Coroners Act 1996
[Section 26(1)]

Western *Australia*

RECORD OF INVESTIGATION INTO DEATH

Ref: 44/14

I, Sarah Helen Linton, Coroner, having investigated the death of ***Petra ZELE*** *with an inquest held at the* ***Perth Coroner's Court, Court 58, CLC Building, 501 Hay Street, Perth*** *on* ***25 November 2014 to 1 December 2014*** *find that the identity of the deceased person was* ***Petra ZELE*** *and that death occurred on or about* ***1 June 2010*** *at* ***Fremantle Hospital*** *from* ***hypoxic brain injury following a cardiac arrest in association with pulmonary hypertension*** *in the following circumstances:*

Counsel Appearing:

Ms K Ellson assisting the Coroner.
Ms C Thatcher (State Solicitor's Office) appearing on behalf of Fremantle Hospital
Ms G McGrath (Panetta McGrath Lawyers) appearing on behalf of Dr Butler and Professor Federman
Mr D Bourke (Clayton Utz instructed by MDA National Insurance) appearing on behalf of Dr Ukalovich
Ms B Burke (ANF) appearing on behalf of Nurse Pain
Mr A Hershowitz (instructed by Kawalsky Lawyers) appearing on behalf of Nurse van Schalkwyk

Table of Contents

INTRODUCTION 2
THE DECEASED 3
THE ORAL CONTRACEPTIVE PILL 4
FACTOR V LEIDEN MUTATION 6
MARCH – APRIL 2010 7
FREMANTLE HOSPITAL - 9 MAY 2010 8
First presentation 8
The unlabelled ECG trace 11
Dr Hinsley 14
VISIT TO DR UKALOVICH – 27.5.2010 18
THE ECHOCARDIOGRAM AND DR BUTLER 20
EVENTS ON 28 MAY 2010 21
Conversation between Dr Butler and Dr Ukalovich 21
Fremantle Hospital Emergency Department 24
CAUSE OF DEATH AND MANNER OF DEATH 25
DR HINSLEY'S MANAGEMENT OF THE DECEASED 25
STANDARD OF CARE PROVIDED BY 30
DR UKALOVICH AND DR BUTLER 30
COMMENTS IN RELATION TO PUBLIC HEALTH GENERALLY 37
CONCLUSION 40

INTRODUCTION

1. At the start of 2010, Petra Zele was a fit and active young woman. She was a keen and talented dancer and was also passionate about the environment. She had just returned from extended overseas travel to Perth, recently married and started work at the Town of Cottesloe as a Sustainability Officer. She enjoyed close and loving relationships with her family and friends who admired her beauty, generosity and enthusiasm for life. In short, she was living a full and happy life at that time, and making plans for her future.

2. It therefore came as a terrible shock to her family and friends when Ms Zele died at Fremantle Hospital on 1 June 2010, having never recovered after collapsing on her way to the hospital a few days before.

3. Ms Zele's death was certified by a doctor at Fremantle Hospital. The cause of death was entered as hypoxic brain injury with antecedent causes of cardiac arrest and pulmonary embolus.[1]

4. At the time she died, Ms Zele's death was not reported to the State Coroner. The hospital staff who certified the death concluded Ms Zele's death did not meet the requirements for a reportable death and they were unaware of family concerns about her medical care.[2] Accordingly, no post mortem examination was conducted.

5. In a letter to the Coroner dated 13 October 2010, Ms Zele's mother raised concerns about her daughter's care in Fremantle Hospital, as well as the conduct of two other doctors in relation to the results of an echocardiogram performed on 27 May 2010, shortly before her death.[3] This was the first time the death came to the attention of the Coroner's Court.

6. The Executive Director of Fremantle Hospital, Dr David Blythe, had become aware of Ms Zele's family's concerns about her death around 6 October 2010.[4] He met with Ms Zele's family on 21 October 2010[5] and then on 12 November 2010 completed a Sentinel Event Notification form and an internal investigation was commenced.[6] The death was also referred to the Coroner.[7]

7. A coronial investigation was commenced. That investigation led to an inquest into the death of Ms Zele (the deceased), which I held from 25 November 2014 to 1 December 2014.

---

[1] Exhibit 2, Tab 1A.
[2] Exhibit 1, Tabs 4A and 4B.
[3] Exhibit 1, Tab 2C.
[4] Exhibit 1, Tab 4B.
[5] Exhibit 1, Tab 2D, "Overview" Document, 1.
[6] Exhibit 1, Tab 4B.
[7] Exhibit 1, Tab 4C, letter of Dr Blythe dated 21.10.2010

8. The issues to be investigated through the hearing were identified by Ms Ellson in her opening address as touching upon two points in time. Firstly, in relation to events occurring on 9 May 2010 when the deceased presented to the Emergency Department at Fremantle Hospital. Secondly, in relation to the events concerning the results of the deceased's echocardiogram performed on 27 May 2010.[8]

9. The documentary evidence comprised two volumes of materials obtained during the investigation[9] and a number of additional exhibits tendered during the hearing. Two documents clarifying issues raised during the inquest were also provided after the inquest concluded.[10]

10. It was noted at the start of the inquest that the Australian Health Practitioner Regulation Agency (AHPRA) had already finalised their proceedings in relation to three doctors involved in the care of the deceased: Dr Hinsley, Dr Butler and Dr Ukalovich.[11] Documentation from those proceedings formed part of the brief of evidence.

11. Oral evidence was heard from Dr Hinsley, Dr Ukalovich and Dr Butler, as well as two nurses from Fremantle Hospital involved in the care of the deceased on 9 May 2010. In addition, evidence was heard from Dr Blythe and Dr Dey from Fremantle Hospital in relation to general hospital procedures and their involvement in the hospital investigation into this death. Evidence was also heard from a large number of specialists who provided their expert opinions in relation to the medical care provided to the deceased and the cause of death.

12. Oral Submissions were made at the close of the hearing on behalf of the various parties, including the family of the deceased. I have given those submissions due consideration before making my findings.

THE DECEASED

13. The deceased was born on 6 May 1982 in Rijeka, Croatia. In 1994, she moved to Perth, Australia with her family. She settled into life in Australia, learning English and making new friends. Her childhood dream was to be a world famous ballerina and she moved closer towards her goal when she was accepted into the John Curtin High School gifted and talented dance programme. As confirmation

[8] Transcript 4.
[9] Exhibits 1 and 2.
[10] Letter from Dr Blythe to Coroner Linton dated 8 December 2014; Email from Prof Gabbay to Ms Ellson dated 2 December 2014.
[11] Transcript 5.

of her talent, in her final year of school she won a State school dance award.[12]

14. The deceased was also very interested in environmental issues. After graduating from high school she completed an Environmental Science and Sustainable Development degree at Murdoch University and later found work as an Environmental Officer with various local councils.[13]

15. The deceased then followed her dream of returning to her childhood home of Rijeka, where she lived and worked, teaching dance and competing in international dance competitions. She also travelled through Europe. On her travels she met her future husband in Greece and they continued a long distance relationship before eventually living together, first in Greece and then in Australia from August 2009.

16. On her return to Perth, the deceased quickly found work with the Town of Cottesloe as a Sustainability and Environmental Officer and also continued her professional dancing, training four days a week.[14]

17. The deceased married her husband in a small ceremony in January 2010. They were planning a bigger ceremony to celebrate the event with family and friends the following year. Sadly, she died before this could take place.[15]

THE ORAL CONTRACEPTIVE PILL

18. While the combined oral contraceptive pill is generally considered to be a safe drug, it is well-recognised that taking the combined oral contraceptive pill increases the risk of developing venous thrombosis (known colloquially as DVT).[16] This can lead to pulmonary embolism, a serious complication. For the ordinary young woman with no risk factors other than being prescribed the oral contraceptive pill, that risk is generally considered to be very low.[17] It is also worth noting, when considering the risk of using the oral contraceptive pill (which is a highly effective form of contraception), there is also an increased risk of venous thrombosis during pregnancy and in the post-partum period.[18]

[12] Exhibit 1, Tab 2I.
[13] Exhibit 1, Tab 2I.
[14] Exhibit 1, Tab 2.
[15] Exhibit 1, Tab 2I.
[16] Transcript 197.
[17] Transcript 197.
[18] Transcript 64.

19. Most oral contraceptive pills contain two types of hormones; an oestrogen and a progestogen/progesterone.[19] Different brands of oral contraceptive pill contain different types of progesterone.[20] While it was previously thought the risk of developing venous thrombosis related to the oestrogen, it is now believed that the type of progesterone used can affect the level of risk of venous thrombosis.[21]

20. Some recently published studies have reported a greater risk of blood clots in women taking oral contraceptives containing the progesterone drospirenone (as compared to the progesterone levonorgestrel).[22] Microgynon, which is the most commonly prescribed pill, contains levonorgestrel. The next most commonly prescribed oral contraceptive pill, Yasmin, contains drosperinone.[23] Evidence was heard at the inquest that data suggests the increased risk of venous thrombosis is approximately 3.6 times when taking Microgynon, as compared to a 6.3 times increased risk when taking Yasmin.[24]

21. On 6 July 2011, the Australian Government's Therapeutic Goods Administration (TGA) issued an advisory in relation to oral contraceptive pills containing drospirenone (the only ones registered for use in Australia being Yaz and Yasmin). The TGA noted that published studies suggest a two- to three-fold increase in the risk of venous thrombosis in women taking drospirenone-containing oral contraceptives; acknowledging, however, that there were a number of limitations in these studies. The TGA indicated it had no plans to remove or restrict the sale of the products but would continue to closely monitor and assess all new information about the products. It advised any patient with concerns to discuss taking alternative forms of contraception with their doctor. It also identified the symptoms of a blood clot that should prompt attendance at the Emergency Department of the nearest hospital.

22. On 4 November 2009, the deceased visited a general practitioner at the Phoenix Medical Centre and was prescribed the oral contraceptive pill Yasmin.[25] The records from the medical centre indicate that, at least shortly prior to her travel to Croatia in June 2007, she was prescribed the oral contraceptive pill Microgynon.[26] It is not clear in the notes why the type of pill was changed in late 2009.

---

[19] Transcript 196; Exhibit 8.
[20] Transcript 197; Exhibit 8.
[21] Transcript 197.
[22] Exhibit 8.
[23] Transcript 197.
[24] Transcript 197.
[25] Exhibit 6.
[26] Exhibit 6.

23. Simply taking the oral contraceptive pill increased the deceased's risk of developing venous thrombosis. The change of oral contraceptive pill to one containing drospirenone seems, on the basis of current published studies, to have increased that risk further, albeit the absolute risk remained low without the presence of other risk factors.[27]

FACTOR V LEIDEN MUTATION

24. In recent years, significant study has been undertaken into thrombophilia, an abnormality of blood coagulation that increases the risk of thrombosis. The single most common genetic risk factor for venous thrombosis was found to be a genetic mutation known as the factor V Leiden mutation. It is a mutation in one of the body's proteins that makes a person resistant to the effect of activated protein C. Protein C is a protein in the body that is helpful in breaking down clots. Therefore, when the body produces a clot, which is a natural and not uncommon occurrence, a person with the mutation is less likely to be able to break that clot down. Approximately 5 percent of the population have the mutation.[28]

25. Being a carrier of the factor V Leiden mutation is, therefore, a risk factor for developing venous thrombosis. As noted above, being on the combined oral contraceptive pill is another risk factor. The question then arises whether the combination of the two risk factors creates an increased risk of venous thrombosis.

26. A study conducted into the incidence of venous thrombosis in oral contraceptive users who are carriers of the factor V Leiden mutation found that the risks were significantly increased where both risk factors were present. Compared with women who did not use oral contraceptives and were not carriers of the mutation, the risk of thrombosis among those with both risk factors was increased more than thirty fold.[29] The study also concluded that "in the presence of both risk factors, venous thrombosis develops in a substantial number of women who would never have had thrombosis in the presence of either risk factor alone."[30]

27. Given these results, the authors of the study considered whether young women who are considering starting oral contraceptives should be screened for the mutation. They noted that the absolute risk of deep vein thrombosis is low even among young women who have both risk factors and most episodes are minor, although

[27] Transcript 197 - 198.
[28] Transcript 199; Exhibit 7.
[29] Exhibit 7, 1453.
[30] Exhibit 7, 1456.

pulmonary embolism does occur.[31] In conclusion, the authors of the study recommended that general screening should not be undertaken, but where a young woman has a family history of thrombosis it might pay to investigate it; similarly, if a young woman develops venous thrombosis. If she is found to have the factor V Leiden mutation, that status might be taken into account in counselling about future methods of contraception.[32]

28. The information about factor V Leiden mutation is relevant to this inquest because after her death, the deceased's family were advised to undergo a blood test to determine if they had any family history of blood clotting disorders. The deceased's mother, maternal uncle, maternal grandmother and two cousins, were found to have heterozygous factor V Leiden thrombophilia. Further, in late 2010, both the deceased's uncle and grandmother developed pulmonary embolisms, requiring hospitalisation, although they both survived and are now on anti-coagulant therapy.[33]

29. As there was no post-mortem examination it was not possible to test the deceased for the presence of the genetic mutation. However, on the basis of the family history and the events surrounding her death, two experts were prepared to say that it was very likely that the deceased had the factor V Leiden mutation.[34] This information was obviously not available to the deceased or her treating doctors at the time of her death, but it is relevant to her cause of death and to questions about what can be learned from her death for the future.

MARCH – APRIL 2010

30. On 6 March 2010, approximately four months after being prescribed the Yasmin oral contraceptive pill, the deceased was seen by Dr Ashford at the Phoenix Medical Centre. She complained of six days of dizziness, feeling faint, tiredness and suffering from a headache. Her examination was normal and a possible viral illness was diagnosed. Blood tests were ordered, the results of which were all normal.[35]

31. The deceased returned to see Dr Ashford on 17 March 2010, still complaining of fatigue and a sore throat and feeling unable to exercise. Blood tests for viral infections including cytomegalovirus, Ross River virus and Epstein Barr virus were negative. A diagnosis

[31] Exhibit 7, 1456.
[32] Exhibit 7, 1453 and 1456.
[33] Exhibit 2, Tab 2H.
[34] Transcript 145, 210.
[35] Exhibit 6, Consultation 6.3.2010.

of post-viral fatigue was suggested and Dr Ashford noted that it should settle over time.[36]

32. On 12 April 2010, the deceased again saw Dr Ashford and at that consultation it was recorded that she had recovered from her viral illness. She was administered a cervical cancer vaccine.[37] A final vaccination was given on 7 May 2010, at which time a brief note was entered that she was 'well'[38] and it did seem at that time that her tiredness was easing.[39]

FREMANTLE HOSPITAL - 9 MAY 2010

First presentation

33. Two days after her last visit to the doctor, the deceased awoke in pain in the early hours of the morning on 9 May 2010. She felt pain under her lower left breast and shortness of breath on movement.[40]

34. The deceased attended the Fremantle Hospital Emergency Department with her mother. She was seen by the Triage Nurse, Nurse Kylie Pain, at 3.09 am. The deceased presented with sudden pain to the left side of her chest, reproduceable on movement and breathing.[41] The deceased reported her pain as 4 out of 10 at the time she was seen by Nurse Pain, although it had initially been 8 out of 10 when she had first woken.[42] Nurse Pain also ticked the box on the Triage Assessment form that the deceased was on "Nil" medications, which she assumed was in response to her standard question to patients, "Are you on any medications?"[43] Nurse Pain made a primary assessment of the deceased and noted that her colour, breathing and circulation were unremarkable.[44] Her pulse was taken and recorded as 76, which was within normal limits.[45]

35. At 3.15 am, the deceased's other observations were also taken by Nurse Pain and recorded, including her systolic blood pressure of 95, her respiratory rate of 18 and her oxygen saturation of 98 percent on room air.[46] The only observation that appeared outside normal range to Nurse Pain was the blood pressure, which in her opinion was a little low but could be normal for some patients.[47]

---

[36] Exhibit 6, Consultation 17.3.2010.
[37] Exhibit 6, Consultation 12 April 2010.
[38] Exhibit 6, Consultation 7 May 2010.
[39] Exhibit 1, Tab 2D, "Overview" Document.
[40] Exhibit 1, Tab 2C, 1.
[41] Exhibit 2, Tab 1C; Transcript 14.
[42] Exhibit 2, Tab 1C; Transcript 14.
[43] Transcript 20.
[44] Exhibit 2, Tab 1C; Transcript 13.
[45] Exhibit 2, Tab 1C; Transcript 13.
[46] Exhibit 2, Tab 1C, Transcript 16.
[47] Transcript 16.

36. Nurse Pain's initial assessment of the deceased was that she was likely to be experiencing musculoskeletal pain, rather than cardiac chest pain.[48] According to Nurse Pain, this is a common presentation in the Emergency Department.[49] The deceased was given paracetamol and ibuprofen[50] and Nurse Pain entered a Triage Code of 4, which indicated that she should be seen within 60 minutes.[51]

37. At 4.00 am the deceased was seen again by Nurse Pain, probably because the designated nurse in the area was on a break.[52] Nurse Pain made a note that the deceased stated her pain had resolved.[53] Nurse Pain did not take a further set of observations at that time as that was not part of her usual duties as the triage nurse.[54]

38. The deceased was seen by a different nurse at 4.38 am. Nurse Doret van Schalkwyk is a registered nurse and works at Fremantle Hospital in the Emergency Department. She was working the night shift in the Emergency Department on 9 May 2010. Nurse van Schalkwyk had no independent recollection of that day but based her evidence upon her notes and usual practice.[55] Nurse van Schalkwyk gave evidence that she made an entry in the deceased's progress notes at 4.38 am. indicating that the deceased stated her pain was at a level of 3 out of 10. Nurse van Schalkwyk then initiated an ECG (based upon the notation "ECG√").[56] She inferred the reason she did this was because the patient had reported chest pain, the pain was no longer resolved, and there was no central monitoring in the treatment area where the deceased was placed.[57] As there was no central monitoring, Nurse van Schalkwyk would have had to do the ECG on a portable machine.[58]

39. It was the standard practice at Fremantle Hospital at that time,[59] and continues to be the required procedure,[60] that nursing staff are required to label or hand write the patient's details on every ECG trace. Once the ECG trace is properly identified, the trace is then to be provided to a Registrar to check, interpret and sign.[61]

---

[48] Transcript 15.
[49] Transcript 23.
[50] Exhibit 2, Tab 1C: Transcript 14 – 15.
[51] Exhibit 2, Tab 1C; Transcript 13.
[52] Exhibit 1, Tab 7, Statement dated 18 November 2014 [7].
[53] Exhibit 2, Tab 1C; Transcript 15.
[54] Transcript 17.
[55] Exhibit 1, Tab 16 [2].
[56] Exhibit 1, Tab 16; Transcript 174 - 175.
[57] Transcript 175.
[58] Transcript 175 – 176.
[59] Transcript 74.
[60] Transcript 108; Exhibit 1, Tab 4B, 2.
[61] Exhibit 1, Tab 16 [17].

40. Nurse van Schalkwyk maintained that her invariable practice was to follow the usual procedure and always place a label (or handwrite the required details if no label is available) on the ECG trace and have it signed by a Registrar.[62] Nurse van Schalkwyk also gave evidence that she would not make the entry into the notes of having done an ECG until she had performed the ECG, had it signed by a Registrar and put the signed result with the patient's notes.[63]

41. Therefore, according to the evidence of Nurse van Schalkwyk, there was an ECG trace created on a portable machine on 9 May 2010 that was later signed by a Registrar and placed with the deceased's medical record by Nurse Schalkwyk.[64]

42. However, when the hospital commenced an investigation into the death of the deceased an inspection of the deceased's medical record found no ECG trace dated 9 May 2010.[65] There were three ECGs on the file that are clearly related to the deceased's later admission on 28 May 2010. The only other ECG trace in the record was an unlabelled and unsigned ECG trace bearing a date of 1 July 1999.[66]

43. That an ECG was done by Nurse van Schalkwyk is supported by the information provided by the deceased's mother, who indicated to the court that she had a strong recollection of the nurse taking an ECG at the bedside then walking away with the result, presumably to find a Registrar.[67] The deceased's mother also recalled the nurse telling them that the results of the ECG were normal.[68] Nurse van Schalkwyk thought that it was unlikely she would have used the term 'normal', although she agreed she may have said something to reassure them.[69]

44. This is also consistent with the information that the deceased provided to the general practitioner, Dr Laurie Ukalovich, when she saw him two weeks later. Dr Ukalovich recalled that when the deceased attended his practice on the morning of 27 May 2010 she told him that an ECG had been performed at Fremantle Hospital two weeks prior and the result was normal.[70]

45. It does not accord with the information included in the discharge letter faxed to Dr Ashford, the deceased's regular GP. That letter indicated that 'nil investigations' were performed on 9 May 2010.[71] However, Dr Blythe, on behalf of Fremantle Hospital, accepted that

[62] Exhibit 1, Tab 16 [18].
[63] Transcript 176, 186.
[64] Transcript 179 – 180.
[65] Exhibit 1, Tab 8, 1.
[66] Exhibit 2, Tab 1G.
[67] Transcript 188, 339.
[68] Transcript 188.
[69] Transcript 181 - 182, 188.
[70] Exhibit 1, Tab 3, letter dated 14 December 2010, 1; Transcript 293.
[71] Exhibit 1, Tab 4A, Fremantle Hospital Emergency Medicine Summary 9 April 2010.

the information in the discharge letter in that regard was incorrect and was an oversight on the part of the hospital.[72]

46. There appears, then, to be a general acceptance that Nurse van Schalkwyk did perform an ECG on 9 May 2010 and a trace was created. Whether the unlabelled ECG trace on the medical record is the result of that ECG remains, however, unresolved.

The unlabelled ECG trace

47. Nurse van Schalkwyk does not accept the unlabelled ECG trace is the ECG that she performed.[73] According to Nurse van Schalkwyk, there must have been another ECG trace created in relation to the deceased that night, labelled and signed by a Registrar, that is no longer on the file. Nurse van Schalkwyk could not explain what had happened to that ECG trace.[74] No search of the Fremantle Hospital medical records was undertaken to see if a labelled ECG for the deceased could be located[75] so it cannot be ruled out that it was filed incorrectly.

48. The unlabelled ECG trace found on the deceased's medical record does not comply with the standard Fremantle Hospital procedure for labelling and certifying an ECG tracing. It has no identifying label affixed, nor any handwritten notation.[76]

49. It has also not been signed by a doctor.[77] Dr Dey, the Director of Emergency Medicine at Fremantle Hospital, gave evidence that if a doctor was given an unlabelled ECG to review he would expect them to refuse to sign it until it was labelled, although he has adopted a practice of writing the information on the ECG himself to speed the process.[78]

50. If the ECG trace remains unlabelled, the hospital policy is that the ECG should not be filed with the patient's medical record and should be destroyed.[79]

51. The date of the ECG is also puzzling. The date of the ECG, automatically printed by the portable machine, shows a date of 1/7/1999 and a time of 13:21:59.[80]

---

[72] Exhibit 1, Tab 4A, 2.
[73] Exhibit 1, Tab 16 [19]; Transcript 177.
[74] Transcript 189.
[75] Letter from Dr David Blythe to Coroner, 8 December 2014.
[76] Exhibit 1, Tab 8; Exhibit 2, Tab 1G.
[77] The hospital policy is that all ECG traces must be reviewed by a doctor at Registrar level or above – Exhibit 1, Tab 4B, 2.
[78] Transcript 70.
[79] Exhibit 1, Tab 8; Transcript 110.
[80] Exhibit 2, Tab 1G.

52. Dr Dey advised that the date and time on the portable ECG machines is manually set upon arrival of the machine by Biomedical Services. The machines then undergo an annual maintenance check and the date and time are checked as part of that process. If, however, during the year the internal battery that maintains the date and time goes flat or fails, the machine defaults to the earliest date (or default date) for that machine.[81] Both Dr Dey and Dr Blythe gave evidence that they believe it is likely the date on the unlabelled ECG is the default date for the portable machine on which the ECG was taken.[82]

53. The portable ECG machines are checked on a daily basis by nursing staff. The check includes checking that the ECG is displaying the correct date and time and that it is printing correctly.[83] If a staff member notices that an ECG machine is not functioning correctly, he or she is required to advise Biomedical Services and remove the machine from the floor.[84] If an ECG trace is printed with the incorrect date and/or time, it should be noted on the trace and hand corrected by the staff member.[85]

54. I accept it is far more likely that the date on the unlabelled ECG is the default date for the machine, rather than the actual date on which the ECG trace was performed. The deceased was not in hospital on 1 July 1999[86] and the first time she attended Fremantle Hospital was not until December 2001.[87] It is extremely unlikely that an ECG trace from 1999 worked its way on to her file by chance, especially given the general practice of destroying them if found lying around and unlabelled. It is far more likely that the ECG trace was taken on or around 9 May 2010 but the machine on which it was performed had defaulted to its default date and this was not noticed by the staff member performing the ECG.

55. Nurse van Schalkwyk gave evidence that it was her standard practice to check the date and time of the ECG machine before using it each time.[88] It is partly for that reason that she is confident the unlabelled trace is not the ECG that she took that day.

56. Dr Blythe and Dr Dey, on the other hand, believe that the unlabelled ECG trace probably does belong to the deceased, although it is not possible to be 100% sure.[89] The difference in the heart rate recorded in the deceased's nursing progress notes by Nurse Pain

[81] Exhibit 1, Tab 8.
[82] Transcript 74, 109 – 110.
[83] Transcript 18.
[84] Exhibit 1, Tab 8; Transcript 176.
[85] Exhibit 1, Tab 8.
[86] Transcript 111.
[87] Exhibit 2, Tab 1.
[88] Transcript 176.
[89] Exhibit 1, Tab 4 and Tab 8; Transcript 110.

and the heart rate on the ECG does raise the possibility that it is not the deceased's ECG, but the difference can be explained by the different point in time when they were taken.[90]

57. Dr Gabbay, a Professor of Respiratory Medicine and a Respiratory Physician, observed that the results of the ECG are abnormal and clearly show features compatible with right ventricular strain, consistent with pulmonary hypertension.[91] These are exactly the features one would have expected to see in the deceased, knowing now that she did have chronic right ventricular disease.[92] In Dr Gabbay's opinion, although one cannot be 100% certain, it is extremely likely, or at the least very likely, that the ECG trace is the one taken of the deceased on 9 May 2010.[93]

58. Dr Federman, a Consultant Cardiologist, agreed that the unlabelled ECG was not a normal ECG and he considered the results of the ECG looked a bit like the one taken on the deceased's presentation to hospital on 28 May 2010. He acknowledged all the problems with it being unlabelled and registering a different date, but was prepared to state that he highly suspects it is the deceased's ECG.[94]

59. Dr Saklani, a Consultant Cardiologist who works privately and also in a public capacity at Fremantle Hospital, noted that there is no way of telling if the unlabelled ECG relates to the deceased or not,[95] although he agreed that the results were not inconsistent with what might have been expected, knowing now about the deceased's condition.[96] Dr Saklani's caution in attributing the unlabelled ECT to the deceased appeared to come in part from Dr Saklani's experience working in the Emergency Department at Fremantle Hospital. He observed there is a lot of loose paper in the emergency room and it would be easy for an ECG to slip into another patient's file, particularly if it is not labelled.[97] Dr Saklani described this as occurring "scarily almost on a day-to-day basis."[98]

60. That is a concerning fact if it is true and would suggest that the Fremantle Hospital Emergency Department should urgently review their practice of managing patient's records in the emergency room. However, I note that the Fremantle Hospital Emergency Department will close on 3 February 2015, so there is little purpose to making a recommendation in that regard.[99]

---

[90] Exhibit 1, Tab 8; Transcript 69.
[91] Exhibit 1, Tab 9 [16].
[92] Transcript 219.
[93] Exhibit 1, Tab 9 [52] – [53]; Transcript 220.
[94] Transcript 89.
[95] Transcript 251.
[96] Transcript 262.
[97] Transcript 251.
[98] Transcript 251.
[99] Letter from Ms Helen McKay, Assistant State Solicitor, to Ms Ellson, 24 November 2014.

61. Dr Mountain, a Specialist in Emergency Medicine with a long interest in pulmonary embolism diagnosis and management, suggested that the context of the ECG trace, unlabelled and not reviewed, and the reported history from the deceased that the results were normal, would make it unsafe to presume that the unlabelled ECG relates to the deceased.[100] He did, however, accept that the results were abnormal and "could be consistent with a heart that's under some sort of distress."[101]

62. If not for the evidence of Nurse van Schalkwyk, who was adamant she would not have failed to follow the procedure of labelling the ECG and checking the date, I would be inclined to make a finding that the unlabelled ECG did relate to the deceased's presentation on 9 May 2010. The likelihood of a correctly labelled and reviewed ECG of the deceased going missing from the notes and at the same time an unlabelled ECG from another patient, who just happens to also be showing right ventricular strain, seems remote. However, in the absence of any ability to conclusively tie the unlabelled ECG to the deceased, weighed against the evidence of Nurse van Schalkwyk about her standard practice, as well as the evidence of Dr Saklani that the misplacing of records is frighteningly regular in the Fremantle Hospital Emergency Department, I am unable to make a finding that the unlabelled ECG was the one taken of the deceased by Nurse van Schalkwyk on 9 May 2010.

63. What can be said conclusively is that the Fremantle Hospital record keeping system failed in relation to the recording of the ECG taken of the deceased that day. Either the ECG labelling and reviewing protocol was followed, and that ECG has been misplaced and this unlabelled one put in its place, or the labelling and reviewing procedures were not followed and an unlabelled and incorrectly dated ECG, that had not been reviewed by a properly qualified doctor, was allowed to be filed in the deceased's medical record. As I have noted above, Fremantle Hospital is closing its emergency department in early 2015. One can only hope that the new Fiona Stanley Hospital Emergency Department will have a better system of medical record keeping in place.

Dr Hinsley

64. After the deceased was seen by Nurse van Schalkwyk and an ECG was performed, the deceased was seen for the first time by an Emergency Department doctor at 5.05 am.[102] The deceased was

[100] Exhibit 1, Tab 15, 6 – 7; Transcript 122.
[101] Transcript 123.
[102] Exhibit 2, Tab 1B; Transcript 28.

seen by Dr Susan Hinsley, a junior registrar undergoing specialist training to become an emergency physician at the time.[103]

65. At the time of the inquest, Dr Hinsley had some limited independent recollection of seeing the deceased on 9 May 2010, but largely relied upon her notes that she wrote at the time,[104] as well as her usual practices. Dr Hinsley made her notes on an Emergency Department Clinical Record form,[105] rather than the green triage assessment form used by the nurses. Dr Hinsley gave evidence that she would read the triage assessment form if it was at hand at the time, but she couldn't recall whether it was at that time.[106] Dr Hinsley did, however, acknowledge in her statement that she must have had access to the triage assessment form at some stage, as she transcribed the observations taken by Nurse Pain and noted the medication that had been given.[107]

66. Dr Hinsley saw the deceased for the first and only time that morning. When Dr Hinsley came to assess the deceased, the deceased was sitting in a cubicle in the company of her mother. She appeared to be sitting comfortably and was not attached to a monitor.[108]

67. The deceased had been triaged into the group of patients that were considered to be likely to be discharged.[109] Dr Hinsley noted the deceased's presenting complaint was left chest pain.[110] She took a history from the deceased before going on to examine her. Dr Hinsley recorded in her notes the following information:

> 28, female, awoke with sharp left chest pain. Unable to breathe easily. Never happened before. Denies abnormal physical activity. No cardiac history. No PE risks. Pain coming from underneath the breast radiating to the left side. Much improved since ibuprofen and paracetamol.

68. The reference to no cardiac history included a reference to family history of ischaemic heart disease, as well as any other risk factors such as smoking or problems with cholesterol.[111]

69. The notation 'No PE risks' referred to pulmonary embolus risks.[112] In that regard, Dr Hinsley's standard practice is to enquire whether the patient:

---

[103] Transcript 28.
[104] Transcript 28.
[105] Exhibit 2, Tab 1B.
[106] Transcript 28.
[107] Exhibit 1, Tab 6 [7].
[108] Exhibit 1, Tab 6 [6].
[109] Exhibit 1, Tab 6 [4] – [5].
[110] Exhibit 2, Tab 1B.
[111] Transcript 30.
[112] Exhibit 1, Tab 6 [8].

- is on any medications;
- has any family history of clotting disorders;
- has been immobile for any reason;
- has any previous history of DVT clots;
- has any known malignancy; and
- has any symptoms that might suggest a pelvic mass or any venous swelling/lower limb swelling/aching.[113]

70. From her appearance she was also clearly not overweight.[114]

71. In relation to the question of whether the deceased was on any medications, Dr Hinsley's practice at the time was to simply ask a question about whether the patient was on any medications, and she would interpret a negative answer to include the oral contraceptive pill.[115] If the answer to all of these questions is negative, Dr Hinsley would conclude that there were no known PE risks present, and she assumes that is what occurred on this occasion.[116]

72. Dr Hinsley also documented that the deceased had no known past medical history, no drug history (again indicating the deceased was not taking any medications)[117] and no known allergies and she noted a brief social history.[118]

73. Dr Hinsley went on to examine the deceased and noted that she was alert and orientated and undistressed at rest. Her heart sounds were normal and her chest was clear.[119] She noted tenderness at the left sternal edge and the 9th and 10th ribs on the left side. She did not appear to be short of breath.[120]

74. Dr Hinsley did not record in her notes that she checked for any lower leg swelling, but she gave evidence that her standard practice is to give the calves a squeeze during the physical examination.[121]

75. Dr Hinsley did not recall seeing any note about an ECG being done at that time, or any ECG trace. She indicated it was possible she had not seen the triage assessment on which that notation was made at the time she saw the deceased.[122] Nurse van Schalkwyk gave evidence that she may have taken the triage assessment and ECG trace away from the deceased's bedside to have it signed at the

[113] Exhibit 1, Tab 6 [10]; Transcript 30.
[114] Exhibit 1, Tab 6 [9].
[115] Exhibit 1, Tab 6 [13].
[116] Exhibit 1, Tab 6 [11] – [12].
[117] Exhibit 1, Tab 6 [15].
[118] Transcript 29; Exhibit 1, Tab 6 [9].
[119] Exhibit 1, Tab 6 [19].
[120] Transcript 40.
[121] Transcript 30.
[122] Transcript 45.

time Dr Hinsley came and examined the deceased, so it is possible that it was not accessible to Dr Hinsley at that time.[123]

76. Dr Hinsley gave evidence that if she had been shown the ECG by a nurse she would have signed it, dated and it and checked the date of the ECG. As it showed tachycardia, she would also have gone to look at the patient, even if it was not her patient.[124] If she had seen the ECG trace on the file without patient identification, she would have asked for it to be repeated as it was unlabelled and the pulse rate did not match the deceased's observations.[125] If she had been aware that an ECG had been done and the trace was not available, she would have wanted to see the trace before discharging the deceased.[126]

77. In the end, the evidence is that for whatever reason, Dr Hinsley was not aware that an ECG had been done (whether or not the actual ECG was the unlabelled ECG) at the time she examined and then subsequently discharged the deceased.

78. Having assessed the deceased, Dr Hinsley attributed the deceased's symptoms to musculoskeletal chest pain based on the normal observations recorded, there being no known cardiac or PE risk factors and the fact that the chest pain was located on the chest wall, not deep in the chest.[127] As a result of making that diagnosis, Dr Hinsley did not order any further investigations or ask for a second set of observations to be taken.

79. She instituted a plan to reassure the deceased, provided over the counter pain relief and told her to avoid strenuous activity until the pain settled. The deceased was to be discharged home with her mother.[128] Although she did not make a note of it, Dr Hinsley is also sure she would have followed her standard practice and told the deceased to follow up any further occurrence of chest pain.[129]

80. In hindsight, it now seems generally accepted by the experts,[130] as well as Dr Hinsley herself,[131] that Dr Hinsley was incorrect in her diagnosis and the deceased was most likely suffering from chronic thromboembolic pulmonary hypertension at that time, having experienced an acute pulmonary embolism earlier that morning. However, this only became apparent two weeks later.[132]

---

[123] Transcript 178 – 179.
[124] Transcript 46.
[125] Transcript 40.
[126] Transcript 45.
[127] Transcript 28 – 29; Exhibit 1, Tab 6 [21].
[128] Transcript 29.
[129] Exhibit 1, Tab 6 [24].
[130] Transcript 88 - 89 (Dr Federman), Transcript 200 - 201 (Dr Gabbay); Transcript 244 – 245 (Dr Saklani), Transcript 276 (Dr Kaufman).
[131] Transcript 54.
[132] For example, see Transcript 116 (Dr Mountain) and Transcript 201 – 202 (Dr Gabbay).

81. On discharge, the deceased was not given a copy of her discharge letter, contrary to the usual hospital practice.[133] Dr Hinsley gave evidence that this was most likely because of the time of day and that Dr Hinsley believed it was a relatively minor condition that did not need any written formal discharge information.[134]

82. As noted above, a copy of the discharge letter was faxed to the deceased's usual general practitioner, Dr Ashford. That letter contained incorrect information, in that it did not mention the ECG and instead indicated nil investigations were ordered. It seems this was because the information about the investigations came from Dr Hinsley, who was not aware of the ECG being performed by Nurse van Schalkwyk.[135]

VISIT TO DR UKALOVICH – 27.5.2010

83. It seems the two weeks after the deceased was discharged from Fremantle Hospital were largely uneventful, although the deceased continued to feel unwell.

84. On Thursday, 27 May 2010 the deceased was exhibiting even more pronounced shortness of breath. However, she resisted family pressure to return to the Fremantle Hospital Emergency Department, apparently on the basis that she had been sent home by them on the previous visit.[136]

85. Instead, the deceased opted on this occasion to seek an opinion from her family's general practitioner, Dr Laurie Ukalovich, at the Kelso Medical Centre in Kardinya.[137] Dr Ukalovich knew the deceased and the deceased's family in a personal capacity as well as being their family doctor, although he did not usually see the deceased as a patient.[138]

86. When the deceased saw Dr Ukalovich on the morning of 27 May 2010 she did not look acutely unwell.[139] Rather, she appeared to him to be well and cheerful.[140] The deceased described to Dr Ukalovich a recent history of around two to three months of having shortness of breath on exertion (especially when dancing), intermittent dizziness and an increased heart rate and hiccups on exertion.[141] She had not experienced any ankle swelling and slept

[133] Exhibit 1, Tab 4A, 2.
[134] Transcript 42.
[135] Transcript 42.
[136] Exhibit 1, Tab 2D, "Overview" Document, 1.
[137] Exhibit 1, Tab 2D, "Overview" Document, 1.
[138] Transcript 290; Exhibit 2, Tab 3B.
[139] Exhibit 1, Tab 3, 1.
[140] Transcript 293.
[141] Transcript 293.

using one pillow (relevant to the issue of shortness of breath).[142] She did not report any chest pain that day.[143]

87. The deceased told Dr Ukalovich about her earlier visits to another general practitioner when she had experienced lethargy and a sore throat. She told him she had blood tests that were normal and was diagnosed with a viral illness. The deceased also told him of her recent visit to Fremantle Hospital, that an ECG was performed and was normal and that she had been diagnosed with muscle spasm.[144]

88. Dr Ukalovich did not take any other detailed history from the deceased about any family history of major illness or medical conditions or any medications she was taking. He accepts this was an oversight.[145]

89. Dr Ukalovich examined the deceased and found her results were essentially normal, including her blood pressure. She did, however, have an elevated resting heart rate of 101 beats per minute.[146] Based upon her symptoms and the history she gave, Dr Ukalovich made a working diagnosis of cardiomyopathy with pericarditis (muscle spasm) caused by the virus she reported to have had earlier in the year.[147] He had a similar patient with a similar presentation diagnosed with that condition in the past, which prompted him to think of it.[148] He did not, on the other hand, have any experience with a patient experiencing chronic pulmonary emboli[149] or acute pulmonary hypertension.[150]

90. To explore his working diagnosis of cardiomyopathy, Dr Ukalovich ordered an echocardiogram and also ordered tests for her thyroid function, creatine kinase, electrolytes and a full blood count.[151]

91. When Dr Ukalovich went to write the referral, the deceased asked about likely timeframes for the investigations to be done. She stated that she was tired of being unwell and wanted the tests done as soon as possible. As a result, Dr Ukalovich wrote a referral to Cardio Vascular Services, as he knew they had a quick turnover there.[152]

---

[142] Transcript 293.
[143] Transcript 297.
[144] Exhibit 1, Tab 3, 1, Transcript 294.
[145] Transcript 298.
[146] Exhibit 1, Tab 3, 1; Transcript 294.
[147] Exhibit 1, Tab 3, 1; Transcript 294.
[148] Transcript 295.
[149] Transcript 298 – 299.
[150] Transcript 312.
[151] Exhibit 1, Tab 3, 1; Transcript 294.
[152] Transcript 295 - 296.

THE ECHOCARDIOGRAM AND DR BUTLER

92. Cardio Vascular Services (CVS) has at least eight different sites in Perth where echocardiography is performed.[153] The deceased booked an appointment and had the test completed that same day at the Leeming rooms of CVS. The deceased's transthoracic echocardiogram was commenced at 12.44 pm and the technician who performed the test submitted the images and a provisional report to be formally reported by a cardiologist at 4.45 pm.[154]

93. The reporting is done at a central site, so a patient can attend any of the eight locations of CVS and the images will be transmitted electronically to the central site for reporting.[155] The cardiologist views the results of the tests undertaken and prepares the formal echocardiography report.[156]

94. Although the deceased's report was not marked as urgent, the deceased's report was picked up by Dr Michelle Butler, a Cardiologist with a sub-specialty in cardiac imaging, at the central site at 5.11 pm. It was not standard practice at that time at CVS to scan the doctor referral forms and the patient questionnaires and Dr Butler was not provided with either of those forms at that time.[157] Therefore, the deceased's clinical details were not available to Dr Butler, other than a small amount of information as follows:

> *Viral illness-since has shortness of breath on exertion and fatigue. Increased heart rate. Left side pleuritic chest pain? Cardio myopathy.*[158]

95. Dr Butler spent 41 minutes reading the results of the deceased's echocardiogram test, finishing her reading at 5.52 pm.[159] At the completion of reading the images, Dr Butler concluded the results of the test were abnormal and significant. An abnormally high pulmonary pressure of 96 millimetres of mercury was recorded (well above the cut-off for severe hypertension in a young person),[160] signifying severe pulmonary hypertension.[161] Some possible diagnoses arising from that finding were chronic thromboembolic pulmonary disease, pulmonary disease and pulmonary artery hypertension.[162]

---

[153] Transcript 320.
[154] Exhibit 1, Tab 5, Letter and Statement [19] – [20].
[155] Transcript 320.
[156] Exhibit 1, Tab 5, Statement [24].
[157] Transcript 320, 322; Exhibit 1, Tab 5, Statement [31], [33].
[158] Exhibit 1, Tab 5, Statement [45].
[159] Exhibit 1, Tab 5, Letter.
[160] Transcript 137.
[161] Exhibit 1, Tab 5, Statement [47].
[162] Exhibit 2, Tab 2C.

96. While none of the diseases identified by Dr Butler as possible diagnoses were necessarily immediately life-threatening, Dr Butler explained in evidence that severe pulmonary hypertension has a very poor prognosis and anyone with severe pulmonary hypertension has the possibility of having a further progression of their disease, resulting in collapse or a significant arrhythmia, leading to collapse. It is, therefore, a life-threatening condition, but it is difficult to predict from the echocardiogram alone when an event may occur.[163] Accordingly, Dr Butler indicated it is important to know how clinically well the patient is at the time.[164]

97. After preparing her report, Dr Butler wanted to gain an insight into what was the presenting problem of the patient and her symptoms and to relay the abnormality found on the echocardiogram to Dr Ukalovich.

98. Dr Butler attempted to telephone Dr Ukalovich's rooms that evening. However, given it was after hours, there was no answer at the medical practice and no alternative contact number was provided.[165] Dr Butler left a message for Dr Ukalovich to call her.[166] Dr Butler did not finalise her report, preferring to leave it open to prompt her to take some further action in relation to it the following day.[167]

EVENTS ON 28 MAY 2010

Conversation between Dr Butler and Dr Ukalovich

99. Dr Ukalovich received the message to call Dr Butler when he returned to work the following morning. He returned the call at around 8.00 am. Dr Butler was not yet at work so Dr Ukalovich left a message in return. They finally spoke mid-morning when Dr Butler rang Dr Ukalovich.

100. Dr Ukalovich recalls that he told Dr Butler of the deceased's symptoms, essentially as he had written in the referral, and queried whether there was cardiomyopathy, as per his working diagnosis.[168] Dr Butler told him that this wasn't the diagnosis, but instead she had found severe pulmonary hypertension. Dr Butler explained the possible diagnoses were chronic thromboembolic pulmonary disease, pulmonary disease and pulmonary artery hypertension.[169]

---

[163] Transcript 328 – 329.
[164] Transcript 325.
[165] Exhibit 1, Tab 5, Letter.
[166] Transcript 324.
[167] Exhibit 1, Tab 5, Statement [55].
[168] Transcript 301.
[169] Transcript 301.

Dr Ukalovich understood all of those diagnoses to be chronic conditions, rather than acute.[170] Dr Butler suggested that further investigations needed to be undertaken to identify the cause of the pulmonary hypertension and the most appropriate specialist was Dr Eli Gabbay. He understood that Dr Butler was going to fax a copy of her report to Dr Gabbay.[171] Dr Ukalovich's impression was that the referral to Dr Gabbay needed to be done relatively soon, but was not urgent.[172] He agreed that the term used by Dr Butler was "prompt" review.[173]

101. Dr Ukalovich could not recall if he had a specific discussion with Dr Butler about the deceased's sinus tachycardia, but he didn't think so, and certainly did not think that the heart rate was something that required further checking after their telephone conversation.[174]

102. Dr Butler did not have a clear independent recollection of her conversation with Dr Ukalovich but she relied upon her report and her usual practice.[175]

103. Dr Butler could not recall whether she discussed the deceased's sinus tachycardia with Dr Ukalovich.[176] However, in her evidence she indicated that for someone with those abnormal echocardiogram findings, it wouldn't be uncommon for her to be tachycardic and it wouldn't necessarily require specific further investigation.[177]

104. When Dr Butler read the echocardiogram, she didn't believe there were any acute features on the echo, and she maintains that position.[178] Working back from her report, Dr Butler believes she thought this was a chronic condition, present for at least a couple of months, if not longer.[179] However, Dr Butler indicated in her evidence that she considered the clinical status of the deceased was important in deciding how best to proceed after reading the echocardiographic images.[180] As noted above, Dr Ukalovich's observation was that the deceased appeared clinically well, which appears to have reinforced the conclusion it was a chronic condition.

[170] Transcript 302.
[171] Transcript 303.
[172] Transcript 302.
[173] Transcript 310.
[174] Transcript 305.
[175] Exhibit 1, Tab 5, Statement [57]; Transcript 324.
[176] Transcript 326.
[177] Transcript 327, 329.
[178] Transcript 331, 337.
[179] Transcript 334.
[180] Transcript 329.

105. Dr Butler recommended prompt review, by which she envisaged further investigations would be undertaken within a few days.[181] She did not consider that any further investigations were required that day or on an "urgent" basis.[182]

106. After the telephone conversation with Dr Ukalovich, Dr Butler finalised her report at 10.25 am and faxed, emailed and posted a copy of the report to Dr Ukalovich. As the recommendation was to seek a prompt appointment with Dr Gabbay, Dr Butler arranged for a copy of the report to also be faxed to Dr Gabbay's rooms.[183]

107. Dr Ukalovich proceeded to attempt to call Dr Gabbay a number of times that morning. He rang four or five times without success.[184] Dr Ukalovich usually finished work at 1.30 pm on Fridays. He had not been successful in contacting Dr Gabbay at the time he was due to leave work. Just prior to leaving, he considered calling the deceased to let her know the results of the echocardiogram, as he knew she was tired of feeling unwell. However, he reconsidered because he was concerned that the deceased would ask him questions that he might not be able to answer and he wanted to be able to give her all the information she required. Accordingly, he decided to wait until he had spoken to Dr Gabbay on Monday before he called the deceased.[185]

108. During his evidence, Dr Ukalovich expressed his great regret that he made the decision not to call the deceased. In hindsight, he wishes he had done so that day, if only because it may have led her to tell him that her symptoms had worsened and perhaps prompted different advice.[186] However, at the time he did not realise she was in any danger.[187]

109. Dr Butler indicated in her evidence that if she had been advised by Dr Ukalovich on the Friday afternoon that he had been unable to make contact with Dr Gabbay, she most likely would have attempted to speak to him herself. If she spoke to Dr Gabbay, she would have advised him that the patient looked reasonably well according to Dr Ukalovich and then queried where they went from there.[188] She would not have been likely to contact the deceased directly herself, although she would have considered it if Dr Ukalovich had expressed concern about the deceased's clinical status and asked her to do so.[189]

---

[181] Exhibit 1, Tab 5, Statement [49]; Transcript 326, 334.
[182] Exhibit 1, Tab 5, Statement [50].
[183] Exhibit 1, Tab 5, Letter.
[184] Transcript 303.
[185] Transcript 306.
[186] Transcript 306 - 307.
[187] Transcript 307.
[188] Transcript 334 – 335.
[189] Transcript 330.

110. So it was left on Friday, 28 May 2010 on the basis that Dr Butler understood Dr Ukalovich would make arrangements for the deceased to see Dr Gabbay over the next few days and Dr Ukalovich left work with the intention to do so on Monday, 31 May 2010 when he returned to work. It is apparent that neither doctor had a sense of urgency about the matter at that time. Sadly, later events have now shown that their belief that the investigations could wait a few days without any ill-effect to the deceased was erroneous.

Fremantle Hospital Emergency Department

111. On the afternoon of 28 May 2010, the deceased became acutely unwell. She called her parents and told them that she could not breathe. The deceased's father drove her to Fremantle Hospital. During the short drive from her home in Hamilton Hill to Fremantle the deceased suddenly collapsed.[190]

112. The deceased arrived at Fremantle Hospital at 5.24 pm. She was in cardiac arrest and was immediately given cardiopulmonary resuscitation and intubated. After 58 minutes of CPR, a femoral pulse was detected. She was admitted to the Intensive Care Unit for further management.[191]

113. An urgent CT pulmonary angiogram (CTPA) was performed, which showed a massive pulmonary embolus with pulmonary haemorrhage and infarction. A brain CT scan showed a loss of frontal grey/white differentiation.[192]

114. The deceased's family were told that evening that the lengthy period of resuscitation meant there was a very real danger the deceased had sustained a brain injury. The plan at that time was to give the deceased's brain the best chance of recovery by resting, cooling and keeping her blood pressure and oxygen high. After 24 hours, they would try to wake her but they could not predict whether she would recover.[193]

115. A repeat CT brain scan performed on 31 May 2010 showed appearances consistent with 'severe diffuse hypoxic brain injury'[194] and brain stem testing confirmed brain death.[195] At her family's request the deceased remained ventilated until 1 June 2010. At 11.00 am, the ventilator was turned off and she died in the presence of her family.[196]

---

[190] Exhibit 1, Tab 2, Letter to Coroner's Court, 13 October 2010, and "Overview" Document.
[191] Exhibit 2, Tab 1J & 1K.
[192] Exhibit 2, Tab 1M.
[193] Exhibit 2, Tab 1L.
[194] Exhibit 2, Tab 1T.
[195] Exhibit 2, Tab 1W.
[196] Exhibit 2, Tab 1X.

CAUSE OF DEATH AND MANNER OF DEATH

116. The deceased's death was certified by a doctor at Fremantle Hospital. The cause of death was entered as hypoxic brain injury with antecedent causes of cardiac arrest arising from the underlying condition of pulmonary embolus.[197]

117. No hospital post-mortem was performed. As noted at the start of this finding, the coroner was not notified of the death at that time and hence there was no opportunity for a coroner to order a post-mortem examination.

118. During his evidence at the inquest, Dr Gabbay was asked to give his opinion on the deceased's cause of death. Dr Gabbay stated that in his view, the deceased died of hypoxic brain injury consequent upon a cardiac arrest and the cardiac arrest was as a result of acute heart failure on top of chronic pulmonary hypertension. The pulmonary hypertension was due to chronic thromboembolic disease, most likely due to the fact the deceased had a Factor V Leiden mutation and was taking the Yasmin contraceptive pill.[198]

119. Dr Gabbay's opinion accords with the cause of death entered at Fremantle Hospital.

120. I accept Dr Gabbay's opinion and find that the deceased died as a result of hypoxic brain injury following a cardiac arrest in association with pulmonary hypertension.

121. It follows from the cause of death that the manner of death was by way of natural causes.

DR HINSLEY'S MANAGEMENT OF THE DECEASED

122. Evidence was given by Dr Dey, an emergency medicine specialist, that chest pain is a common reason for Emergency Department presentations, even in young people.[199] Chest pain has a broad differential diagnosis, and can include serious life-threatening conditions such as acute coronary syndrome, aortic dissection and pulmonary embolism.[200] However, in Dr Dey's experience, musculoskeletal pain is probably the most common cause for emergency chest pain presentations. It is also the most common discharge diagnosis, on the basis that other causes such as acute

[197] Exhibit 2, Tab 1A.
[198] Transcript 209 – 210.
[199] Exhibit 1, Tab 8 [10].
[200] Transcript 62, 116.

coronary syndrome, pneumonia and pulmonary embolism have been excluded.[201]

123. Pulmonary embolism, on the other hand, is relatively rare.[202] Dr Mountain, who works in the Emergency Department at Sir Charles Gairdner Hospital, estimates 1 – 2% of the people who present there with chest pain have pulmonary embolism.[203] Dr Gabbay indicated that on his understanding, there is an accepted incidence of approximately 1500 patients with pulmonary embolism in Perth per year overall, only some of whom may present to an emergency department.[204]

124. Despite its rarity, if a patient presents with pulmonary embolism in its classic form (with a patient who is breathless, breathing rapidly or coughing up blood), then it is relatively easy to diagnose.[205] However, pulmonary embolism can often present atypically, with or without breathlessness and with or without chest pain. In those cases, as a rare disorder without a typical presentation, it can present a challenge to clinicians.[206]

125. To assist doctors with the challenge of diagnosing and managing pulmonary embolism, clinical decision or prediction rules have been developed. They are referred to as the Wells and PERC (Pulmonary Embolism Rule-out) criteria. Their purpose is to assist a doctor to determine the pre-test probability of pulmonary embolism; that is, whether there is a low, medium or high likelihood of pulmonary embolism.[207]

126. The Wells criteria includes a subjective element involving the clinician's own view as to the likely diagnosis, whereas the PERC rule contains only objective items.[208] According to her observations and medical history that day, the deceased's Wells rating was in the low probability category.[209]

127. Given her low probability, the next step was to consider whether it was appropriate to perform a D-dimer test (which is a simple blood test which looks specifically at the breakdown products of clot in the body).[210] Historically, all patients were given a D-dimer test or some other investigative test following along this diagnostic pathway. However, the PERC criteria were developed to take low Wells pre-test probability patients and determine which of those patients did not

[201] Transcript 57.
[202] Transcript 57.
[203] Transcript 116.
[204] Transcript 194 – 195.
[205] Transcript 58.
[206] Transcript 58; Exhibit 1, Tab 8 [10].
[207] Transcript 59.
[208] Exhibit 2, Tab 6A, 2 and Tab 6H, 448.
[209] Transcript 117.
[210] Transcript 244.

require any further tests, such as a D-dimer.[211] The reason for this is apparently because of the problematic high false-positive rate of D-dimers.[212]

128. The D-dimer test is a useful test if the test result is negative, as in those cases thromboembolism can effectively be ruled out in all but the very high risk patients.[213] In the alternative, a very raised D-dimer will point strongly towards the existence of a clot, although other possible causes such as severe infection or cancer are also possible.[214] However, there is a known problem with false positives from D-dimer tests and a false positive may necessitate exposing patients to further, potentially harmful tests such as a Computed Tomography Pulmonary Angiography (CTPA), which involves exposure to radiation and can also induce a reaction in some patients.[215]

129. The PERC criteria allows doctors to identify those patients whose risk of pulmonary embolism is so low (approximately 2%) that pulmonary embolism can effectively be excluded clinically without a D-dimer, thereby avoiding the possibility of a false positive result and further unnecessary and potentially harmful investigations.[216]

130. Dr Hinsley accepted during her evidence that when she applied the Wells criteria to the deceased, she misinterpreted the deceased's low probability of pulmonary embolism, according to that criteria, as indicating the deceased had no risk of pulmonary embolism.[217] In fact, her risk remained approximately 10% according to Dr Gabbay.[218] Dr Hinsley also accepted that she ought to have documented her Wells score in the medical notes.[219]

131. At that time, using the PERC criteria was not part of Dr Hinsley's standardised practice, although she gave evidence that it has now become so.[220] It perhaps makes little difference as in any event, Dr Hinsley's limited questioning of the deceased about her medication did not elicit from the deceased that she took the oral contraceptive pill. Working on the premise that the deceased was not taking the oral contraceptive pill, she did not meet any of the PERC criteria and it was open to exclude pulmonary embolism without performing a D-dimer.[221]

---

[211] Transcript 66.
[212] Transcript 66, 78.
[213] Transcript 119.
[214] Transcript 120.
[215] Transcript 66 – 67; Exhibit 2, Tab 6A, 3 - 6.
[216] Transcript 67; Exhibit 1, Tab 4, Pulmonary Embolism Diagnostic Pathway.
[217] Transcript 38.
[218] Transcript 211.
[219] Transcript 38.
[220] Transcript 36.
[221] Exhibit 1, Tab 4, Pulmonary Embolism Diagnostic Pathway.

132. Working solely on the information that she obtained in her examination and assessment of the deceased, without knowledge of the deceased's use of the oral contraceptive pill, the experts who gave evidence at the inquest generally considered it was not unreasonable for Dr Hinsley to make a diagnosis of musculoskeletal pain.[222]

133. However, more than one doctor indicated that he would not have thought that diagnosis would have been high on his list of differential diagnoses, given the history of pain severe enough to wake the deceased in the night in the absence of a history of trauma in the recent past.[223] That would be particularly so for an otherwise apparently fit and healthy young woman.[224] The fact that it was pleuritic chest pain, worse on breathing, also should have raised suspicion, according to Dr Federman.[225]

134. However, accepting that on the basis of the information she had elicited, Dr Hinsley's diagnosis of musculoskeletal pain could be considered reasonable, the criticism levelled at her is that she did not do enough to rule out more serious pathology before settling for this relatively benign cause for chest pain.[226]

135. Most significantly, Dr Hinsley ought to have questioned the deceased more closely about her medications to elicit the information that the deceased was taking the oral contraceptive pill. This was the conclusion of the Performance and Professional Standards Panel of the Medical Board of Australia for AHPRA, who conducted a hearing into Dr Hinsley's management of the deceased's care on 8 January 2014. The Panel took into account the evidence of Dr Hinsley and the expert opinion of Dr Mountain in making a finding that Dr Hinsley behaved in a way that constituted unsatisfactory professional performance in that she failed to conduct an adequate assessment of the deceased by excluding a diagnosis of pulmonary embolism without asking the deceased about her history regarding the oral contraceptive pill.[227]

136. To her credit, Dr Hinsley acknowledged at the inquest that, in hindsight, she should have taken a specific oral contraceptive pill history from the deceased.[228] She gave evidence at the inquest and the abovementioned Panel hearing that since this case, she has changed her practice and now takes a complete medical history, including specifically asking any female of reproductive age if she is on the contraceptive pill or any other forms of contraception, as well

[222] For example, Transcript 57 (Dr Dey).
[223] Transcript 65 (Dr Dey); 243 (Dr Saklani).
[224] Transcript 254.
[225] Transcript 88.
[226] Transcript 243.
[227] Exhibit 1, Tab 6A [25].
[228] Transcript 33.

as whether they should be on any prescribed medications they are not taking and are taking any non-prescribed medications or herbal remedies.[229]

137. Dr Hinsley also acknowledged that:

- in hindsight, it would have been best to order an ECG on 9 May 2010 and indicated she has also changed her practice in that regard in relation to any patient with chest pain, for whom she always now will order an ECG to help establish or confirm a diagnosis;[230]
- her notes of her assessment of the deceased, in particular the Wells criteria assessment, could have been better, and she has now changed her practice in that regard, and encourages more junior practitioners to follow her example;[231] and
- she should have had a higher suspicion for a risk of pulmonary embolism at the time and her index of suspicion for pulmonary embolism has greatly increased as a result of these events.[232]

138. It was also suggested by Dr Gabbay that other matters that ought to have been investigated further included a second set of observations, to see whether the low systemic blood pressure was continuous,[233] a chest x-ray and a specific question about whether there had been a reduction in exercise tolerance.[234] Dr Blythe agreed that a second set of observations may have been useful in the consideration of the diagnosis and it would be his recommended practice.[235]

139. Accepting that the deceased was suffering from acute pulmonary embolism on top of chronic thromboembolic pulmonary hypertension on 9 May 2010, if Dr Hinsley had conducted these suggested further investigations, in particular if she had ordered either a D-dimer test or an ECG, the results of those tests were likely to have prompted further investigations that would have assisted in diagnosing her condition.[236] Certainly either of those test results would have pointed away from Dr Hinsley's working diagnosis of musculoskeletal pain, which is in effect a diagnosis of exclusion.[237]

140. If there had been a more thorough investigation of the deceased on 9 May 2010 and her condition had been diagnosed, the generally

[229] Transcript 31, 37.
[230] Transcript 34.
[231] Transcript 38.
[232] Transcript 43; Exhibit 1, Tab 6 [36] (together with the correction noted at Transcript 27).
[233] Transcript 210.
[234] Transcript 223.
[235] Transcript 106.
[236] Transcript 243 - 244.
[237] Transcript 243.

accepted opinion of the experts was that, although she was facing an uncertain future with prolonged medical therapy,[238] doctors would have been able to initiate appropriate therapies so that the acute right heart failure decompensation did not occur. This would have most likely saved her life.[239] There is no doubt that the staff of Fremantle Hospital generally, and Dr Hinsley in particular, regrets missing the opportunity to diagnose the deceased that day.

141. As I noted earlier, AHPRA has already finalised its proceedings in relation to an allegation that Dr Hinsley behaved in a way that constituted unsatisfactory professional performance in relation to aspects of her care of the deceased. Dr Hinsley's Panel found that one aspect of her conduct constituted unsatisfactory professional performance, as noted earlier, but decided not to impose a penalty.[240] Dr Hinsley's remorse and insight after the event, and her willingness to modify her practice, were taken into account by the Panel in deciding to take no action against her.[241]

STANDARD OF CARE PROVIDED BY DR UKALOVICH AND DR BUTLER

142. When the deceased began experiencing shortness of breath again on 27 May 2010, she was understandably reluctant to return to Fremantle Hospital, given she had been reassured that her condition was not serious on the last occasion and discharged home with no further investigation suggested.

143. When the deceased saw Dr Ukalovich that day, she conveyed some of that reassurance to Dr Ukalovich, including her belief, from what she had been told, that the ECG result had been normal.[242] Dr Ukalovich was also reassured by the fact that the deceased had walked in on her own and did not look acutely unwell.[243]

144. Dr Gabbay and Dr Federman explained at the inquest that, unfortunately, it is the case that a person with chronic pulmonary hypertension can look deceptively well, even though they are extremely sick. This is especially the case with young women.[244] So in this case, as the deceased was otherwise fit and well, her heart was able to compensate for a long time and didn't appear particularly unwell, even though she was, by that time acutely decompensating and acutely unwell.[245]

---

[238] Transcript 205.
[239] Transcript 205, 254.
[240] Email to Counsel Assisting 1 December 2014; Exhibit 1, Tab 6A.
[241] Exhibit 1, Tab 6.
[242] Transcript 297.
[243] Transcript 297.
[244] Transcript 208.
[245] Transcript 227.

145. As it is an uncommon condition, Dr Ukalovich, like most GPs, had no experience with chronic pulmonary hypertension.[246] He did, however, have experience with another patient with a similar history and symptoms, who had been diagnosed with viral cardiomyopathy.[247] Dr Ukalovich was rightly concerned about the deceased's symptom of breathlessness and thought it was a sign of her heart failing,[248] but incorrectly attributed it to this other condition. Dr Hockings and Dr Gabbay gave evidence that viral cardiomyopathy with pericarditis was a reasonable diagnosis in the circumstances.[249] Although there is some suggestion that Dr Ukalovich could have been more thorough in his taking of a medical history from the deceased,[250] it does not seem that it would have altered his provisional diagnosis.[251]

146. Working on the basis of his provisional diagnosis, which was not a condition requiring urgent treatment,[252] Dr Ukalovich ordered an echocardiogram. At the deceased's request he referred her to CVS for the test as they were likely to be able to complete the test more quickly.

147. All of this conduct appears to have been reasonable in the known circumstances at the time.

148. The deceased went to CVS that day and was dealt with promptly. The provisional report was ready to be read by 4.45 pm and Dr Butler assessed the images and prepared a draft report that evening. That timeframe was described by Dr Gabbay as "very good service across the board."[253]

149. Dr Butler's opinion, after reading the images, was that the results were abnormal, showing severe pulmonary hypertension. She interpreted the results as showing chronic right-heart overload. The general opinion of the experts called at the inquest was that Dr Butler's conclusion was essentially correct. The main area of dispute centred upon whether the findings were consistent solely with a chronic condition, or rather showed an acute event on top of a chronic event.[254] The significance of the difference lies in the urgency with which the deceased required treatment.

150. It is apparent that Dr Butler viewed the results as serious and properly attempted to contact Dr Ukalovich that evening to convey

[246] Transcript 169, 227, 311 - 312.
[247] Transcript 295.
[248] Transcript 298 - 299.
[249] Transcript 164, 169; Exhibit 1, Tab 9 [18].
[250] Exhibit 1, Tab 12, 4.
[251] Transcript 312 - 313.
[252] Transcript 158 - 159.
[253] Transcript 233.
[254] Exhibit 9.

that information to him and seek some information about the deceased's clinical status.[255] When she was unable to contact Dr Ukalovich, Dr Butler did not attempt to call the deceased directly. She gave evidence that it would be unusual for her to do so, other than in circumstances where she thought the patient had a life-threatening condition.[256] Although Dr Butler accepted that severe pulmonary hypertension can be a life-threatening condition,[257] she considered it important to know the deceased's clinical status to assess how likely it was that the deceased was critically unwell and whether her disease would progress rapidly.[258]

151. Dr Federman considered it was reasonable, given the findings suggested a more chronic process involved, to wait to speak to Dr Ukalovich rather than trying to call the deceased directly.[259]

152. Dr Playford, on the other hand, was of the opinion the results showed evidence of an acute event shortly before the echocardiogram was performed, which was consistent with the deceased's reported increased breathlessness earlier that day, although he agreed there were chronic changes present also.[260] In his view, the echocardiogram showed an acutely overloaded right heart.[261] Such a finding was a "call to arms"[262] to get the person in to hospital quickly,[263] and his personal practice in such a case would be to call the person personally and get them to come into hospital that night.[264] However, he did not consider it was unreasonable for Dr Butler to choose not to call the deceased in the circumstances, provided she took action the following day.[265]

153. Dr Gabbay gave evidence that on reading the echocardiogram alone, an urgent referral that night was not absolutely indicated, although an urgent referral within a few days certainly was. However, given it was a de novo (newly diagnosed and not expected) finding of serious cardiac illness, in his view it would have been preferable for CVS to have a protocol in place for a technician to advise a cardiologist immediately, preferably before the patient left the laboratory where the echocardiogram was performed, so that the cardiologist could make an assessment and consider directing the patient to a coronary care unit or emergency department.[266] At the inquest, Dr Gabbay acknowledged that this might not always be possible or

[255] Transcript 324.
[256] Transcript 330.
[257] Transcript 329.
[258] Transcript 325 - 326.
[259] Exhibit 1, Tab 13B, 6; Transcript 102.
[260] Transcript 135 – 139.
[261] Transcript 139.
[262] Transcript 142 - 143.
[263] Transcript 142 – 143, 146 - 147.
[264] Transcript 150.
[265] Transcript 150.
[266] Exhibit 1, Tab 9 [60].

practical, but still felt that in cases of severely abnormal echocardiograms where the result was unexpected, extra caution should be exercised.[267]

154. Certainly, Dr Gabbay's own response upon seeing the report on the Monday was to call Dr Ukalovich immediately, intending to ask Dr Ukalovich to call the deceased, or call her himself if necessary, to tell her to come to the Emergency Department of Royal Perth Hospital immediately. Sadly, it was too late by this time.[268]

155. Dr Hockings, a very experienced cardiologist, gave evidence that if he had received a report on a patient with that pulmonary pressure he would have been concerned and would have admitted the patient to hospital.[269] However, he also acknowledged that Dr Butler's approach in contacting Dr Ukalovich to find out the clinical situation was also appropriate in the circumstances.[270]

156. Dr Saklani, a cardiologist and an electrophysiologist, believes that he would have acted in a very similar way to Dr Butler in terms of trying to contact Dr Ukalovich and her attempts to alert him were appropriate. He did not think that he would necessarily have called the deceased directly and asked her to go to the nearest emergency room.[271]

157. However, Dr Saklani differed from Dr Butler in his focus upon the resting tachycardia, which was at times getting up to 112 beats per minute. He considered that to be a concerning feature and something he would have raised with Dr Ukalovich and suggested that if the deceased had a persistent tachycardia she needed to go to hospital.[272] Dr Butler's evidence was that with the deceased's pulmonary artery pressure she would be surprised if the person was not tachycardic, so it did not cause her specific concern and she did not raise it with Dr Ukalovich.[273]

158. As I noted at the start of this finding, AHPRA has already finalised their proceedings in relation to allegations that Dr Ukalovich and Dr Butler each behaved in a way that constituted unsatisfactory professional performance in relation to aspects of their care of the deceased. Differently constituted Performance and Professional Standards Panels considered each doctor's conduct (although the Chair was the same). Dr Ukalovich's Panel found that the allegation that he had behaved in a way that constituted unsatisfactory professional performance had been substantiated but given his

[267] Transcript 216.
[268] Transcript 207.
[269] Transcript 165.
[270] Transcript 166.
[271] Transcript 252, 255.
[272] Transcript 256 – 257, 263.
[273] Transcript 327, 329.

obvious remorse, unblemished professional career and the unpredictable nature of the case, elected to only caution him.[274] In relation to Dr Butler, the Panel found that Dr Butler had no case to answer and no further action was taken.[275]

159. I acknowledge the submission from Dr Ukalovich's counsel that there is a conflict between the findings of Dr Butler's Panel on 13 November 2013 that:

- there was no evidence at the time Dr Butler reviewed the echocardiogram that the deceased was acutely ill or required urgent action;
- the findings of the echocardiogram did not suggest that an immediate presentation to hospital was required; and
- even in hindsight, the fatal and tragic outcome of the deceased suffering a sudden massive pulmonary embolism could not have been predicted;

and the findings of Dr Ukalovich's Panel three months earlier on 23 August 2013 in relation to his failure to urgently refer the deceased to an alternative specialist or hospital after he was unable to contact Dr Gabbay on the Friday.[276]

160. Dr Butler told Dr Ukalovich that 'prompt review' was required, by which she meant within days. At the time, she did not think that the deceased's condition would be likely to seriously deteriorate over the next few days, given her belief it was a chronic rather than acute condition and her understanding that the deceased was clinically stable.[277] Dr Butler did not, therefore, convey a sense of immediacy to Dr Ukalovich, as in her opinion it did not require immediate or urgent attention, although she was expecting Dr Ukalovich would contact Dr Gabbay on the Friday.[278] In those circumstances, to find that Dr Ukalovich ought to have urgently made a referral to an alternative specialist or hospital when he could not immediately contact Dr Gabbay does seem to me to be unduly harsh. He was entitled to take guidance from the Consultant Cardiologist as to the urgency of the matter, unless some information was available to him that suggested otherwise.

161. Dr Gabbay expressed his view that referrals should not be directed to a specific medical practitioner, but rather a recommendation that a doctor with experience in the relevant area (in this case pulmonary hypertension) be contacted. As Dr Gabbay noted, he might well have been on leave at the time, although in this case he was not and

[274] Exhibit 1, Tab 3A.
[275] Exhibit 1, Tab 5B, Letter 10 December 2013.
[276] Transcript 350 – 351.
[277] Transcript 326, 334.
[278] Transcript 307, 334 - 335.

the problem with contacting him appears to have arisen from a wrong number.[279] Dr Gabbay speculated that this may have contributed to delays in referring the deceased to a specialist.[280] This seems to be the case and I certainly endorse Dr Gabbay's suggestion, without taking it to the level of making a recommendation.

162. In my view, the only real criticism that can be levelled at Dr Ukalovich is that he ought to have called the deceased on the Friday to advise her of the abnormal echocardiogram results and that his provisional diagnosis was incorrect, to enquire about her current clinical status and to advise her to go immediately to hospital if she felt unwell. This formed part of the Panel's decision[281] and was reiterated by Dr Hockings in his evidence the inquest.[282]

163. Dr Ukalovich acknowledged during the inquest his great regret that he did not do so and I accept he is truly and deeply remorseful.

164. The Panel found that Dr Butler had no case to answer in relation to the allegations against her. Consistently with that decision, the general opinion of the experts at the inquest was that it was difficult for Dr Butler, dealing with the matter in isolation solely on the basis of the echocardiogram results, to have predicted the deceased's sudden collapse and that the steps she took on 27 and 28 May 2010 were not unreasonable in the circumstances.

165. There is no doubt Dr Butler could have done more and taken the more cautious approach of recommending the deceased go to hospital immediately, even calling her directly if necessary. With the benefit of hindsight, that would have been the best course to take. Even without the benefit of hindsight, as soon as Dr Gabbay saw the echocardiogram report he appreciated that there was an immediacy required, although I acknowledge his different area of expertise and that he saw the report on the Monday.[283]

166. On the basis of the evidence before me of the deceased's clinical presentation and the expert opinions that her results showed a chronic condition without any conclusive signs of an acute event, I am not able to make an adverse finding against Dr Butler for failing to predict that the deceased's heart would fail that evening.

167. Dr Butler gave evidence that her threshold has certainly reduced since this event, and she will now more often consider contacting a

[279] Transcript 226, 233; Exhibit 1, Tab 3A.
[280] Transcript 226.
[281] Exhibit 1, Tab 3A [57].
[282] Transcript 163.
[283] Exhibit 1, Tab 9 [7].

patient directly when the referring doctor is not available.[284] This is a positive sign that Dr Butler is moving towards a more cautious approach in her own practice and hopefully others will follow her lead. As noted below, Dr Butler has also been instrumental in recommending changes to CVS practices, to assist in better reporting of results, taking into account the clinical context as well as the test findings.

168. It is also important to note that the evidence of the various experts was that the time to diagnose and treat the deceased effectively was on 9 May 2010. Based upon what occurred on the evening of 28 May 2010, none of the experts were prepared to say that the deceased could definitely have been saved if she had been admitted to hospital on 27 or 28 May 2010. Certainly, she would have been in a monitored environment and there were treatments such as thrombolysis that could have been explored,[285] but the evidence suggests she had severe pulmonary hypertension at that time and only a small clot was required to destabilise the situation and cause the deceased's heart to fail.[286] So even if the deceased had been admitted to hospital on 27 May 2010, Dr Playford thought it "might not have prevented a fatal outcome."[287] Dr Gabbay, who has given considerable thought to what might have happened if he had become aware of the report on the Friday rather than the Monday, went so far as to say that he did not believe at that late stage that the outcome would have been different.[288]

169. Therefore, even if Dr Ukalovich and Dr Butler had made different choices, on the evidence it is unlikely that the deceased's life would have been saved at that late stage.

170. Evidence was given at the inquest that Dr Ukalovich, who had a personal relationship with the deceased and her family, was devastated by her death. At that time he was an experienced general practitioner of many years' standing but he lost confidence in his ability to treat patients and eventually voluntarily ceased to practice medicine in May of 2012. He appreciates that, no matter how profound the effect upon his life, it is not as great as the profound effect upon the deceased's family, who lost a wife, a daughter and a sister and he expressed his sympathy to them at the inquest.[289] For what it is worth, it does not seem to me from what I have heard from the deceased's family that they would wish Dr Ukalovich to give up his medical practice and it does not seem to me that his conduct in this case would warrant such a drastic step.

[284] Transcript 331.
[285] Transcript 129.
[286] Transcript 129.
[287] Transcript 143.
[288] Transcript 235.
[289] Transcript 312, 351.

I can only hope that with the resolution of this final inquiry, Dr Ukalovich may reflect upon all the evidence that has been given by the experts in this matter, and the generous spirit in which the deceased's family have approached the inquest with their hope that lives are saved in the future, and perhaps regain some of his former self-belief. The community is best served by having as many experienced general practitioners practising as possible.

COMMENTS IN RELATION TO PUBLIC HEALTH GENERALLY

171. The evidence discloses that there were omissions and errors in the deceased's care that could have been prevented and might have affected the tragic outcome. It is, understandably, the concern of the deceased's family that lessons be learnt from this case so that similar failures and errors are not repeated. I share that concern.

172. More than one expert at the inquest spoke of the difficulties faced by medical staff working in the emergency department, which is a busy and stressful working environment, particularly for junior doctors. It may explain some of what occurred on 9 May 2010. The deceased's family noted this also in their submission at the conclusion of the inquest.[290]

173. It is the responsibility of the hospital administration to do its best to train their staff and create a work environment that assists them to provide the best medical care possible to all patients, even under stressful conditions. The procedural failures at Fremantle Hospital have been acknowledged by the Executive Director of Fremantle Hospital, Dr Blythe, and he advised that steps have been put in place to attempt to avoid them being repeated.

174. Dr Blythe gave evidence that better review processes are being instituted to investigate all clinical incidents, including sentinel events, at a senior level.[291] The importance of labelling all ECGs has also been reinforced with staff, particularly in the Emergency Department, and a nurse is obliged to label any unlabelled ECG before giving it to a doctor for review, and doctors have been instructed not to accept an ECG for review unless it is labelled.[292]

175. As for the concerns in relation to the portable ECG monitors themselves, and the evidence of repeated documentation filing errors, as mentioned above, although the issues are of concern, I do not propose to make any recommendation in relation to those, given

[290] Transcript 339 – 340.
[291] Transcript 113.
[292] Transcript 108; Exhibit 1, Tab 4B.

I only have evidence that those issues relate to the Fremantle Hospital Emergency Department and I am informed that the department is closing next month. I very much hope that better filing systems are in place in other Emergency Departments but I do not have evidence before me in that regard.

176. In relation to the difficulty of diagnosing pulmonary embolism, the hospital has implemented its own Diagnostic Pathway for Pulmonary Embolism, which expressly notes that the assessment may require specific enquiry about the oral contraceptive pill.[293] Pulmonary Embolism has also been targeted in education sessions for all medical staff within the hospital and is a specific subject addressed for all Emergency Department staff on a quarterly basis.[294] Dr Hinsley herself participated in some of those education sessions and learnt much in the process, which she now passes on to the junior doctors in the hospital where she currently works.[295]

177. Dr Gabbay emphasised in his evidence that breathlessness, fatigue and reduction in exercise tolerance are significant symptoms and breathlessness, in particular, is unacceptable.[296] Dr Gabbay advised that the Pulmonary Hypertension Society of Australia and New Zealand is doing everything it can to increase the education of doctors in regard to the investigation of breathlessness and how breathlessness needs a diagnosis.[297] Hopefully, the knowledge of what happened in this case will underscore to the doctors who hear of it the importance of investigating this symptom. There are much more common diagnoses than pulmonary hypertension as the cause of breathlessness, but that diagnosis needs to be made in order to eliminate the less common, but much more serious, condition of pulmonary hypertension.

178. As for the practices at CVS, Dr Butler gave evidence that, following these events, significant changes have been implemented in regard to what information is available to a specialist reporting on an echocardiogram test. It is now standard practice at CVS for the referral form and health questionnaire to be scanned into the web-based reporting system.[298] As noted previously, these were not available to Dr Butler on 27 May 2010 and knowledge of her clinical situation might well have assisted her in better assessing the urgency of her situation. In addition, there have also been changes to the way the cardiologist documents any conversation with the referring doctor. A time and date stamped text box is created to

[293] Exhibit 1, Tab 4B, Diagnostic Pathway.
[294] Exhibit 1, Tab 4B.
[295] Transcript 44 – 45.
[296] Transcript 212, 225, 231 - 232.
[297] Transcript 225, 231 - 232.
[298] Transcript 322, 331.

properly and comprehensively record the discussion and the recommendations made.[299]

179. Dr Butler also gave evidence that she had changed her own practice in terms of her willingness to call patients directly in certain serious cases.[300] This is consistent with Dr Gabbay's recommendation that "people who report echocardiograms in patients who have newly diagnosed serious conditions" such as pulmonary hypertension, should consider contacting the patient where possible and practical.[301]

180. Also with the benefit of the knowledge of what happened in this case, Dr Gabbay's experience anecdotally is of an increased willingness of doctors to telephone Dr Gabbay directly on his mobile, or telephone the lung transplant unit's physician on call on the night a new diagnosis is made, rather than simply sending a fax.[302]

181. One other issue that was touched upon by Dr Gabbay was the recommendation that more needs to be done to alert patients to the need to tell their doctor about what they might consider routine medication, in this case, the oral contraceptive pill.[303] Dr Gabbay suggested pharmacists could play a role in this regard, with which I agree, but it is also the role of the prescribing doctor to emphasise to their patients that it is a medication that can, in some cases, have harmful effects and it is important to tell any treating doctor that they are taking it. This does not remove the responsibility from emergency doctors to take a detailed medical history and ask probing questions when they receive a negative answer, but it would go some way to ensuring that this important information is not missed.

RECOMMENDATION

I recommend that general practitioners advise patients to whom they are prescribing the oral contraceptive pill, whether newly prescribed or a repeat prescription, that it is a medication that should be reported when the patient is asked to complete a medical questionnaire, provide a medical history or is asked whether they are taking any medications. This recommendation, and a copy of the finding, will be forwarded to the Western Australian office of the Royal Australian College of General Practitioners.

[299] Transcript 322, 331.
[300] Transcript 331.
[301] Transcript 216.
[302] Transcript 216 – 217, 234.
[303] Transcript 213.

182. The deceased's family also suggested practitioners should consider offering patients the opportunity to test for blood clotting disorders prior to the patient being prescribed the oral contraceptive pill.[304] The question of routine screening was considered in a study conducted in the Netherlands on oral-contraceptive users who are carriers of factor V Leiden mutation.[305] The researchers' conclusion was that the "absolute risk of deep venous thrombosis is low even among young woman who have both risk factors"[306] (namely the mutation and taking the oral contraceptive pill) and most episodes among the young are minor, although pulmonary embolism does occur. The researchers concluded that "[w]ithholding oral contraceptives from all carriers might be a high price to pay, especially since other methods of contraception are more error-prone and cause greater medical, psychological and social morbidity."[307] The researchers' conclusion was that the best course might be for a doctor at first or repeat prescription to take a thorough personal and family history of thrombosis and to investigate if positive.[308] My understanding is that this is the recommended standard practice for general practitioners prescribing the oral contraceptive pill in Australia.

CONCLUSION

183. The deceased was a healthy, vibrant young woman until she became unwell in early 2010. As her health progressively deteriorated, she sought medical assistance on a number of occasions. Regrettably, the disease that was causing her ill health was not identified by the doctors she saw until she had collapsed and sustained an unsurvivable brain injury.

184. Dr Gabbay gave evidence that the circumstances of the deceased's medical condition were extremely rare. As a specialist in the field of respiratory medicine, he estimated a similar case would be unlikely to present more than once or twice a year.[309]

185. The best opportunity to diagnose and effectively manage the deceased's medical condition was when she presented to the Fremantle Hospital Emergency Department on 9 May 2010.[310] If this had occurred, she would most likely have been referred to the WA Pulmonary Hypertension Program at Royal Perth Hospital and it is Dr Gabbay's opinion (shared by the other experts) that it is extremely likely the deceased would have received advanced

[304] Transcript 3340 – 341.
[305] Exhibit 7.
[306] Exhibit 7, 1456.
[307] Exhibit 7, 1456.
[308] Exhibit 7, 1456.
[309] Transcript 226.
[310] Transcript 207.

therapies that would have saved her life at least in the short term, and hopefully in the long term. If that had occurred, in all likelihood, she would have been alive today.[311]

186. Not only the three doctors involved in Petra's care, but also other doctors who gave evidence at the inquest, expressed their great sadness at the tragic outcome in this case, which was likely preventable, and their hope that lessons could be learnt for the future. The deceased's family have expressed a similar hope.[312]

187. There was evidence at the inquest that since the deceased's death, some steps have already been taken to try to prevent similar mistakes being made at Fremantle Hospital and CVS. There was also evidence that knowledge of this case within the wider medical community has prompted discussions about the need to educate all doctors about the symptoms of pulmonary hypertension generally and pulmonary embolism specifically, and the need to approach newly diagnosed cases with a sense of urgency.

188. None of these changes will return Petra to her family, but they have described the inquest as providing them with a measure of closure,[313] which is perhaps the most they can hope to achieve. They, and I, are hopeful that the lessons learnt in this inquest will save another family from having to suffer the same loss in a similar case.

Sarah Linton
Coroner
15 January 2015

[311] Exhibit 1, Tab 9 [56] – [57].
[312] Transcript 341.
[313] Transcript 341.