage along with other factors may have been the reason for Ms Tavai's death.[50]

IDENTITY AND CAUSE OF DEATH

38. On 19 December 2016, Peter Jones visually identified the body of his partner, Tangimama Tavai, born 7 April 1981. Identity is not in dispute and requires no further investigation.

39. On 22 December 2016, Dr Khamis Almazrooei, a registered medical practitioner practicing as a Registrar in Forensic Pathology at the Victorian Institute of Forensic Medicine (VIFM)

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[43] Ibid.
[44] Atonic: loss of muscle tone.
[45] Statement of Associate Professor Vinay Rane dated 20 December 2016, Coronial Brief.
[46] Statement of Dr James Douglas dated 7 February 2018, Coronial Brief.
[47] Statement of Dr James Douglas dated 7 February 2018, Coronial Brief.
[48] Low oxygen.
[49] Statement of Associate Professor Glyn Teale dated 19 December 2016, Coronial Brief.
[50] Ibid.

and supervised by Forensic Pathologist Dr Matthew Lynch, conducted an autopsy upon Ms Tavai's body and reviewed a post mortem computed tomography (CT scan) and the Police Report of Death for the Coroner. Dr Almazrooei provided a written report, dated 29 May 2017, in which he formulated the cause of death as *'I(a) Unascertained'*.

40. Toxicological analysis of post mortem samples taken from Ms Tavai identified the presence of morphine[51], pethidine[52], metoclopramide[53], paracetamol[54] and lignocaine[55].

41. Dr Almazrooei commented that according to medical notes and the medical deposition form, the possible medical cause of death was thought to be postpartum haemorrhage possibly complicated by amniotic fluid embolism and/ or pulmonary thromboembolism.

42. The amount of blood loss documented in the clinical notes was variable (1-2 litres). Assessment of quantity and significance of blood loss at post mortem examination was difficult.

43. At the post mortem examination, pulmonary embolism was not identified. Ms Tavai's lungs were sampled extensively and there was no evidence of amniotic fluid embolism histologically.

44. I accept Dr Almazrooei's opinion as to cause of death.

REVIEW OF CARE

45. In conducting my investigation, I referred the matter to the Coroners Prevention Unit[56] (CPU) for further assessment of the quality of obstetric care afforded to Ms Tavai. Namely, from a medical perspective, was her death preventable?

46. This assessment involved considering possible contributing factors and obtaining additional statements from relevant clinicians.

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[51] Morphine is a narcotic analgesic used to treat moderate to severe pain. It is also a metabolite of codeine.
[52] Pethidine is a synthetic narcotic analgesic related pharmacologically to morphine and methadone.
[53] Metoclopramide is an anti-emetic drug used for the treatment of nausea and vomiting.
[54] Paracetamol is an analgesic drug available in many proprietary products either by itself or in combination with other drugs such as codeine and propoxyphene.
[55] Lignocaine is a local anaesthetic often administered to patients prior to surgery or during resuscitation attempts.
[56] 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.

Possible causes of death other than postpartum haemorrhage

47. On 19 December 2016 at approximately 5.50am, Ms Tavai's massive blood transfusion was activated. Clinical records indicate that the transfusion of the relevant blood products commenced at 6.00am.[57]

48. I have considered the possibility of whether Ms Tavai experienced transfusion-associated circulatory overload (TACO) and transfusion related lung injury (TRALI).

49. In a statement obtained from Dr William Renwick, he states that Ms Tavai did not receive any blood products until she became hypotensive and her blood pressure remained low or low normal throughout resuscitation. He further states that TACO would usually cause significant hypertension. The chest x-ray 'did show widespread alveolar infiltration suggestive of acute pulmonary oedema, which could be associated with TACO, so it cannot completely be discounted…'[58]

50. The possibility of TACO and TRALI was also considered by VIFM Registrar in Forensic Pathology, Dr Almazrooei. Dr Almazrooei wrote in his report that the diagnosis of TRALI is made clinically and then confirmed by laboratory investigation, including the identification of signs of acute lung injury. There was some patchy pulmonary oedema evident at autopsy, but there were no signs of acute lung injury. He commented that further laboratory investigations, for example, testing for antibodies in donor blood, would assist in diagnosis.

51. A blood sample from Ms Tavai was retrieved and sent to the Australian Red Cross Blood Service for testing. Tests were run on the various donors. One donor was found to have granulocyte antibodies directed against antigens present in Ms Tavai and another was found to have HLA class II antibodies directed against antibodies in Ms Tavai. While not conclusive proof, this is suggestive of being a *potential* causal factor in TRALI.[59]

52. Despite autopsy and additional haematology investigations, due to the multitude of blood products given to Ms Tavai and the lack of time to clearly identify which blood product was given when, it is not possible to ascertain for certain whether her deterioration was linked to the administration of a particular blood product.

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[57] Supplementary statement of Western Health dated 6 September 2019, Coronial Brief.
[58] Statement of Dr William Renwick dated 28 August 2018, Coronial Brief.
[59] Ibid.

53. It is possible that TRALI contributed to Ms Tavai's death. TACO cannot be discounted but is considered unlikely. While the exact cause of Ms Tavai's death has not been ascertained, from the evidence before me, I am satisfied that Ms Tavai suffered from a substantial postpartum haemorrhage that contributed her death.

Management by treating doctors

54. Ms Tavai had multiple risk factors for the development of postpartum haemorrhage. The Royal Women's Hospital and Western Hospital policies on postpartum haemorrhage outline risk factors for postpartum haemorrhage. Those applicable to Ms Tavai were:

(a) Antenatal risk factors:

(i) Grand multiparity;

(ii) BMI >35; and

(iii) Previous postpartum haemorrhage.[60]

(b) Intrapartum risk factors:

(i) Augmented labour;[61] and

(ii) Precipitate labour;[62]

(c) Other factors not listed as specific risk factors prior to the birth but contributing nonetheless:

(i) The slow development of established labour requiring increasing doses of syntocinon;

(ii) Compound presentation of the foetus;[63] and

(iii) The need for urgent delivery contributing to the risk of birth canal trauma.

[60] Clinical notes indicate that Ms Tavai had a 450-millilitre haemorrhage following the previous delivery. This amount does not technically fulfil the definition of postpartum haemorrhage, but the blood loss was significant.
[61] Use of syntocinon.
[62] Ms Tavai's labour was slow to become established but once contractions were established, the labour and delivery were precipitate.
[63] That is, the hand beside the head, increasing the risk of trauma to the birth canal.

55. Notwithstanding the systemic issues detailed below, I am satisfied that once Ms Tavai's health deteriorated, management by the treating doctors was timely and appropriate.

Systemic issues that may have contributed to Ms Tavai's death

56. Assoc. Prof. Rane details that Ms Tavai:

> *...had reported decreased foetal movements on numerous occasions and then presented to the hospital with absent foetal movements at 40 weeks and 4 days gestation. In the setting, I believe it is most appropriate to have induced labour in this woman in order to minimise the risk to the baby...*
>
> *We know that decreased foetal movements particularly late in pregnancy have a significant correlation with adverse outcomes for foetuses.*[64]

57. Assoc. Prof Rane states that Ms Tavai went from 3 centimetres dilation at approximately 10.30pm to having delivered her baby at approximately 4.48am. He considers this to be within acceptable time parameters for her labour.[65]

58. Ms Tavai was a high-risk patient for the reasons detailed above. Namely, that she had multiple risks for her labour and delivery. While the antenatal risks appear to have been recognised, the obstetric care afforded to Ms Tavai considered that the concern of decreased foetal movement could be managed by either induction of labour (IOL) or close monitoring.

59. Rather than induce Ms Tavai on a Sunday afternoon, the safer decision may have been to perform the IOL during normal working hours to maximise the number and seniority of staff and to minimise the impact of any urgent management on the remainder of patients in the delivery suite.

60. I consider Dr Fennessy's management of the delivery, recognition and commencement of management of the postpartum haemorrhage within ten minutes of delivery, and the management in theatre to have been timely and appropriate.

61. I make comment that Dr Fennessy performed at or above the level expected of an obstetric registrar of her seniority dealing with this life-threatening condition with minimal medical assistance under extremely stressful circumstances. Dr Fennessy acted decisively and activated all necessary pathways.

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[64] Statement of Associate Professor Vinay Rane dated 18 November 2016 [typographical error, should read 2018], Coronial Brief.
[65] Ibid.

62. I further comment that the anaesthetic registrar also managed Ms Tavai's condition appropriately without the assistance of a consultant anaesthetist.

63. While I appreciate the decision to request a consultant's attendance in the middle of the night and/ or early hours of the morning is a difficult one and acknowledge that it was a joint decision between Dr Fennessy and Assoc. Prof. Rane to proceed to theatre without delay, Dr Fennessy should have requested Assoc. Prof. Rane's attendance when it became apparent that Ms Tavai was suffering a postpartum haemorrhage at 4.48am. Namely, it would have been appropriate for her to have identified the need for a more senior clinician to attend.

64. Similarly, given Ms Tavai's medical history, complications and Dr Fennessy's communication of same, Assoc. Prof. Rane's personal risk assessment should have identified the need for him to attend earlier. If not for the surgery, for the immediate post-operative assessment and care. Ideally, a consultant anaesthetist would have also been present.

Post incident implementations

65. Western Health has since considered how it can better Hospital processes after the death of Ms Tavai, namely by:

    (a) Review of IOL procedure to ensure it contains clear guidelines and sets out a process where consideration is given to risk factors by the staff scheduling women for IOL, particularly when out of hours and/ or on the weekend;

    (b) Review of IOL procedure to include specific triggers for escalation to senior members of staff;

    (c) Notify the consultant anaesthetist of any patient being managed for postpartum haemorrhage.; and

    (d) Consideration by the organisation of rostering an obstetrician in support of the continuous delivery service and review all options for consultant rostering and attendance that best serves the existing and future clinical requirements. Alternatively, triggers for mandatory attendance of consultants could be developed for example, when >1.2 litres of postpartum haemorrhage.

COMMENTS PURSUANT TO SECTION 67(3) OF THE ACT

66. The difficulty for hospital doctors in requesting consultant attendance in the middle of the night and early hours of the morning is well known. I stress the importance of systemic change to overcome this barrier to care.

67. The factors contributing to Ms Tavai's death were multiple.

68. Ms Tavai's IOL occurred on a Sunday night. Had her IOL occurred during working hours when consultant staff would be on the premises and blood banks operating to business hour efficiencies, assessments and interventions may have been faster and more definitive.

69. The procedures and criteria for escalation were also unclear. I note that the Royal Women's Hospital (RWH) policy regarding escalation to senior medical staff includes indications for notification and mandatory attendance of the rostered Birth Centre obstetrician. These indications include the requirement for the registrar to notify the rostered Birth Centre obstetrician of any complexity that, in their opinion, requires consultant input and awareness. Had this policy been in place, given the circumstances, it would be reasonable to state that Dr Fennessy would have been required to notify Assoc. Prof. Rane at 4.48am, when it first became apparent that Ms Tavai was suffering from a significant postpartum haemorrhage. Had this occurred, Assoc. Prof. Rane would have likely been present to conduct the EUA and repair the birth canal injuries.

70. I further note that the RWH policy indications for mandatory attendance of the rostered Birth Centre obstetrician include postpartum haemorrhage of greater than 1000 millilitres.

71. I am satisfied that the proposed review of specific triggers for escalation to senior medical staff, in addition to a review of the protocol surrounding the presence of senior medical staff or the rostering of an on-site consultant obstetrician 24 hours a day, will address this issue.

RECOMMENDATIONS PURSUANT TO SECTION 72(2) OF THE ACT

72. I recommend that Safer Care Victoria recommends all maternity services develop and implement institution specific policies that include triggers for mandatory escalation to and attendance by senior medical staff for postpartum haemorrhage and other obstetric emergencies.

FINDINGS AND CONCLUSION

73. I express my sincere condolences to Ms Tavai's family for their loss.

74. Having investigated the death, without holding an inquest, I make the following findings pursuant to section 67(1) of the *Coroners Act 2008*:

    (a) The identity of the deceased was Tangimama Tavai, born 7 April 1981;

    (b) The death occurred on 19 December 2016 at Sunshine Hospital, 176 Furlong Road, St Albans Victoria 3021 from an unascertained cause; and

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

75. Pursuant to section 73(1B) of the Act, I direct that this finding be published on the Internet.

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

    (a) Mr Peter Jones, senior next of kin

    (b) Ms Nicola Caras of Western Health, interested party

    (c) Associate Professor Vinay Rane, interested party

    (d) Dr Kristy Fennessy, interested party

    (e) Associate Professor Glyn Teale, interested party

    (f) Dr William Renwick, interested party

    (g) Dr James Douglas, interested party

    (h) Chief Executive Officer, Safer Care Victoria, interested party

    (i) First Constable Paul Attard, Coroner's Investigator

Signature:

SIMON McGREGOR

CORONER

Date: 26 September 2019

Coroners Court of Victoria