Coroners Act 1996
[Section 26(1)]

Western *Australia*

RECORD OF INVESTIGATION INTO DEATH

Ref: 10/15

I, Sarah Helen Linton, Coroner, having investigated the death of ***Helen Christine MacFARLAINE*** *with an inquest held at the* ***Perth Coroner's Court, CLC Building, 501 Hay Street, Perth*** *on* ***10 March 2015 to 12 March 2015*** *find that the identity of the deceased person was* ***Helen Christine MacFARLAINE*** *and that death occurred on* ***12 April 2012*** *at* ***Sir Charles Gairdner Hospital*** *as a result of* ***intracerebral haemorrhage in a lady with underlying cerebrovascular disease and hypertension following a recent right carotid artery endarterectomy*** *in the following circumstances:*

Counsel Appearing:

Ms I O'Brien assisting the Coroner.
Ms C Thatcher (State Solicitor's Office) appearing on behalf of Sir Charles Gairdner Hospital, Dr Baker, Dr Griffin, Nurse Laurent, A/Clinical Nurse Hanstrum and Ms Anne Brinkworth.
Mr D Bourke (Clayton Utz) with Ms A De Villiers appearing on behalf of Professor Knuckey.
Ms W Gillan (instructed by Morag Smith, Avant Legal) appearing on behalf of Dr Mahindu.
Ms G McGrath (Panetta McGrath Lawyers) appearing on behalf of Dr Riaz.
Ms B Burke (Australian Nursing Federation) appearing on behalf of Nurse Watt and Nurse Powell.

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INTRODUCTION

1. On 4 April 2012, Helen MacFarlaine (the deceased) underwent elective surgery at Sir Charles Gairdner Hospital (SCGH) on her right sided carotid artery. The surgery was uncomplicated and technically successful. She remained at the hospital for post-operative care for a number of days and was discharged home on 8 April 2012.

2. The following morning, the deceased suffered a catastrophic stroke and returned by ambulance to the Emergency Department of SCGH. She was diagnosed with a devastating and non-survivable intracerebral haemorrhage and was transferred to the Intensive Care Unit, where she was treated palliatively until she died on the morning of 12 April 2012. Her death was reported to the Coroner and police officers from the Coronial Investigation Unit commenced a coronial investigation.

3. As part of the investigation into the death, on 10 to 12 March 2015, I held an inquest into the death. The evidence at the inquest hearing was primarily directed towards the deceased's post-operative management at SCGH, particularly in relation to monitoring of her blood pressure, and the decision to discharge the deceased on the morning of 8 April 2012.

4. The documentary evidence comprised a volume of materials obtained during the coronial police investigation,[1] the deceased's original medical file,[2] and a number of additional exhibits tendered during the hearing.[3]

5. Oral evidence was heard from Professor Knuckey, the neurosurgeon who performed the deceased's initial surgery, and then from a number of the doctors and nurses involved in her post-operative care in the Neurosurgery Ward at SCGH. In addition, Dr Baker, the intensive care specialist who cared for the deceased on her re-admission to SCGH, and Professor Bryant Stokes, a Clinical Professor of Neurosurgery, gave expert evidence in relation to the overall care of the deceased leading up to her surgery and from then until her death.

6. At the conclusion of the hearing, a letter from the deceased's husband was provided to the Court in lieu of submissions.[4] Written submissions were later filed on behalf of Sir Charles Gairdner Hospital, Dr Mahindu, Nurse Watt and Professor Knuckey. I have

[1] Exhibit 1.
[2] Exhibit 2.
[3] Exhibits 3 to 5.
[4] MFI 1.

given those submissions due consideration before making my findings.

THE DECEASED

7. The deceased was a 52 year old Anglo-Indian woman, having been born on 7 November 1959 in Calcutta, India. She moved to Western Australia with her family as a teenager. She qualified as a teacher and at the time of her death she was working as an English teacher in South Hedland.[5]

8. The deceased had a son from a previous marriage and had remarried a couple of years before her death. She had not taken her new husband's name to avoid confusing her students with a name change.[6]

9. The deceased's husband described the deceased as strong willed but easy going, although she could come across as quite blunt because she would usually say what she thought.[7]

10. In relation to her general health, the deceased smoked up to a packet of cigarettes a day and was slightly overweight.[8] She drank approximately half a bottle of wine a night and smoked a small cone of marijuana every night to help her sleep.[9] She was apparently not on any medication until it was prescribed in the lead-up to her surgery,[10] although she had an ongoing anxiety disorder.[11]

11. Approximately one year before her death, allegedly after an assault, the deceased starting noticing problems with her left eye. She would experience brief periods of blurred vision, which would then resolve. At that time, imaging was recommended by doctors but she was suffering a lot of anxiety and chose not to proceed with the recommendation.[12]

DIAGNOSIS OF CAROTID ARTERY DISEASE

12. On 17 November 2011, the deceased saw a general practitioner, Dr Tariq Mirza, in South Hedland. She described a history of recurrent blurred vision and a feeling of pressure behind her left eye. Dr Mirza advised her to undergo a CT scan of her brain, which

[5] Exhibit 1, Tab 5.
[6] Exhibit 1, Tab 5.
[7] Exhibit 1, Tab 5 [10] – [11].
[8] Exhibit 1, Tab 5 [7] and Tab 11 and Tab 12 and Tab 22 (weight of 90 kg recorded on 3.4.12).
[9] Exhibit 1, Tab 5 [9].
[10] Exhibit 1, Tab 5 [12].
[11] Exhibit 1, Tab 11.
[12] Exhibit 1, Tab 5 [13] and Tab 11.

she did in January 2012. The scan identified lacunar infarcts in the left centrum semi-ovale and white matter of the frontal lobe, which suggested occlusion of arteries supplying the brain.[13]

13. The deceased was referred to a Consultant Neurologist, Professor Allan Kermode, for neurological assessment. Professor Kermode saw the deceased on 15 March 2012. At that time her blood pressure was recorded as 140/100 (slightly raised) after lying down for five minutes and her pulse was 72 bpm.[14] A brain MRI revealed moderately severe cerebrovascular disease with an occluded (obstructed) left carotid artery and severe right common carotid artery stenosis (narrowing). Stenosis is usually due to the deposition of fat and then calcium in the wall of a vessel, which gradually narrows the vessel.[15]

14. There was also evidence suggestive of watershed infarction in the left side of the brain, which probably related to the occluded left carotid artery.[16] It was a fairly significant and grave sign.[17]

15. Professor Kermode arranged for the deceased to be admitted to St John of God Private Hospital where she was commenced on Aspirin and further imaging of the vessels, a number of blood tests and an ECG were performed.

16. The deceased's blood test results were unremarkable, with the exception of her cholesterol, which was high. She was started on Atorvastatin to slow the progression of her vascular disease.[18] She was also put on Nicabate to help her stop smoking, which she apparently did cease from that time.[19]

17. The further imaging with CT angiography confirmed complete occlusion of the left internal carotid artery and high grade stenosis (60 – 70% of the right common carotid artery and 70% of the right internal carotid artery)[20] at the right carotid bifurcation.[21] It did not show a cerebral infarct.[22] What this meant was that the blood flow to the left cerebral hemisphere was not occurring through the left carotid artery. Rather, the blood flow to both hemispheres of the brain was being supplied by the right carotid artery. This had resulted in a relatively ischaemic (lack of sufficient blood supply) left hemisphere. The narrowing of the right internal carotid artery also

[13] Exhibit 1, Tab 6 and Tab 7.
[14] Exhibit 1, Tab 11.
[15] T 8.
[16] Exhibit 1, Tab 8 and Tab 11.
[17] T 9.
[18] T 71; Exhibit 1, Tab 12.
[19] Exhibit 1, Tab 5 [19].
[20] Exhibit 1, Tab 9.
[21] Exhibit 1, Tab 9 and Tab 11 and Tab 12.
[22] Exhibit 1, Tab 12.

meant that blood flow was significantly reduced on that side as well.[23]

18. Professor Kermode referred the deceased to a consultant Neurosurgeon, Professor Neville Knuckey, as he thought it likely the deceased would require a surgical procedure known as a carotid endarterectomy. Professor Knuckey reviewed the deceased during her hospital admission on 19 March 2012.[24] Professor Knuckey's recollection of his brief interview with the deceased on that day was that the deceased was very upset about her medical condition.[25]

19. Having reviewed the deceased and the results of her investigations, Professor Knuckey agreed with Professor Kermode's clinical assessment that the procedure of right carotid endarterectomy was appropriate.[26] He observed that she had significant atherosclerotic disease and her cerebral vascular tree was "in a very precarious situation."[27] She also had a number of risk factors for stroke, including her age, high cholesterol, history of smoking and cannabis use.[28] Professor Knuckey estimated that without surgery, the deceased had a 20% chance of having a stroke over two years.[29] Most people do not survive a bilateral carotid stroke.[30]

20. Professor Bryant Stokes, who gave expert evidence at the inquest in his capacity as a Clinical Professor of Neurosurgery,[31] also agreed that the deceased's position at that stage would be described as critical and life-threatening based upon those findings and that a carotid endarterectomy was the appropriate course of treatment.[32] Without the surgery, the deceased ran the risk of an occluded stroke or embolisation from the opposite carotid artery and perhaps intracranial haemorrhage.[33]

21. Professor Knuckey saw the deceased again for a full assessment in his private rooms on 22 March 2012. Professor Knuckey discussed with the deceased the significance of a critical stenosis and the need for surgery.[34] He outlined the nature of the procedure and the potential risks of the surgery, such as infection, haemorrhage, cranial neuropathy, stroke and death.[35] He also particularly emphasised the risk of hoarse voice afterwards, as her larynx would

[23] T 8.
[24] Exhibit 1, Tab 10 and Tab 12.
[25] Exhibit 1, Tab 12.
[26] T 70.
[27] T 91, 96.
[28] T 96 – 97.
[29] T 91.
[30] T 91.
[31] T 6.
[32] T 9 – 10.
[33] T 10.
[34] T 91.
[35] Exhibit 1, Tab 12.

need to be mobilised during the surgery. The deceased was upset about the possibility of a hoarse voice because she was a teacher, but she agreed to undergo the surgery and signed the surgical consent form.[36] Arrangements were then made for a routine booking into the next available spot for surgery.[37]

22. The deceased smoked a small amount of cannabis for the last time on the evening of 1 April 2012, before flying to Perth on 2 April 2012 in preparation for her surgery.[38]

FIRST ADMISSION TO SCGH – 3 – 8 APRIL 2012

23. On 3 April 2012, the deceased was admitted to SCGH for her surgery. The admission notes indicate the deceased expressed concern again about the effect of the surgery on her voice but raised no other concerns.[39] Her blood pressure on examination at admission was 120/80 and her pulse was 70 bpm.[40]

24. On 4 April 2012, the deceased underwent an uncomplicated right carotid endarterectomy, performed by Professor Knuckey with the assistance of a neurosurgical registrar from the United States, Dr John Kelleher.[41] Professor Kermode performed the intraoperative EEG monitoring and there was no change in EEG recordings during the procedure.[42]

25. The surgery was not performed on the occluded left artery as that was likely to have been occluded for some time and could not be surgically corrected. Rather, the surgery was performed on the right carotid artery in order to try and improve the blood flow, which would then continue to supply both sides of the brain.[43]

26. Carotid endarterectomy surgery involves being able to expose the artery and then to clamp the artery, open the artery and remove the lining of the artery (both the internal common carotid and external carotid artery).[44]

27. Professor Stokes explained that in removing the lining of the artery during surgery there is almost always some damage done to the carotid sinus nerve. This is important because the nerve sits at the carotid bifurcation and it is the nerve's function to tell the brain to

[36] Exhibit 1, Tab 11 and Tab 12.
[37] T 71.
[38] Exhibit 1, Tab 5 [20] – [21].
[39] Exhibit 1, Tab 21, Inpatient Notes 3.4.12, 7.00 pm.
[40] Exhibit 1, Tab 21, Inpatient Notes 3.4.12, 7.00 pm.
[41] T 71.
[42] Exhibit 1, Tab 11 and Tab 12 and Tab 23.
[43] T 10.
[44] T 10.

alter blood flow in response to changing blood pressure.[45] Usually, when the blood pressure increases, the nerve activates and drops the blood pressure through the cardiac function. If the nerve is no longer working, the blood pressure will go up, and can go up quite significantly. This is so even in patients who do not have an occluded or clotted artery on one side.[46]

28. The deceased's surgery was successful. Upon postoperative review on the day of the surgery the deceased was stable, had no neurological deficit and there were no complications.[47] Professor Knuckey did not recall that the deceased had shown any signs of facial drooping after surgery, but observed that it was not something he would have particularly noted or paid attention to, as some temporary facial weakness in the lower part of the lip is quite common after surgery and it would not concern him on its own.[48]

29. I note that the procedure was referred to by the neurosurgeons as a common surgical procedure performed by them in Western Australia.[49] I accept the expert medical evidence that it was appropriate for the right carotid endarterectomy to be performed and the preoperative and operative care was carried out appropriately and successfully.

POST-OPERATIVE CARE INSTRUCTIONS

30. An operation report was completed on the day of the surgery. At the bottom of that report Dr Kelleher recorded some post-operative instructions.[50] The instructions were not recorded on the second page of the operation report in the section titled "postoperative instructions", but instead were recorded at the bottom of the front page, after the notes of the surgical procedure.[51] This was apparently not uncommon at that time.[52]

31. The post-operative instructions indicated that the deceased's systolic blood pressure (SBP) was to be maintained between the range of 100 and 160 mm/Hg.[53] The original entry had specified the bottom range as 110, but this was struck through and changed to 100 with a notation "as discussed with Professor Knuckey."[54]

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[45] T 9.
[46] T 15.
[47] T 71; Exhibit 1, Tab 11 and Tab 12.
[48] T 72.
[49] T 10, 70.
[50] T 72.
[51] Exhibit 1, Tab 20, Operation Report.
[52] Professor Stokes clarified that he also did not make a practice of using the designated 'post-operative instructions' section on the second page – T 38.
[53] Exhibit 1, Tab 20, Operation Report.
[54] Exhibit 1, Tab 20, Operation Report.

Professor Knuckey indicated that control of blood pressure is important for most neurological conditions and the systolic blood pressure range he set was routine following carotid endarterectomy surgery.[55]

32. Professor Knuckey explained his reasoning behind setting those parameters is that if the blood pressure goes too low, it can result in clotting off the endarterectomy, and if it gets too high, it can lead to rupturing of the anastomosis site.[56] He expected her blood pressure to be maintained within those parameters for at least the first 24 hours of her post-operative care. For the remaining duration of her admission he accepted a certain amount of common sense could be applied in clinical decision-making by the doctors on the ward. That is, if a blood pressure reading was taken that was outside those parameters, he would expect a nurse to pass on that information to a resident medical officer (RMO or resident) for them to make an assessment and decide what action should be taken.[57]

33. When asked by counsel assisting whether Professor Knuckey would have expected most doctors on the neurosurgery ward to be alert to those blood pressure parameters after this type of surgery, he answered, "certainly by the registrars."[58] He also said that he would usually expect a doctor on the neurosurgery ward to look in the medical file for any post-operative instructions or it would form part of the verbal handover information between shifts.[59]

Hyperperfusion Syndrome

34. There is a rare condition called hyperperfusion syndrome of the brain which may occur after re-opening of a major vessel, such as the carotid to the brain. The hyperperfusion is associated with changes in auto regulation of the cerebral circulation and is known to sometimes lead to intracranial haemorrhage. It comes about because the brain has lost its vascular elasticity. Because the brain has been experiencing extended low blood flow or perfusion, the blood vessels in the brain react by dilating and they lose normal reactivity and ability to autoregulate blood flow. After the surgery, when the blood flow is increased, the blood vessels can't constrict as they ordinarily would, resulting in a disproportionate increase in blood flow to the brain. This can lead to haemorrhage.[60]

35. Professor Knuckey indicated the syndrome is known over many aspects of neurosurgery.[61] It was suggested by Professor Stokes

[55] T 73.
[56] T 73.
[57] T 73 - 74 and 76 and 86 – 87.
[58] T 73.
[59] T 74 – 75.
[60] T 11, 71
[61] T 71, 77.

that the literature indicates the syndrome occurs in between 3% to 8% of patients who undergo carotid endarterectomy.[62] According to Professor Knuckey, the occurrence is rarer, with hyperperfusion syndrome developing in only 1 – 2% of patients, and haemorrhage in only about 0.5% of cases.[63]

36. Professor Stokes observed that it is difficult to predict in which patients the syndrome is likely to occur. Professor Stokes gave evidence that he has performed over 100 carotid endarterectomies and has only seen hyperperfusion syndrome occur in two of his patients. Both patients survived.[64] Professor Knuckey gave evidence that he has performed hundreds of carotid endarterectomies and never seen hyperperfusion syndrome develop in one of his patients until this case.[65]

37. The symptoms of hyperperfusion vary between patients. Sometimes they just become restless and sleepy and/or develop a hemiparesis (weakness on one side of the body). Sometimes the patient will complain of a mild headache, while others may complain of a very severe headache, increasing in nature. Other patients may have an epileptic seizure if there is a lot of brain injury and they may then develop paralysis.[66] Of those various symptoms, Professor Stokes indicated that an increasing headache was the main symptom that clinicians should be mindful of as a warning sign.[67]

38. The time a hyperperfusion state takes to develop also varies. It may come on within 48 hours of an operation, or earlier, but it has also been known to develop up to two weeks after surgery.[68]

39. According to Professor Stokes, the only thing that is really known to be likely to cause hyperperfusion is if the patient's blood pressure gets out of control. However, it raises the question as to whether the blood pressure starts to rise because the brain is already swelling, or whether the swelling occurs because the blood pressure rises. Professor Stokes described it as "a very complex scenario."[69]

40. Further, even with the best blood pressure control, it may not always be possible to avoid a hyperperfusion state.[70] Professor Knuckey referred to the relevant literature over the last 20 years and noted that there has been no randomised trial to establish

[62] T 11.
[63] T 70.
[64] T 11.
[65] T 77.
[66] T 12.
[67] T 12.
[68] T 12.
[69] T 11.
[70] T 11.

that controlling the blood pressure will make any difference to the outcome.[71]

41. Of those people who do develop hyperperfusion syndrome, the vast majority will survive with medical management to reduce their blood pressure. However, in a small number of cases it may lead to swelling of the brain and eventually to death from either haemorrhage or massive ischaemia to the brain.[72]

42. Professor Knuckey has previously occupied the role of Director of Neurosurgical training at SCGH. In his opinion, most registrars would know about the concept of hyperperfusion syndrome because it happens in a number of different conditions. Specifically in relation to carotid endarterectomies, he would expect registrars would know about it simply because it is so rare.[73] He would not, on the other hand, expect a resident to necessarily have knowledge of hyperperfusion syndrome.[74] Professor Stokes also agreed that he would not expect a resident at the start of his first term in neurosurgery to have an understanding of hyperperfusion syndrome.[75]

CARE ON THE NEUROSURGICAL WARD

Initial Post-Operative Care

43. After being transferred from the recovery room to the neurosurgery ward, the deceased initially had hourly observations of her vital signs and neurologic function. These were stable from the time of return to the ward during the afternoon of 4 April 2012 until the morning of 6 April 2012. The deceased's recorded blood pressures throughout this time were around 100 – 120/70 and neurologic observations were normal.[76]

44. A note had been made in the inpatients notes by a registered nurse at 4.30 am on 5 April 2012 acknowledging the post-operative instructions to keep the deceased's systolic blood pressure between 100 and 160 mmHg, so it is apparent the nursing staff at that time were aware of the need to keep the deceased's systolic blood pressure within those limits. As noted above, the blood pressure readings at that time were all within those parameters.[77]

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[71] T 84.
[72] T 12.
[73] T 77.
[74] T 86.
[75] T 42.
[76] Exhibit 1, Tab 20 and Tab 23, 3; Exhibit 2.
[77] Exhibit 1, Tab 21, Inpatient Notes, 5.4.12, 04.30.

45. It is interesting that the deceased's systolic blood pressure was not elevated, even though the nursing documentation shows that the nursing staff were experiencing some difficulty in dealing with the deceased on the ward due to her agitated state at that time. The deceased is documented as "very anxious, demanding lots of attention, teary at times" in the early hours of 5 April 2012 and a nurse noted that significant efforts were made to reassure the deceased.[78] The same nurse also noted at 7.10 am that the deceased was "very rude and verbally aggressive towards nursing staff, despite staff attempting to do what she asks for and being polite towards [her]."[79] Nevertheless, the deceased's systolic blood pressure readings recorded around that time are all below 130.[80]

46. The deceased was reviewed by a neurosurgical registrar, Dr Lyons, at 7.45 am who noted that the deceased reported feeling well, although she had been crying overnight and made a reference to her husband. At that time, her blood pressure was noted to be stable.[81]

47. There appear to have been continuing issues between the deceased and hospital staff during that morning[82] but, by the early afternoon, Dr Lyons had noted the deceased's behaviour had "improved" although she reminded the deceased "to have respect for nursing staff".[83] No further behavioural issues were noted that day or the following.

48. Professor Knuckey reviewed the deceased during his post-operative rounds sometime on 5 April 2012 and found she was stable with no neurological deficit. The resident medical staff was instructed on discharge planning for the weekend, provided everything remained routine, with a plan for Professor Knuckey to review the deceased in his rooms a fortnight after surgery.[84]

49. The deceased changed to two hourly observations in the afternoon of that day until 6.00 pm, and from then on her observations were taken every four hours.[85]

6 – 7 April 2012

50. Dr Baker, who reviewed the deceased's medical care leading up to her death, observed that the nursing notes and observations suggest there was a change in the deceased's condition from around the morning of 6 April 2012. He describes the observations and notes

[78] Exhibit 1, Tab 21, Inpatient Notes, 5.4.12, 04.30.
[79] Exhibit 1, Tab 21, Inpatients Notes, 5.4.12, 07.10.,
[80] Exhibit 1, Tab 20, Impaired Consciousness Chart.
[81] Exhibit 1, Tab 21, Inpatient Notes, 5.4.12, 07.45.
[82] Exhibit 1, Tab 21, Inpatient Notes, 5.4.12, 13.00.
[83] Exhibit 1, Tab 21, Inpatient Notes, 5.4.12, 13.30.
[84] T 72; Exhibit 1, Tab 12.
[85] Exhibit 1, Tab 20, Impaired Consciousness Chart.

as documenting an "abnormally elevated and steadily increasing blood pressure", which by the following day was coupled with complaints of headache and nausea and increasingly agitated and angry behaviour on the part of the deceased.[86]

51. There are limited inpatient note entries over this period. The first is at 5.00 am where a nurse records that the deceased showed no neurological deficits but was feeling nauseous (without vomiting) and constipated.[87] Her complaint of constipation was also noted during the neurosurgical ward round, with no other concerns reported about her clinical state. The deceased was prescribed medication for her constipation and told she could be given an enema if required.[88] Her observations were reported to be stable at that time, although it is apparent from the observations chart that her blood pressure had risen from the earlier observed levels.[89]

52. At 11.50 am, the nursing note entry indicates the deceased's systolic blood pressure is between 130 and 150, which is still below Professor Knuckey's maximum recommended level but indicates a rise from the previous days consistent sub-130 levels.[90]

53. That night the deceased declined to take her medication for her constipation (it is unclear as to why) but otherwise appeared to be behaving in an unexceptional manner.[91]

54. The next entry in the inpatient notes is recorded by Registered Nurse Collard at 6.00 am on 7 April 2012. It relates the events of the preceding hours. Nurse Collard noted that the deceased was initially pleasant, cooperative and appropriate[92] The deceased's observations taken at 8.00 pm and midnight show a steadily increasing systolic blood pressure over this period, from 160 mmHg at 8.00 pm and 180 mmHg at midnight.[93]

55. Nurse Collard's nursing note then indicates that by 4.00 am she considered the deceased had become hostile, paranoid and accusatory. The deceased refused to have her nursing observations taken at that time (recorded in the observation chart as "flatly refused obs").[94] According to the entry the deceased stated that lack of sleep and failed nursing communication had resulted in the deceased being woken continually and unnecessarily. Nurse Collard, on the other hand, appears to have attributed the

[86] Exhibit 1, Tab 23, 3 – 4.
[87] Exhibit 2, Inpatient Notes, 6.4.12, 5.00.
[88] Exhibit 2, Inpatient Notes, 6.4.12, 9.05.
[89] Exhibit 2, Inpatient Notes, 6.4.12, 9.05.
[90] Exhibit 2, Inpatient Notes, 6.4.12, 11.50.
[91] Exhibit 2, Inpatient Notes, 6.4.12, 19.45.
[92] Exhibit 2, Inpatient Notes, 7.4.12, 06.00.
[93] Exhibit 1, Tab 20, Impaired Consciousness Chart.
[94] Exhibit 1, Tab 20, Impaired Consciousness Chart.

deceased's complaints to possible Tetrahydrocannabinol (THC) withdrawals. The deceased was given an intravenous dose of her prescribed buprenorphine (Temgesic), apparently to good effect.[95] Nurse Collard then made a note that, due to the deceased's multiple serious complaints about multiple nursing staff, she would benefit from a visit by the patient liaison nurse.[96]

56. It seems clear from Nurse Collard's note that she did not, at that stage, attribute the deceased's changed behaviour to any deterioration in her neurological functioning.

57. The deceased was later reviewed during the morning neurosurgery ward round by Dr Kelleher. The deceased was worried about her voice and complained of headache for the first time. The note (the paucity of which I will discuss later) was made by a medical resident, Dr Riaz, and does not describe the headache in any detail. Dr Riaz could not recall any of the discussion during the ward round[97] but indicated that he simply wrote down what he was told by the registrar. On reading the notes, he assumed that the reference to charting pain medications related to the deceased's headache.[98] Dr Riaz prescribed an oral dose of Tramadol, a pain reliever, at 9.45 am.[99] Working on the assumption that was the time of the ward round, it is worth noting that the last blood pressure reading had been taken at midnight and the next was not taken until 10.00 am, after the ward round, as the deceased had refused her 4.00 am observations and had apparently transitioned to six hourly observations at that time.[100]

58. The blood pressure reading taken at 10.00 am was recorded as 175 SBP. Enrolled Nurse Laurent made a note at 1.30 pm that this reading was "still quite high." Nurse Laurent could not recall what she did after taking this reading although she said at the inquest that she wished that she could.[101] She couldn't remember if she informed anyone about the reading.[102]

59. The deceased was also apparently feeling nauseous at that time, and reported having vomited after breakfast. She didn't want to eat because of her nausea. She reported strong pain and was given Tramadol and an anti-nausea drug to good effect.[103] Although she did not indicate the site of the pain, when questioned about it at the inquest Nurse Laurent said she assumed the pain related to a

[95] Exhibit 1, Tab 20, As Required "PRN" Medications chart.
[96] Exhibit 2, Inpatient Notes, 7.4.12, 06.00.
[97] T 181.
[98] T 180.
[99] Exhibit 1, Tab 20, As Required "PRN" Medications chart.
[100] Exhibit 1, Tab 20, Impaired Consciousness Chart.
[101] T 173.
[102] T 173 – 174.
[103] Exhibit 2, Inpatient Notes, 7.4.12, 13.30.

headache.[104] The plan for a possible discharge the following day was noted by Nurse Laurent.[105]

60. Nurse Laurent acknowledged at the inquest that her notes were (in her own words) "terrible"[106] and she advised she had since changed her practice and her notes are now much more detailed, including indicating what steps she has taken in response to an abnormal observation.[107]

61. The next set of observations records the deceased's blood pressure measurement as 220/120 at 4.00 pm on 7 April 2012.[108] This was the deceased's maximum systolic blood pressure reading during this hospital stay. There is no corresponding entry in the inpatient notes to this set of observations but it was accepted at the inquest by Registered Nurse Julie Watt that she took this blood pressure reading.[109] Nurse Watt agreed during her evidence that this was a relatively alarming blood pressure reading for a normal person.[110]

62. Nurse Watt's recollection was that at the time she took this blood pressure reading the deceased was very upset and angry and was stating that she didn't feel well enough to go home and didn't want to go home.[111] Nurse Watt had been told during the nursing handover earlier that afternoon[112] that the deceased had been verbally aggressive on occasions and did not want to go home. The deceased's behaviour at 4.00 pm is consistent with the deceased continuing to feel upset and unwell during the afternoon.

63. Nurse Watt indicated in her statement that she would usually check a single high blood pressure reading before speaking to her supervisor,[113] but there is nothing in the medical records to indicate she did so on this occasion and she agreed that she would have recorded it on the observation chart if she had.[114] Having said that, it seems implicit in an entry in the inpatient notes that later that night Nurse Watt took another blood pressure reading and didn't enter it in the notes, but I will come back to that issue.[115]

64. Nurse Watt also asserted that her usual practice was to speak to her supervisor if a patient's blood pressure was outside the usual range, which she indicated was anything over 160 mmHg, although most

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[104] T 176.
[105] Exhibit 2, Inpatient Notes, 7.4.12, 13.30.
[106] T 176.
[107] T 175; Exhibit 1, Tab 13 [9].
[108] Exhibit 1, Tab 20, Impaired Consciousness Chart.
[109] T 129.
[110] T 130 - 131.
[111] T 129; Exhibit 1, Tab 15 [5].
[112] At approximately 1.00 pm – Exhibit 1, Tab 15 [3].
[113] Exhibit 1, Tab 15 [7].
[114] T 137.
[115] T 133, 139 - 141.; Exhibit 1, Tab 20, Observation Chart.

likely any reading over 130 mmHg would have prompted her to do so.[116] Certainly, a reading of 220 mmHg would fall into that category.[117] Although she was unable to actually recall what she did on this occasion,[118] Nurse Watt relied upon her usual practice and assumed that she went and spoke to the clinical nurse shift coordinator, Nurse Hanstrum, close in time to when she took the reading.[119]

65. The difficulty with accepting this proposition is that there is no further recorded contact with the deceased by a nurse or medical officer until 6.30 pm, when Nurse Hanstrum took a manual blood pressure reading of 178/90.[120] Nurse Hanstrum's evidence at the inquest was that she took that blood pressure reading after speaking to the deceased and her husband for approximately half an hour, which would place the time she attended to speak to the deceased at around 6.00 pm.[121] Nurse Hanstrum had indicated in her statement that she had gone to see the deceased at around 7.00 pm, but this would appear to be incorrect.[122]

66. Nurse Hanstrum's visit to the deceased was prompted by a conversation with Nurse Watt who told her that the deceased's "blood pressure was elevated and that [the deceased] was very upset about the care she was receiving."[123] Nurse Hanstrum could not recall whether she was told the actual reading of 220, although she thought she would have included it in her statement if she had been told.[124] However, she also accepted that if she was simply told it was elevated, she would be likely to ask what the actual reading was.[125]

67. Nurse Hanstrum could not recall at what time between 4.00 pm and 6.00 pm Nurse Watt spoke to her about the deceased and she could not account for what occurred during that two hour time period.[126] Nurse Hanstrum agreed that she would have expected Nurse Watt to have informed her straight away if she took a high blood pressure reading. Nurse Hanstrum's usual advice in those circumstances would be to wait a little bit of time, from 15 minutes to half an hour, then take a manual reading as a manual reading is more accurate.[127]

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[116] T 129; Exhibit 1, Tab 15 [7].
[117] T 130.
[118] Exhibit 1, Tab 15 [7],
[119] T 131, 137.
[120] Note that initially in her statement Nurse Watt suggested she had taken this blood pressure reading but during the inquest she revealed it was not in her handwriting and she retracted her earlier statement in that regard – T 132, 136.
[121] T 159.
[122] Exhibit 1, Tab 16 [4].
[123] Exhibit 1, Tab 16 [4].
[124] T 159.
[125] T 169.
[126] T 159, 167 - 168.
[127] T 168.

68. If Nurse Hanstrum followed this usual practice, it would suggest that Nurse Watt only spoke to her about the deceased shortly before 6.00 pm, which then prompted Nurse Hanstrum to go and speak to the deceased before taking a manual reading at 6.30 pm. That would raise the question why Nurse Watt took nearly two hours to speak to Nurse Hanstrum and raise concerns about the deceased's blood pressure? I will come back to that question in due course.

69. When Nurse Hanstrum spoke with the deceased (with the deceased's husband also present) she noted the deceased was very upset. The deceased was voicing her concerns about her care by nursing staff, who she accused of "'lying' about her refusal of care."[128] Nurse Hanstrum apparently reassured the deceased and her husband that the care she was being given was appropriate to her condition and progress and referred them to the patient liaison officer if they felt it was necessary. Surprisingly, there is no mention of the earlier documented blood pressure reading of 220/120 in Nurse Hanstrum's note, but she does indicate that she took the deceased's blood pressure and it was recorded as 178/90, which is elevated.[129]

70. After speaking to the deceased and taking her blood pressure manually,[130] Nurse Hanstrum telephoned the resident on duty, Dr Trinity Griffin, to ask her to review the deceased. In her related inpatient note, written at 7.45 pm, Nurse Hanstrum noted that she asked Dr Griffin to review the deceased "in regards to her pain relief and anti-emetic cover."[131] Nurse Hanstrum did not mention in her note that she had spoken to Dr Griffin about the deceased's elevated blood pressure. However, in her statement and oral evidence Nurse Hanstrum indicated that she told Dr Griffin that the deceased was upset and her blood pressure was elevated,[132] which Nurse Hanstrum believed to be causally linked.[133]

71. Dr Griffin attended to review the deceased sometime after Nurse Hanstrum took the 6.30 pm blood pressure reading. Although Nurse Hanstrum's note written at 7.45 pm suggests Dr Griffin still hadn't attended to review the deceased at that time, Nurse Hanstrum conceded that it was possible Dr Griffin was actually reviewing the deceased at the time Nurse Hanstrum wrote that note.[134] Dr Griffin's note in the inpatient records is the next entry after Nurse Laurent's 7.45 pm entry, but there is no time recorded.[135] The next note is a nursing note timed at 8.15 pm,[136]

[128] Exhibit 2, Inpatient Notes, 7.4.12, 19.45.
[129] Exhibit 2, Inpatient Notes, 7.4.12, 19.45.
[130] Exhibit 1, Tab 20, Impaired Consciousness Chart; Exhibit 2, Inpatient Notes, 7.4.12 19.45.
[131] Exhibit 2, Inpatient Notes, 7.4.12 19.45.
[132] T 161; Exhibit 1, Tab 16 [8].
[133] Exhibit 1, Tab 16 [7].
[134] T 163, 170.
[135] Exhibit 2, Inpatient Notes, 7.4.12 – Dr Griffin (untimed).

which suggests Dr Griffin's note was written sometime between 7.45 and 8.15 pm that night.

72. On 7 April 2012, Dr Griffin was in her second year of practise and on her second rotation in neurosurgery, meaning she had been in neurosurgery for a total of 13 weeks at that time.[137] Dr Griffin was working the evening shift in neurosurgery that day.[138] I note that Dr Griffin did not provide a statement in relation to this matter until 3 February 2014. The statement was based upon her recollection of events, nearly two years after the event, and the hospital notes.[139]

73. Dr Griffin recalled being telephoned by one of the nurses on the neurosurgery ward sometime between 6.00 pm and 7.00 pm that night.[140] Based on the evidence, that nurse was most likely Nurse Hanstrum, although Dr Griffin could not recall her name. Working from the timing of the 6.30 pm blood pressure reading, the call must also have been made after 6.30 pm.

74. Dr Griffin was asked to review the deceased's pain relief and nausea medication, and the nurse mentioned the deceased was expressing a lot of concerns. The nurse also mentioned the possibility that the deceased was experiencing THC withdrawal. The nurse also told Dr Griffin that the deceased had an elevated blood pressure but she could not tell Dr Griffin the reading as the file was not in front of her. Dr Griffin recalled asking whether the reading was concerningly high, and was told it was "still within normal limits but towards the higher end."[141] That would seem to fit with Nurse Hanstrum's 178/90 manual reading, rather than the earlier reading of 220/120. Dr Griffin told the nurse she would come to review the patient but suggested in the meantime the nurse should check that the patient was not in pain, as that can cause elevated blood pressure, and to make sure the blood pressure had been done manually (which had just occurred).

75. Dr Griffin recalled that she attended to review the deceased around half an hour after receiving the telephone call, which she estimated was at about 6.30 pm,[142] but was more likely around 7.00 pm.

76. Dr Griffin's evidence was that on arriving she checked the deceased's observations chart and she was concerned about the earlier high systolic pressure recording of approximately 220 mmHg.[143] She therefore asked the nurse to take a further

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[136] Exhibit 2, Inpatient Notes, 7.4.12, 20.15.
[137] T 102.
[138] Exhibit 1, Tab 14 [4].
[139] T 102.
[140] T 103 - 104.
[141] T 103 – 104; Exhibit 1, Tab 14 [5].
[142] T 106.
[143] T 107.

blood pressure reading manually as the earlier reading had been taken on an automatic machine.[144] Dr Griffin recalled that the repeat blood pressure measurement was done while she was in the room and showed the systolic blood pressure had reduced to around 178 mmHg.[145] This is at odds with Nurse Hanstrum's evidence.

77. Dr Griffin's detailed medical note written on the day does not record her consideration of the deceased's blood pressure and the request for an additional manual test, nor the result of that test. There is no entry in the medical chart that would match Dr Griffin's account other than the reading taken by Nurse Hanstrum. However, Nurse Hanstrum was clear that she took this reading before Dr Griffin attended, and Nurse Hanstrum was not present when Dr Griffin reviewed the deceased.[146] Dr Griffin's oral evidence at the inquest was that she could recall the blood pressure being done manually while she was in the room and it was significantly lower than 220.[147] It is possible that there was another blood pressure reading taken by a nurse other than Nurse Hanstrum after 6.30 pm but the reading was not entered in the observation chart. In any event, Dr Griffin was likely to have taken reassurance from the manual reading taken by Nurse Hanstrum before her arrival.

78. What Dr Griffin's note does record are the numerous concerns expressed by the deceased regarding her care and medications. Dr Griffin recalled that when she began her review the deceased appeared very upset and was in a visibly anxious and aroused state. She was shaking and sweating and was having difficulty with constructing her sentences appropriately.[148] The four main areas of concern the deceased expressed were about her bowel care, control of nausea, pain medications and her interactions with nursing staff on the ward.[149] Dr Griffin dealt with each of these concerns in turn and spent over an hour talking to the deceased and her husband.[150]

79. They discussed the medication plans for the deceased's constipation and nausea, and the importance of oral fluid intake. The deceased's complaint of pain related to back pain and the post-operative site[151] so they also discussed her analgesia and the deceased agreed to follow the analgesics plan set down by Dr Griffin. The deceased's complaints of pain did not include a headache at that time.[152]

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[144] Exhibit 1, Tab 14 [6].
[145] Exhibit 1, Tab 14 [7].
[146] T 161.
[147] T 107.
[148] T 121.
[149] Exhibit 1, Tab 14 [8].
[150] Exhibit 1, Tab 14 [8].
[151] T 109, 123.
[152][152] T 123.

80. The deceased's complaints about the ward staff were focussed upon her concern that the nursing staff "perceived her as a drug addict," with the implication that she was suffering from THC withdrawals, and that they perceived her as a "difficult patient" and that this was handed over each shift so that subsequent nurses were treating her less fairly on that basis.[153] Dr Griffin recorded in the note her view that the deceased was not suffering from THC withdrawal. Dr Griffin reassured the deceased that, in her medical opinion, the deceased's symptoms were a combination of many things, including her drug and alcohol history but also her gender, weight, previous history, current disease, surgical intervention and ethnicity.[154]

81. Dr Griffin also recorded in her note that she had never witnessed behaviour of the kind described by the deceased by the nurses on the ward and assured the deceased that the notes did not reflect her concerns regarding their perception of her.[155]

82. In my view, this was somewhat disingenuous of Dr Griffin, given the inpatient note entries of the nurses do reveal a belief by Nurse Collard, at least, that the deceased was behaving in a hostile and paranoid manner possibly due to THC withdrawals.[156] I accept that Dr Griffin was trying to calm relations between the deceased and nursing staff and did not believe their nursing practices had changed as a result of a suspicion the deceased was experiencing THC withdrawals.[157] However, it is apparent from the nursing notes before she arrived, and the fact that a nurse asked Dr Griffin after her patient review whether they were starting a THC withdrawal chart, that at least one nurse still attributed the deceased's behaviour to THC withdrawal at that time.[158] To tell the deceased the contrary does appear to suggest rather unfairly that the deceased was paranoid when what she suspected was actually largely true.

83. However, I accept the evidence of Professor Stokes that, while it is unwise to make statements that you can't support, Dr Griffin was right to be focusing on calming the deceased in any way she could, given her recent surgery.[159] I also accept that Dr Griffin did explain in detail to the nurse why she did not think the deceased was suffering from THC withdrawal, which was intended, and would have been likely, to improve the nursing/patient relations thereafter.[160]

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[153] Exhibit 2, Inpatient Notes, 7.4.12, Griffin.
[154] T 123 – 124; Exhibit 2, Inpatient Notes, 7.4.12, Griffin.
[155] Exhibit 2, Inpatient Notes, 7.4.12, Griffin.
[156] Exhibit 2, Inpatient Notes, 7.4.12, 06.00.
[157] T 110.
[158] Exhibit 1, Tab 14 [10].
[159] T 24 – 25.
[160] T 124 - 125; Exhibit 1, Tab 14 [10].

84. According to Dr Griffin, the deceased and her husband thanked her for her time and explanation and indicated that they felt more at ease and had a better understanding of the situation after talking to her.[161] The last part of Dr Griffin's note records that the deceased would feel more comfortable if medications were explained to her prior to their administration.[162]

85. The senior doctors who gave evidence at the inquest all observed that Dr Griffin's medical notes were thorough and well documented.[163] However, they also agreed that a surprising omission was any mention of the deceased's blood pressure in the notes.[164] Dr Griffin accepted at the inquest that, in hindsight, she should have included reference to the blood pressure and she attributed the omission to being busy on the ward and most likely running out of time to document it.[165] She gave evidence that she has now changed her practice in this regard and now always makes a note clearly down the margin when she contacts senior staff or observes any recordings of observations that are outside the normal range.[166]

86. Dr Griffin also gave evidence that it was most likely she did not include the information because the deceased's blood pressure was not an ongoing concern at that time. Her primary differential diagnosis was that the high blood pressure reading of around 220 to 225 was due the combination of pain, nausea, constipation and distress.[167] Although she considered an alternative cause of cerebral change, her "concern level for intracerebral changes decreased as the blood pressure decreased."[168]

87. Professor Stokes indicated that, in his view, it was reasonable for Dr Griffin to conclude that the spike in the deceased's blood pressure at the time she reviewed the deceased was due to pain, agitation and nausea.[169] However, he also stated that the first fundamental rule is if a patient becomes anxious and antagonistic, then you need to say, "Is there an organic cause for this?" In Professor Stokes' opinion, you can't necessarily exclude an organic cause in this case.[170]

88. Dr Griffin's evidence was that she considered an organic cause but discounted it as "organic causes of agitation or anxiety generally

[161] Exhibit 1, Tab 14 [9].
[162] Exhibit 2, Inpatient Notes, 7.4.12, Griffin.
[163] T 23, 41 (Professor Stokes); T 59 (Dr Baker); 81 (Professor Knuckey).
[164] T 59, 86.
[165] T 110 – 111.
[166] T 110, 125.
[167] T 108; Exhibit 1, Tab 14 [11].
[168] T 108.
[169] T 24, 39.
[170] T 39.

can't be verbally de-escalated."[171] In this case, by the time Dr Griffin had finished talking to the deceased the deceased appeared calm, which wouldn't have been the case if it had been an organic cause.[172]

89. Dr Griffin could not specifically recall whether she called a registrar to discuss the deceased's management, although it was her ordinary practice to do so (usually by way of text message and then she would await further instruction).[173] She said she would definitely have done so immediately if she had been aware of Professor Knuckey's post-operative instructions, but she did not know of their existence at the time she saw the deceased and was not familiar with this type of surgery.[174] Dr Mahindu was the on-call neurosurgical registrar that evening and his evidence at the inquest was that he did not receive any calls or texts relating to the deceased that evening.[175] It was put to Dr Mahindu that he could have received a text message that he might not now recall, which he accepted was a possibility if it was something of low priority, but it does not seem to me that it takes the matter further given Dr Griffin has no definite recollection that she sent any such text message relating to the deceased.[176]

90. At the conclusion of her review of the deceased, Dr Griffin did not specifically increase the deceased's observation rate but said that she verbally asked the nursing staff to make sure that her blood pressure was taken manually and taken a few more times in addition to the regular observations.[177] If the deceased's blood pressure was normal then they could use their discretion.[178]

91. Dr Griffin had a vague recollection of being called once more by a nurse that night, not long before her shift finished. She remembered that she was told at that time that the deceased's blood pressure had come down.[179] It seems likely this call was from Nurse Watt, who wrote in a note timed at 8.15 pm "RMO review," which she explained meant that she had talked to Dr Griffin about the deceased vomiting up her aperients (which according to the note occurred at 8.25 pm, suggesting that some of the note was written after 8.15 pm).[180] Nurse Watt could not recall if she spoke to Dr Griffin about the deceased's blood pressure at that time.[181]

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[171] T 109.
[172] T 109 – 110, 122.
[173] T 108 – 109.
[174] T 109, 113.
[175] T 209.
[176] T 228.
[177] T 112.
[178] T 112.
[179] T114, Exhibit 1, Tab 14 [12].
[180] T 143 – 144.
[181] T 144.

92. Nurse Watt also recorded in the note that she had given the deceased a glycerol suppository as prescribed by Dr Griffin, which the charts show was given at 7.45 pm.[182] In the same note Nurse Watt recorded that the deceased's blood pressure was "now within exceptible [sic - acceptable] limits."[183] Nurse Watt gave evidence that she would consider anything below 150 as within acceptable levels.[184]

93. It is apparent from the observation chart that Nurse Watt had taken an additional blood pressure reading at 8.00 pm. However, contrary to Dr Griffin's request, that reading was taken electronically[185] rather than manually and was still high at approximately 185/90.[186] Nurse Watt agreed that such a reading would not fit the description of being within acceptable limits.[187] Nurse Watt could not explain why she wrote that the blood pressure was within acceptable limits in her note at 8.15 pm.[188] Nurse Watt agreed it was possible she wrote that because she had, in fact, taken another blood pressure reading that was acceptable, but if that was the case she had not then followed her usual practice of entering the observation in the observations chart.[189]

94. The nursing notes from the night shift, entered the following morning at 5.55 am by Registered Nurse Powell, document that the deceased was asleep at 10.00 pm and her observations were therefore done at midnight. These observations are recorded on the observations chart. It records a significantly reduced systolic blood pressure, back down to approx. 145 mm/Hg.[190] At that time Nurse Powell spoke with the deceased about her pain and the importance of regular paracetamol.[191]

95. Nurse Powell had no independent recollection of attending to the deceased that night,[192] so her statement and evidence at the inquest were based upon her nursing notes. However, when she was asked about the reference to the deceased's pain, she did not think she had made the notation because the deceased had reported pain, but thought it likely it related to the earlier notes.[193]

96. At 4.55 am, the deceased complained of right sided chest pain and enquired why her observations had not been taken at 4.00 am.

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[182] Exhibit 1, Tab 15 [8]; Exhibit 2, As Required "PRN" Medications Chart, 7.4.12.
[183] Exhibit 2, Inpatient Notes, 7.4.12, 20.15.
[184] T 133.
[185] T 39.
[186] Ex1hibit 1, Tab 20, Impaired Consciousness Chart.
[187] T 139.
[188] T 133; 140.
[189] T 141.
[190] Exhibit 1, Tab 20, Impaired Consciousness Chart.
[191] T 148 - 149; Exhibit 2, Inpatient Notes, 8.4.12, 05.55.
[192] T 147.
[193] T 149.

Nurse Powell explained to the deceased that she was now on a six hourly regime. The deceased apparently expressed concern at this information "as she was 'very unwell' yesterday" and felt she should be being checked more frequently.[194] Nurse Powell told the deceased that given her headache was under control as of midnight and she wasn't nauseous, "she felt it best for the deceased to sleep."[195] An ECG was performed due to the deceased's complaint of chest pain, but it did not detect anything of concern.[196] No pain relief was given other than paracetamol and the deceased was otherwise noted to be "pleasant and friendly."[197]

97. Nurse Powell's reference to the deceased's headache being "under control as of midnight" suggests that the deceased had complained of a headache prior to midnight. However, in her evidence at the inquest Nurse Powell indicated that an alternative possibility was that she had assumed the deceased might have had a headache, which would have prompted her to question the deceased prior to offering paracetamol.[198] However, Nurse Powell also agreed that she would not give paracetamol unless there was a report of pain. Therefore, as she noted that the deceased was given paracetamol during the shift, it would be assumed that the deceased had reported pain to Nurse Powell of some type, whether it be a headache or from the post-operative site or elsewhere.[199]

98. It seems to me that it is more likely the deceased complained of a headache at some stage in the hours prior to midnight, and the paracetamol had had the desired effect by midnight. It is consistent with the deceased's complaint of a headache earlier that morning and the reference to the headache being "under control" by midnight, rather than a note simply noting that there was no headache. It is also significant, however, that it was under control by midnight and it does not appear any further mention was made of the deceased having a headache after that time.

99. On the morning of her discharge, the deceased's last recorded blood pressure was at 6.00 am, at which time it had risen again to around 175/95.[200] This reading was also taken by Nurse Powell. As noted above, Nurse Powell did not have any independent recollection of what she did that day. There is no nursing note associated with the observations taken at 6.00 am to assist in identifying what Nurse Powell did after taking that reading.

[194] T 149 – 150; Exhibit 2, Inpatient Notes, 8.4.12, 05.55.
[195] T 149 – 150; Exhibit 2, Inpatient Notes, 8.4.12, 05.55.
[196] T 149.
[197] Exhibit 2, Inpatient Notes, 8.4.12, 05.55.
[198] T 150 – 151.
[199] T 155.
[200] Exhibit 1, Tab 17 [5] and Tab 20, Impaired Consciousness Chart.

100. Nurse Powell gave evidence that she has since changed her practice and now takes detailed notes.[201] Nevertheless, in this case we are left to try to reconstruct events based upon her usual practice.

101. Nurse Powell's evidence was that, given the reading was over 150 SBP, it would be her usual practice to check back in the notes to see if there were any specific medical orders regarding blood pressure (which there were in the post-operative instructions). Depending on what symptoms the patient was exhibiting, and whether there were parameters set, she might then notify the doctor or, since it was close to handover, handover to the next shift to recheck it on the round.[202]

102. Given the deceased's post-operative instructions indicated a maximum SBP of 160, Nurse Powell assumed she did not see the instructions. However, she also gave evidence that she would have considered that reading concerning in any event and taken action.[203] There is, however, no evidence that any action was taken in relation to this blood pressure reading, by either Nurse Powell or any other nurse that shift or the next shift. No further blood pressure reading, or any other observations, appears to have been taken after that time.

Discharge on 8 April 2012

103. The next entry in the inpatient notes is made by the neurosurgery RMO, Dr Riaz, at 8.00 am during the neurosurgery ward round. He completed the ward round with the neurosurgery registrar rostered on for the Sunday morning, Dr Mahindu, and the clinical nurse shift coordinator, Nurse Hanstrum (who had commenced her shift at 7.00 am, one hour after Nurse Powell took the last blood pressure reading).[204] Because it was a Sunday, those three staff did the whole neurosurgery ward round.[205] There was some pressure to do the ward round early and quickly given the number of patients involved and the likelihood that emergencies would need to be attended to by the registrar immediately after the ward round.[206]

104. Dr Riaz had only been in the neurosurgery ward for approximately two weeks at that time, which was his first experience working in neurosurgery.[207] Dr Riaz had an independent recollection of the events of the ward round on 8 April 2012 as he was made aware of the deceased's death only a couple of weeks after it occurred and

[201] T 156.
[202] T 152 - 154; Exhibit 1, Tab 17 [5] – [6].
[203] T 151 - 152.
[204] T 163.
[205] T 163.
[206] T 210.
[207] T 176.

was required to discuss it with the hospital executive.[208] Dr Riaz specifically recalled reading the deceased's blue medical record files that morning as there were extensive notes made in the last day or so. Dr Riaz recalled that Dr Mahindu looked through the blue file and read Dr Griffin's notes before he went into the deceased's room with the nurse coordinator, which has been confirmed was Nurse Laurent. Dr Riaz did not go into the room as he continued to read Dr Griffin's entry in the inpatient notes.[209] As a result, he did not see or hear anything that occurred in the deceased's room.[210]

105. He recalled that when Dr Mahindu and Nurse Laurent came out of the room, he asked what the plan was and Dr Mahindu replied that the deceased was "for discharge."[211] Dr Riaz enquired what the observations were and, to the best of his recollection, Nurse Laurent told him the observations were stable, which he wrote in the inpatient notes as "obs stable".[212] Dr Riaz did not recall knowing anything specific about the deceased's blood pressure readings or hearing any discussion about any concerns regarding her blood pressure.[213]

106. Nurse Hanstrum has little independent recollection of the ward round attendance on the deceased. She recalls that Dr Mahindu went into the deceased's room and maintains that she entered the room and stood near the doorway to the room.[214] In her statement, Nurse Laurent referred to Dr Mahindu going into the deceased's room and then flicking through the red file, where all the observations charts are kept.[215]. However, in her oral evidence at the inquest she mentioned only that she recalled him entering the deceased's room.[216]

107. Nurse Hanstrum could not recall whether she looked at the deceased's observation charts herself, nor any discussion that was had in the room at that time. Nurse Laurent agreed that issues such as blood pressure would be something that she would routinely discuss with the registrar or RMO during a ward round, but could not recall whether the deceased's blood pressure was discussed on this occasion.[217]

108. It was put to Nurse Hanstrum that Dr Riaz recalled she told him after she left the deceased's room that the deceased's observations

[208] Exhibit 1, Tab 18 [8].
[209] T 182 – 183; Exhibit 1, Tab 18 [11].
[210] T 183 – 184.
[211] Exhibit 1, Tab 18 [12].
[212] T 186, 189 - 191; Exhibit 2, Inpatient Notes, 8.4.12, 08.00.
[213] T 185, 191.
[214] T 167.
[215] Exhibit 1, Tab 16 [11].
[216] T 163
[217] T 164 – 165.

were stable. Nurse Hanstrum could not recall that conversation but accepted that it may have taken place.[218]

109. Nurse Hanstrum's only independent recollection of events was that after Dr Mahindu had spoken to the deceased, Nurse Laurent stayed back a few minutes to make sure that the deceased was "okay to go home because [she] knew of the previous day's events."[219] She wished to confirm whether the deceased "did actually want to go home [and] if she felt all of her issues were resolved."[220] The deceased was apparently happy to go home, which Nurse Laurent observed was not unusual as most people don't want to be in hospital.[221] Nurse Laurent had no further contact with the deceased.[222]

110. Dr Mahindu also gave evidence at the inquest. His evidence was based upon his statement prepared in June 2013, as well as some limited independent recollection.[223] Particularly, at the time he prepared his statement, Dr Mahindu had a memory of events as he had been aware of the deceased's re-admission and death around the time it occurred, although he accepted there was a chance he might have forgotten something given the time that had passed.[224]

111. Dr Mahindu was not part of the deceased's core treating team, and the first time he had any formal knowledge of her care was during the midmorning handover with Dr Kelleher on Saturday, 7 April 2012. Dr Kelleher had already seen the deceased that morning and he explained to Dr Mahindu that she had made a good post-operative recovery and was scheduled for discharge the following day. She was being kept in for an extra day to ensure her bowels were regular and her pain well controlled before discharge.[225] Although the discharge may have been scheduled by Dr Kelleher, it would be Dr Mahindu's role at the next ward round to make an independent assessment and decision that the patient is suitable to go home based upon all the information available at that time.[226]

112. Dr Kelleher did not mention anything about blood pressure parameters for the deceased during the handover.[227] Dr Mahindu was, however, aware that a patient who had undergone this surgical procedure would need to have their blood pressure fairly well controlled.[228]

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[218] T 167.
[219] T 164.
[220] T 165.
[221] T 165.
[222] T 166.
[223] T 201.
[224] T 204.
[225] T 203; Exhibit 1, Tab 19 [5].
[226] T 93, 100.
[227] T 204 – 205.
[228] T 206 -207.

113. In relation to the ward round, Dr Mahindu's evidence was that he would usually go into each patient's cubicle and speak to them directly. At that time he would often ask his RMO to check the observations charts and tell him if there were any concerns.[229] If they were his own patients, he wouldn't need to read the inpatient notes as he would be familiar with their care. If they were patients that had been handed over by another registrar, he might read the inpatient notes if he wasn't sure what was happening with them but not if the case was straightforward.[230] If the patient he was seeing was scheduled for discharge, Dr Mahindu would examine the patient and speak to the nursing staff and the RMO to check whether there were any issues that needed to be addressed before the patient could go home.[231] Dr Mahindu indicated that in those circumstances he would rely heavily upon the opinion of the nurses because they spend a lot of time with the patients.[232]

114. Dr Mahindu's recollection was that, at the time he saw the deceased, Dr Riaz came into the room with him, although he accepted Dr Riaz may have stood in the doorway or corridor.[233] He did recall that he entered the room with one of the nurses.[234] Dr Mahindu remembered that the deceased was sitting up in bed as they entered. He examined her and she appeared fine. He recalled that she was in a good mood, not agitated, and was keen to go home that day.[235].

115. Dr Mahindu also said that his usual practice would be to look at the vital signs or observations himself in those circumstances if he could, although he could not recall whether he looked at the deceased's observations charts on this occasion.[236] He did, however, recall that he was told by either Dr Riaz or Nurse Hanstrum that her observations were stable.[237]

116. Dr Mahindu could not recall whether he read Dr Griffin's entry in the inpatient notes that morning, although he accepted he might well have read it.[238] Whether or not he did read it, he was aware at the time that the deceased had been having pain overnight. He recalled that the deceased had been having some headaches but they were better controlled at that point in time with the use of painkillers.[239] Dr Mahindu's impression at that time was that the deceased had experienced some fluctuations or transient increases

[229] T 210 – 211.
[230] T 211 - 212.
[231] T 211.
[232] T 213, 215.
[233] T 214, 229
[234] T 215.
[235] T 215 – 216, 224 – 225.
[236] T 211.
[237] T 218 - 219; Exhibit 1, Tab 19 [8].
[238] T 214.
[239] T 215.

in her blood pressure earlier as a result of this pain, but at the time he saw her the deceased was pain free and her blood pressure had, as a result, become stable and was controlled.[240]

117. Although it is not recorded in Dr Riaz's note, Dr Mahindu recalled that he performed a neurological examination on the deceased and noted she had a mild left sided pronator drift but normal strength in all her limbs on formal testing. He also noted a right facial droop but was assured this was a pre-operative finding (although Professor Knuckey gave evidence it was a consequence of surgery, but not concerning).[241]

118. There were no other cranial nerve findings of note.[242] She had been up and ambulant and there were no deficits as such.[243] Based upon what he observed and what he was told by Nurse Hanstrum and Dr Riaz, Dr Mahindu did not see any signs "that suggested there was anything else going on that was a point of concern."[244]

119. Before leaving the deceased Dr Mahindu had a discussion with her about the importance of pain control and taking her medications as prescribed, and he emphasised that if she didn't manage her pain this could lead to increased blood pressure.[245] He also recalled discussing her bowels and although she had not had a bowel motion that day she was happy to handle the issue from home with aperients (laxatives).[246] He also told her to come back directly to SCGH if she had concerns.[247]

Were the observations stable?

120. It is apparent that one of the factors that Dr Mahindu took into account in deciding to discharge the deceased was the fact that he believed her observations were stable at that time, as was written in the inpatient notes by Dr Riaz.

121. Professor Stokes explained that the term 'observations stable' is used frequently in medicine and is variable in its meaning. This was borne out by the evidence heard at the inquest, as Professor Stokes indicated that he would generally interpret it as meaning the patient's condition has remained the same (not fluctuating or changing), whether it be bad or good,[248] and Dr Baker agreed with

[240] T 215, 232; Exhibit 1, Tab 19 [8].
[241] T 93.
[242] T 216 – 217; Exhibit 1, Tab 19 [7].
[243] T 232.
[244] T 232.
[245] T 222.
[246] Exhibit 1, Tab 19 [11].
[247] T 222.
[248] T 28.

Professor Stokes' interpretation.[249] Dr Mahindu, on the other hand, interpreted the phrase as meaning that the observations are within normal, acceptable limits.[250] Dr Riaz said he thought it meant they were stable and there were no concerns.[251]

122. Irrespective of how the phrase was used, all of the witnesses who gave relevant evidence at the inquest on this point appeared to agree that it was not correct to describe the deceased's observations as stable at that time, given the changing blood pressure readings taken over the previous 24 hours -36 hours.[252]

123. Ms Thatcher, who appeared on behalf of SCGH and some of its staff, provided a helpful table in her submissions,[253] which I replicate here with some amendments:

Date	**Time**	**BP Reading**	**Author**
6 April 2012	20:00 24:00	160/75 175/95	
7 April 2012	04:00 10:00 16:00 18:30 20:00 24:00	"flatly refused obs" 175/95 220/110 178/90(manual) 185/95 (dynomap) 145/85	Collard? Laurent Watt Hanstrum Watt Powell
8 April 2012	06:00	175/95	Powell

124. The table shows that the deceased's blood pressure readings were neither consistently within normal limits, nor unchanging, from late in the evening of 6 April 2012 onwards. The last reading, taken at 6.00 am on 8 April 2012, was also not reassuring.

125. There was evidence from Professor Stokes that it is expected that a patient's blood pressure will rise in the morning due to the release of cortisols, so it is of itself not concerning that a rise is recorded.[254] However, Professor Stokes indicated that the rise in blood pressure recorded was greater than what would usually be explained simply by the fact it was taken in the early morning.

126. Prof Knuckey described the deceased's high blood pressure readings over 7 April 2012 as showing a "general medical problem" which

[249] T 59.
[250] T 234.
[251] T 195.
[252] T 28 (Prof Stokes); T 48 (Dr Baker); T 79 – 80 (Prof Knuckey); T 165 (Nurse Laurent), T 234 (Dr Mahindu).
[253] Written Submission on behalf of SCGH filed 23 April 2015 [20].
[254] T 26.

needed to be addressed and he would have expected those readings to prompt a resident to call a registrar regardless of any post-operative instructions about blood pressure parameters.[255]

127. Looking at the deceased's observations charts at the time of the inquest, Dr Mahindu accepted that from about the early hours of 6 April, it's clear that there is a general trend towards an increase in blood pressure, although it seemed to abate slightly early on the 7 April before seeming to increase again.[256] He did not think the term labile was applicable to the blood pressure readings[257] but agreed that they had not stabilised. He described the final reading of 175/85 as "still elevated".[258]

Discharge

128. No further observations are recorded as the deceased was now on six hourly observations and was discharged before midday.

129. The last entry in the inpatient notes before discharge was made by Nurse Watt. She recorded that the deceased had normal neurologic observations and the deceased's only expressed concerns were about swelling around her incision line and right-sided mouth droop. The deceased was advised not to drink or drive or do anything that might increase her blood pressure until she was reviewed by Professor Knuckey in approximately one week.[259] She was given prescriptions to take and be filled. According to her husband, the deceased said at the time that one of the medications made her nauseous but she was treated dismissively.[260] Nurse Watt had no independent recollection of seeing the deceased that morning so it was not possible to clarify this with her.[261]

130. Dr Riaz completed the deceased's discharge summary on the Sunday morning. Much of the information on the summary had been entered on previous days by another resident. In this case, Dr Riaz added in the words "discharged home" and a further section advising that the deceased should see Professor Knuckey in seven days, as well as the deceased's medication.[262] Dr Riaz made no entry about the deceased's blood pressure as he was not aware of any concerns regarding her blood pressure.[263]

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[255] T 78.
[256] T 220.
[257] T 223, 233.
[258] T 220.
[259] Exhibit 2, Inpatient Notes, 8.4.12, 11.00.
[260] MFI 1.
[261] Exhibit 1, Tab 15 [12].
[262] T 187.
[263] T 188.

THE DECEASED'S HUSBAND'S ACCOUNT OF HER CARE

131. To provide a more personal perspective on her care on the neurosurgery ward, the deceased's husband provided a statement to the police after her death, as well as the letter referred to above during the inquest.[264] He recalls the deceased experiencing pain from headaches from when she came out of the anaesthetic, but she was told by the doctors that some pain was normal for her type of surgery.[265]

132. The deceased was given a morphine based pain killer at first, but this was changed after she reported it was making her nauseous. Nevertheless, the following morning a nurse tried to give the deceased the original pain killer.[266] This perhaps explains some of the deceased's documented concerns about being told what medication she was being given in advance.

133. The deceased's husband described the deceased as becoming "frustrated because there was a general lack of communication from the medical staff about what was happening to her."[267] He recalls a conversation with the nurse shift co-ordinator (who it would appear was Nurse Hanstrum) on 7 April 2012, which seems to have led to the conversation with Dr Griffin.[268] The deceased and her husband do not appear to have been reassured by their conversations with Nurse Hanstrum and Dr Griffin. He describes their concerns at that time relating to a lack of personal care by the staff and a lack of communication, particularly in relation to medication.[269]

134. The deceased's husband also recalls the deceased calling him in the night saying that she was in pain and nobody was helping her.[270]

135. The deceased's husband described the discharge process as "not very informative," involving a prescription for the constipation medication that had been making her nauseous, Panadol for pain control and a statement "don't drink and don't have sex."[271] They questioned the constipation medication and were told not to fill the script if they didn't like it.[272] He did not recall, at the time he gave the statement to police, being given any information on discharge as to what to do if something happened.

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[264] Exhibit 1, Tab 5; MFI 1.
[265] Exhibit 1, Tab 5 [27].
[266] Exhibit 1, Tab 5 [28].
[267] Exhibit 1, Tab 5 [30].
[268] Exhibit 1, Tab 5 [31] – [34].
[269] Exhibit 1, Tab 5 [43].
[270] MFI 1.
[271] Exhibit 1, Tab 5 [44].
[272] Exhibit 1, Tab 5 [46]; MFI 1.

136. Nevertheless, the deceased was keen to be discharged as she was not happy at the hospital[273] and "she just wanted to get out of there."[274]

137. She did not complain of any particular symptoms on leaving hospital.[275]

EVENTS AFTER DISCHARGE - 8 – 9 APRIL 2012

138. After leaving the hospital the deceased went with her husband to have lunch at a local hotel/restaurant in Nedlands, near to where they were staying with friends in Dalkeith. The deceased's husband recalled the deceased ate only a light lunch and appeared glad to have left the hospital.[276]

139. They then went to Fremantle markets and the deceased walked around the market for about 45 minutes before they returned to their friend's home in Dalkeith. There is no description of the manner in which the deceased walked around the markets in her husband's statement, although I note he had mentioned she was "walking slowly" when she left the hospital earlier that day.[277] They were at the markets for less than an hour.

140. The deceased also apparently went and obtained a prescription for Tramadol, a strong pain reliever. The deceased had been given Tramadol while in hospital but this medication does not appear as a medication on her discharge summary. However, she was given prescriptions to fill upon leaving hospital so I assume one was for Tramadol.[278] This suggests she was continuing with her pain management regime, as recommended by Dr Mahindu.

141. Professor Stokes agreed, when it was put to him by Dr Mahindu's counsel, that this history of events suggested the deceased was not symptomatic for hyperperfusion syndrome from late morning to evening on 7 April 2012.[279] Professor Knuckey also agreed that this account did not suggest the deceased was unwell on discharge.[280]

142. This doesn't necessarily mean the deceased was not developing hyperperfusion syndrome, as she might not have been experiencing

[273] MFI 1.
[274] Exhibit 1, Tab 5 [47].
[275] Exhibit 1, Tab 5 [48].
[276] Exhibit 1, Tab 5 [49].
[277] Exhibit 1, Tab 5 [48] – [50].
[278] Exhibit 1, Tab 5 [46]; Exhibit 2, Discharge Summary 8.4.12.
[279] T 49.
[280] T 94.

symptoms at that time, but it does suggest she was not showing signs of being critically unwell at that time.[281]

143. The deceased then spent the rest of the afternoon/evening resting and chatting to her friend who was their host. The deceased's husband went to bed at about 9.00 pm and the deceased came to bed sometime afterwards, but apparently not late.[282]

144. The next morning, at about 8.00 am, the deceased complained of a headache on the right side of her head. Neither the deceased nor her husband were particularly concerned as she had been experiencing headaches over the previous few days and the hospital staff had told them the headaches were due to the improved flow of blood to her head.[283]

145. The deceased took one Tramadol tablet to relieve the pain and stayed sitting in bed for a while. She later asked her husband for a wet towel to put on her head, which he gave her. After approximately one to one and a half hours, the deceased then told her husband she was going to the toilet. After she left the bedroom he fell asleep.[284]

146. The deceased's husband slept for approximately an hour and when he woke up the deceased was not in the bed. He called out to her and she replied that she was in the toilet. After approximately 10 more minutes had elapsed the deceased's husband went to check on the deceased. She told him she still had a bad headache and looked unwell and a bit sweaty. Her voice was odd when she asked him for some more Tramadol.[285]

147. The deceased's husband went and got the medication and then returned to the toilet. The deceased put out her right hand for the medication but then also put her right hand out again for the glass of water. It was at this time that the deceased's husband noticed the deceased's left arm was hanging down limp. He asked the deceased to move her left arm, which she was unable to do. He then asked her to stand up and he observed she was not using her left leg.[286] She also had a left facial droop.[287] On the basis of what he observed, the deceased's husband thought the deceased had had a stroke and called for an ambulance to attend.[288]

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[281] T 94 - 96.
[282] Exhibit 1, Tab 5 [52].
[283] Exhibit 1, Tab 5 [54] – [55].
[284] Exhibit 1, Tab 5 [56] – [58].
[285] Exhibit 1, Tab 5 [58] – [59].
[286] Exhibit 1, Tab 5 [60] – [61].
[287] Exhibit 1, Tab 23, 5.
[288] Exhibit 1, Tab 5 [62].

148. The ambulance records show the call was received at 11.00 am and the ambulance arrived at the scene at 11.07 am. On arrival the deceased's blood pressure was recorded at 180/110 and her Glasgow coma score (GCS) was 15. She complained of severe pain in the region above her right eye, graded as ten out of ten. Oxygen was administered and her GCS dropped to 14.[289]

149. The deceased was taken by ambulance to SCGH, arriving at 11.32 am.[290] The deceased's husband accompanied her in the ambulance and described her as 'declining on the way"[291] to the hospital.

SECOND ADMISSION TO SCGH – 9 – 12 APRIL 2012

150. The deceased presented to the Emergency Department of SCGH at 11.33 am on 9 April 2012, the morning after her discharge from hospital. At the time of her presentation, the deceased was awake and alert, with a GCS of 15/15 at triage assessment and 14/15 when first seen by the Emergency Department doctor, Dr Fergie.[292]

151. The deceased's first documented observations showed a markedly elevated blood pressure of 234/102 but a normal pulse, oxygenation and temperature. Examination by Dr Fergie revealed left sided weakness and facial droop. The deceased's pupils were noted to be unequal in size (the right larger than the left) and reactive. It was recognised by the medical staff that the deceased was experiencing some form of stroke. Both the neurology and neurosurgical teams were contacted and an urgent CT scan of the deceased's brain was arranged.[293]

152. Shortly after her presentation, at 12.15 pm, the deceased's condition deteriorated significantly. She became more comatose and her right pupil became dilated and non-reactive. Emergency Department doctors intubated and ventilated the deceased in order to protect her airway and facilitate investigations and management. Intravenous mannitol was given to reduce intracranial pressure and a CT scan of her brain was performed.[294]

153. The CT scanning demonstrated extensive pathology. There were two large acute or recent intracerebral haemorrhages in her right cerebral hemisphere. The neurology and neurosurgical doctors were in agreement that haemorrhages detected were devastating and non-

[289] Exhibit 1, Tab 22.
[290] Exhibit 1, Tab 22.
[291] Exhibit 1, Tab 5 [64].
[292] Exhibit 1, Tab 23, 5; Exhibit 2.
[293] Exhibit 1, Tab 23, 5; Exhibit 2.
[294] Exhibit 1, Tab 23, 5; Exhibit 2.

survivable. No surgical intervention was attempted as it was considered that this would be futile and, therefore, inappropriate. The deceased was admitted to the Intensive Care Unit in order to facilitate palliation.[295]

154. The Intensive Care Consultant who was on clinical duty, Dr Stuart Baker, took over care of the deceased on 10 April 2012. Sedation was ceased at 8.00 am that morning in order to assess the deceased's neurologic responses and for Dr Baker to make his own evaluation of the deceased. In the absence of sedation, and with no other identified cause for coma, the deceased's neurologic responses were poor and very abnormal. She showed no signs of consciousness and her posture and response to stimuli pointed to a severe cerebral injury. The deceased did breathe spontaneously on disconnection from the ventilator but, over the day, episodes of bradycardia (very slow heart rate) and a labile high blood pressure were noted. Dr Baker considered these to be signs of extremely high intracranial pressure and likely progression to brain death in the near future.[296]

155. Discussions were held with the deceased's husband and son and it was conveyed to them that the collective opinion of all clinicians involved in the deceased's care was that, regardless of treatments or surgery, she would not survive her current illness. Subsequent to these discussions a decision was made to withdraw physiologic support and analgesic medications were given as needed until the deceased died at 6.52 am on 12 April 2012.[297]

156. The death was reported to the Office of the State Coroner by SCGH.

CAUSE OF DEATH AND MANNER OF DEATH

157. On 16 April 2012, a post mortem examination was conducted by a Forensic Pathologist, Dr Jodi White. The examination showed generalised and coronary atherosclerosis with congestion of the lungs and granular change to the capsular surface of the kidneys. Microscopy of sampled tissues confirmed these findings.[298]

158. Toxicological analysis showed medication consistent with the deceased's hospital care as well as tetrahydrocannabinol and its metabolite.[299]

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[295] Exhibit 1, Tab 23, 5 – 6.
[296] Exhibit 1, Tab 23, 6.
[297] Exhibit 1, Tab 23, 6.
[298] Exhibit 1, Tab 30.
[299] Exhibit 1, Tab 30 and Tab 32.

159. Neuropathological examination showed two large recent haemorrhages involving the right frontal lobe and right temporal lobe with associated midline shift and herniation. Sections of the common carotid arteries showed complete occlusion by atheroma and thrombus in the left vessel.[300]

160. At the conclusion of the post mortem examination and following receipt of all further investigations and the deceased's medical information, Dr White formed the opinion that the cause of death was intracerebral haemorrhage in a lady with underlying cerebrovascular disease and hypertension following a recent right carotid artery endarterectomy.[301]

161. I accept and adopt the opinion of Dr White as to the cause of death.

162. The evidence heard at the inquest supports the conclusion that the cause of death was a known complication of the surgical procedure undergone by the deceased.[302] The reason the deceased underwent the surgical procedure was due to the course of natural disease affecting her carotid artery. Accordingly, I find that the manner of death was by way of natural causes.

163. In the opinion of Professor Stokes, the cerebral haemorrhages most likely arose due to hyperperfusion syndrome, although he accepted they could also have occurred spontaneously.[303] In his evidence, Professor Stokes noted that the autopsy report does not particularly help in identifying whether there was hyperperfusion or not, as the finding of swelling of the brain can be produced by haemorrhages without hyperperfusion syndrome. Nevertheless, Professor Stokes stated "I suspect without any doubt there was a hyperperfusion syndrome going on here."[304] This is relevant as to whether the deceased's death could have been prevented. I deal with this issue below. It is sufficient to say at this stage that Professor Stokes would only go so far as to say "the outcome may have been better"[305] had the deceased's blood pressure been better managed, particularly in the two or three days following her surgery.

[300] Exhibit 1, Tab 30 and Tab 31.
[301] Exhibit 1, Tab 30.
[302] T 12 – 13.
[303] T 36.
[304] T 51.
[305] Exhibit 1, Tab 29, 3.

REVIEW OF THE POST-OPERATIVE MANAGEMENT OF THE DECEASED

Adequacy of Inpatient Notes

164. Professor Stokes was asked to review the medical care provided to the deceased at SCGH during her two admissions. Professor Stokes' initial observation was that the medical notes during the first admission appeared to be inadequate and did not correlate with the observation findings that were taken at the time of review by medical staff and nursing staff.[306] Professor Stokes explained that "there must be adequate notes which tell the doctor who comes along to see a patient exactly the status of the patient."[307] ProfessorStokes observed that, as well as recording the decision, it is appropriate to state the reasons for making the decision and why the decision-maker is doing a particular course of treatment or a particular action.[308]

165. Professor Knuckey agreed that the medical notes during the first admission "certainly don't document things as clearly as they should have."[309]

166. The inadequacies of the inpatient notes have certainly caused some difficulties establishing a chronology of events during this investigation. As noted above, many of the witnesses have acknowledged that their note taking was inadequate and have taken steps to improve the extent of their notetaking since that time.

167. The importance of comprehensive contemporaneous notes cannot be underestimated. I accept that there are time constraints on doctors and nurses and emergencies may intervene. However, there should always be an opportunity to make a record at the end of a shift, with an appropriate notation that the time of the entry is not the time of the recorded events. It is these notes that many witnesses will later rely upon to prompt their recollection of events, as at the time the events may not appear significant and may not impress upon their memory.

168. For example, Ms Burke, on behalf of Nurse Watt and Nurse Powell, pointed to the long delay before they were notified of the death and asked to prepare statements as an explanation for the inability to explain key gaps in the evidence, particularly what occurred between Nurse Watt taking of the SBP reading of 220 at 4.00 pm and Nurse Hanstrum seeing the deceased at around 6.00 pm.[310] I

[306] Exhibit 1, Tab 29, 1.
[307] T 40.
[308] T 42.
[309] T 80.
[310] T 142, T 155 – 156; Written Submissions on behalf of Nurse Julie Watt filed 24 April 2015.

accept that the delay made it difficult for them to have an independent recollection by the time they were preparing their statements, but that is why their notes at the time should have included the important information, so they were not forced to rely solely upon their memories. Nurse Watt made no entry at any stage in the inpatient notes in relation to the SBP reading of 220 that she took, despite it obviously being a significant event. Even if I accept she did follow her usual practice and notify the nurse coordinator as her initial response,[311] there is no reason offered as to why she could not have gone back and made an entry in the inpatient notes afterwards.

169. Dr Griffin's failure to record anything in relation to the blood pressure in her extensive note is also surprising and concerning. However, I accept that at the time she saw the deceased, the blood pressure was falling and she had formed a view that the reasons for the high blood pressure reading had been addressed and it was unlikely to reoccur. Nevertheless, the absence of any reference to the blood pressure in her note meant that an opportunity to pass that information on to Dr Riaz and Dr Mahindu was missed.

170. The inpatient note entries by Dr Riaz for the ward rounds on 7 and 8 April 2012 were specifically criticised. Professor Stokes was concerned that there was a lack of documentation of the discussions that were held between the resident and the registrar.[312] Dr Mahindu commented that Dr Riaz's note had "basically not captured anything at all that has happened."[313]

171. Dr Riaz accepted to a certain extent the criticism of the brevity of his notes. However, he maintained that it was a necessity to keep them brief during a Sunday ward round as there are time constraints to writing the notes in order to get through all the patients. He did, however, accept that they could be done better and gave evidence that he had improved his note taking after this event.[314]

172. Professor Stokes was also critical of the discharge summary signed by Dr Riaz. He considered it to be inadequate as there was no comment of significance made concerning the management of the deceased's blood pressure post operatively or her restlessness and complaints of headache.[315] Professor Stokes accepted that Dr Riaz did not type the entire document himself.[316] However, Professor Stokes also expressed the view that there was an

[311] T 132.
[312] T 43.
[313] T 222.
[314] T 193 - 194.
[315] T 33; Exhibit 1, Tab 29, 3.
[316] T 43.

obligation on Dr Riaz to review all of the notes, including the observation charts, and enter anything of significance.[317]

173. When asked at the inquest about the absence of an entry for 7 April 2012, Dr Riaz explained that he was not concerned that there was no entry for 7 April 2012, as in his experience entries are not necessarily included for every day of a patient's admission.[318] There was no information about her blood pressure as he was unaware it was an issue.

Management of Blood Pressure

174. Professor Stokes also expressed concern about the post-operative management of the deceased. He noted that the deceased appeared to exhibit some episodes of confusion and aggression, which may well have been related to changes in her cerebral circulation. Professor Stokes acknowledged some of this might be attributed to her personality, he did not think that THC withdrawals provided an adequate explanation.[319] Professor Stokes did accept that he did not have experience in what you would expect to see when a regular user of cannabis ceases use,[320] but given Dr Griffin reviewed the deceased and was satisfied at the time that there was no evidence whatsoever for THC withdrawal as an indicator,[321] the evidence strongly suggests that THC withdrawal was not a significant factor here.

175. The elevated blood pressure readings were also a cause for concern. Although they were on the background of a patient that appeared restless, irritable and cross with the situation, which might be the cause of elevated blood pressure, in Professor Stokes' opinion nonetheless her elevated blood pressure should have been investigated and treated.[322] This is particularly so given on 7 April 2012 the observations showed a slow rising. Professor Stokes indicated that in his view more frequent observations of pressure would have been appropriate, to see whether a pattern was established.[323] He also thought a CT scan might have been appropriate.[324]

176. Professor Knuckey agreed that the labile blood pressure, and the fact it was still elevated the morning of discharge, was a concerning factor that probably should have prompted a further period of observation before discharge to establish whether the deceased

[317] T 45 – 46.
[318] T 189.
[319] T 17 – 18, 20; Exhibit 1, Tab 29, 2.
[320] T 39.
[321] T 123.
[322] T 22.
[323] T 22 – 23.
[324] T 48.

really was experiencing hypertension.[325] He considered the episodes of increased blood should have at least been noted in the medical notes and some active decision made as to what to do about them, even if the decision was simply to "observe and see what happens."[326] This is particularly so in relation to the reading of 220, which was potentially serious and something should have been done to make an active decision about her management at that time.[327] Hypertension is a general medical management problem and so a decision needed to be made what to do about it and a conscious decision made whether to treat it or not treat it.[328]

177. Both Nurse Watt and Nurse Hanstrum agreed it was a significant reading and both suggested that their usual practice in those circumstances would be to take immediate action.[329] The problem I am faced with is that there is an unexplained delay of two hours between the reading being taken and Nurse Hanstrum taking action, which suggests that one, or both, of them did not follow their usual practice.

178. There is also no proper explanation for why Nurse Watt wrote in the inpatient notes at 8.15 pm that evening that the blood pressure was now within "exceptible [sic] levels"[330] given the reading recorded at 8.00 pm was above what Nurse Watt would consider acceptable.[331]

179. Dr Griffin recalled that an additional blood pressure reading was taken just before she left the deceased and the systolic blood pressure was below 160.[332] There is no corresponding entry on the observation chart although Nurse Watt indicated that it would be expected to have been entered even though it wasn't part of the set hourly observations.[333] Dr Griffin assumed that Nurse Watt's inpatient note entry at 8.15 pm was referring to this undocumented blood pressure reading when she noted that the blood pressure was now within acceptable levels. If that is so, it does not explain why no notice was taken of the 8.00 pm reading. Dr Griffin does not appear to have been aware of that 8.00 pm reading. Her evidence was that a reading of that level, being above 180, would have prompted her to call a registrar.[334]

180. Nurse Watt could not recall whether she spoke to Dr Griffin about that blood pressure reading.[335] Given she had written it was within

[325] T 79 – 80.
[326] T 85.
[327] T 85.
[328] T 86.
[329] T 137, 158 – 159, 168.
[330] Exhibit 2.
[331] T 133, 139, 140.
[332] T 119 - 120.
[333] T 141.
[334] T 120.
[335] T 144.

acceptable limits, it is likely that if she did speak to Dr Griffin it would not have been to convey any concern about the blood pressure reading. Nurse Watt could not explain the contradiction between her inpatient note entry and the reading taken at 8.00 pm. Certainly, no action was taken by any of the medical or nursing staff in relation to that reading that was recorded in the inpatient notes. If it had been, it might have prompted Dr Riaz, Dr Mahindu or Nurse Hanstrum to take more heed of the deceased's blood pressure on the morning of her discharge.

181. There is also no good explanation provided by any witness for why Dr Riaz was told that the observations were normal on the morning of 8 April 2012, when the last blood pressure reading was not within normal limits and there were concerning fluctuations in the readings over the previous 24 to 36 hour period.

182. Professor Knuckey confirmed that a resident's role during the ward rounds is to follow the registrar and take notes and change drugs. They are not generally making a clinical assessment and they do not review the patient nor make a decision.[336] This is consistent with Dr Riaz's description of his role in the ward round that morning. He was clear that he did not assess the deceased and did not see her observations chart. He believed he was told the information about her observations by the nurse coordinator.

183. Professor Knuckey's evidence was that generally a registrar would rely on the nursing staff during a ward round to inform them about the observation chart, rather than personally reviewing the chart themselves.[337] Consistent with this practice, Nurse Hanstrum acknowledged that it would be her usual practice for the purpose of a ward round to make herself aware of the observations recorded in the night.[338]

184. Further, Dr Mahindu recalled that he was told by either Dr Riaz or Nurse Hanstrum that the deceased's observations were stable and she had had some transient increases in blood pressure related to her poor pain control but they had settled once her pain was controlled.[339] Based on the other evidence, he would seem to have been told this by Nurse Hanstrum.

185. All of this evidence would point towards the conclusion that Dr Mahindu did not look at the observations charts himself. However, although Dr Mahindu did not have a recollection of having looked at the charts he could not say for certain that he did not.[340]

[336] T 92.
[337] T 79.
[338] T 171.
[339] T 218; Exhibit 1, Tab 19 [8].
[340] T 215.

Dr Mahindu seemed to believe there were other witnesses who recalled him looking at the observations chart (perhaps based on the statement of Nurse Hanstrum rather than her oral evidence) and he was prepared to leave open the possibility that he looked at the deceased's observations charts before deciding to discharge her.[341] Whilst it is, therefore, possible that Dr Mahindu looked at the observations charts that morning based on his own concession, the weight of the evidence points towards Dr Mahindu not having looked at the charts himself. Rather, Nurse Hanstrum was the person who did so and then provided Dr Mahindu with a summary of the information.

186. The problem, of course, is that the deceased's observations were not stable, and neither Dr Mahindu nor Nurse Hanstrum suggested that they could be described as stable at the time of the inquest.

187. The question then arises, why would Nurse Hanstrum have described them as so at the time? I am unable to answer that question based on the evidence before me. I am certain it would not have been due to a deliberate decision to mislead anyone as to the true state of the deceased's health. I can only assume that perhaps some confusion may have arisen based upon the lack of correlation between the observations and the inpatient note entries, and the lack of concern raised by anyone involved in the deceased's care in the preceding hours following Dr Griffin's review.

188. The curious thing is that according to Professor Knuckey, there is generally a lot of emphasis throughout the whole neurosurgery ward on management of blood pressure.[342] However, he accepted that this case was unusual in that the staff on the ward did not seem concerned about the deceased's blood pressure on the whole, or at least did not document their concerns.

Management and consideration of symptom of headache

189. Professor Stokes also expressed concern about the deceased's complaints of headache during the post-operative period, which do not appear to have been particularly noted.[343] In Professor Stokes' expert opinion, the symptom of headache, in conjunction with the significant elevation of the deceased's blood pressure on 7 April 2012, should have been a warning sign that there was increasing cerebral oedema in association with a developing hyperperfusion state. Professor Stokes gave evidence that headache is not common in a patient post carotid endarterectomy "if everything is going well."[344] He advised that her symptoms of

[341] T 225.
[342] T 101.
[343] T 21; Exhibit 1, Tab 29, 2.
[344] T 39 – 40.

restlessness and headache after a carotid operation "would make me very worried."[345]

190. Another problem with the lack of detail in the medical notes is that we don't know whether the headache was a localised headache or a diffuse headache, which might provide better guidance as to whether the headache was symptomatic of hyperperfusion syndrome.[346] Professor Knuckey pointed to the fact that headache is a very general sort of symptom, although it can be a symptom of raised intracranial pressure. To some extent, he supported Professor Stokes' criticism of the lack of detailed description about the complaint of headache to the extent it might have provided more information as to the reason for the headache.[347]

191. Dr Mahindu's counsel suggested to Professor Stokes that the type of headache one would expect to see with a hyperperfusion state would be described as typically severe, pounding and migraine in type. Professor Stokes did not agree with this proposition and referred to the Cardiology Review Paper (March to April 2012) in which the authors state that there is a spectrum of clinical symptoms, which can include severe unilateral headache (on the side of the hemisphere that is swelling), but it depends upon the severity of the issue.[348] In his own experience, he has observed a patient with hyperperfusion syndrome who felt only "groggy with a vague sort of fuzzy headache."[349]

192. In Professor Stokes' opinion, more vigorous methods should have been undertaken by the attending medical staff to attempt to reduce the deceased's blood pressure at that time and to investigate the cause of the headache further.[350]

193. Dr Mahindu gave evidence he was aware the deceased had been having some headaches. However, he appears to have been reassured on the morning of 8 April 2012 that her headache was better controlled at that point in time with painkillers.[351]

194. Professor Stokes explained that hyperperfusion is a fluctuating process, so the patient may get better and then get worse.[352] Also, the provision of pain relief might have assisted the headache pain to subside if the deceased was in the early stages of hyperperfusion.[353] Therefore, it is possible that the deceased was developing a

[345] T 40.
[346] T 51.
[347] T 80.
[348] T 49 – 51.
[349] T 50.
[350] T 31; Exhibit 1, Tab 29, 2.
[351] T 215.
[352] T 51.
[353] T 51.

hyperperfusion state even at the time Dr Mahindu examined her, although her headache had temporarily resolved.

195. The deceased did not apparently complain of a headache again until the next morning, at about 8.00 am, shortly before her collapse.[354]

Reasonableness of decision to discharge the deceased

196. Professor Stokes also considered the appropriateness of the medical decision to discharge the deceased on the morning of 8 April 2012. Professor Stokes noted that the discharge was only 16 hours after the deceased had had a "very significant spike of arterial blood pressure."[355] In those circumstances, he would have thought it would have been more appropriate first of all for a blood pressure reading to be taken between the 6.00 am reading and the doctor's review at 8.00 am.[356] Professor Stokes also considered it would have been more appropriate to continue with further review of the patient that day rather than to discharge her at that time. If the deceased had been kept in hospital and her blood pressure had been monitored and it continued to rise, active treatment to reduce her blood pressure could have been implemented and this *may* have averted the haemorrhage.[357] It cannot be said with any greater certainty than that as complications can still continue even when the blood pressure is brought under control.[358]

197. Professor Stokes accepted that although he would expect the RMO and registrar to have hyperperfusion syndrome at the back of their mind,[359] it was a "very difficult scenario,"[360] that faced them.

198. Professor Stokes accepted that it was unlikely that the deceased had suffered the haemorrhages on the morning she was discharged from hospital, although she may have been experiencing oedema in her brain at that time.[361] Professor Stokes thought it most likely the deceased had the two bleeds in the early hours of the morning the following day.[362]

199. Professor Stokes conceded that even with meticulous control of blood pressure a significant number of patients who develop a hyperperfusion state will develop an intracerebral haemorrhage. Depending on the size of the haemorrhage, some can be fatal.[363]

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[354] Exhibit 1, Tab 5 [54] – [55].
[355] Exhibit 1, Tab 29, 2.
[356] T 30.
[357] Exhibit 1, Tab 29, 2 – 3.
[358] T 31.
[359] T 30.
[360] T 28.
[361] T 48.
[362] T 48.
[363] T 13.

However, he also observed that meticulous maintenance of blood pressure could certainly ameliorate the progress of a hyperperfusion state.[364] So, in this case, the deceased's best chance of surviving with a good outcome was if her blood pressure had been managed closely.[365]

200. Professor Knuckey was asked whether there was a reason for the doctors to be concerned the morning of the deceased's discharge. He responded "Well, when you look back in the chart, there is, yes."[366] As to whether, in his opinion, the deceased was suffering from either oedema or the early stages of haemorrhage at that time, Professor Knuckey's evidence was that that it was "impossible to predict" as according to the nursing notes, the deceased was alert and orientated and walking around so, from a neurological point of view, she appeared normal at that time.[367]

201. Professor Knuckey confirmed that if he had been informed of the deceased's observations recorded in the 24 hour period before she was scheduled to be discharged, he would have recommended that she be kept in for another 24 hours for further observation.[368] Whether the deceased's problem was medical or some other issue, he considers it was hard to tell on the information available.[369] He agreed that, looking in retrospect, it is possible her headache and confusion may well have been due to hyperperfusion syndrome, but at the time it would have been hard to make that diagnosis.[370] However, Professor Knuckey was still "not totally convinced" that the deceased had developed hyperperfusion syndrome because her symptoms and conduct could also be related to her known anxiety disorder.[371] Therefore, he maintained he could not be absolutely sure the deceased had hyperperfusion syndrome developing while at SCGH.[372]

202. Professor Knuckey also suggested that the stroke may have been simply as a result of a spike in blood pressure on that morning, although he considered the haemorrhagic stroke was related in some way to the surgery[373] Irrespective of the cause, he agreed that the best way to manage the deceased was to keep her blood pressure down within the parameters he had recommended, and the best place to do that was in hospital.[374]

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[364] Exhibit 1, Tab 29, 2.
[365] T 33.
[366] T 79.
[367] T 80.
[368] T 82.
[369] T 82.
[370] T 83.
[371] T 83.
[372] T 83.
[373] T 83 – 84, 95.
[374] T 84.

203. However, similarly to Professor Stokes, Professor Knuckey could not say that the outcome would have been different. Professor Knuckey noted that the literature does not conclusively show that controlling the blood pressure will make any difference to outcome, although it is generally presumed that that it can help prevent an intracerebral haemorrhage.[375]

204. Dr Baker was also asked his opinion about the decision to discharge, given he had reviewed the deceased's medical records. Dr Baker acknowledged that at the time he was caring for the deceased at SCGH he had reviewed the deceased's medical records and had concerns about the deceased's blood pressure control during her first admission. Given her elevated blood pressure readings, Dr Baker had been surprised that the deceased had been discharged in those circumstances.[376] He had discussed some of those concerns with the deceased's husband at the time.[377]

205. Nevertheless, Dr Baker acknowledged at the inquest that while "it's easy to put everything together in retrospect,"[378] he couldn't put himself in a position along the trajectory where he would have picked it up at the time.[379]

206. Dr Mahindu was asked at the inquest whether, looking at the information at this time, he might have done anything differently. He candidly agreed that he would think so, noting that he would want to perhaps get better control of her pain and see if this would cause her blood pressure to settle before sending her home or, if it did not, consider whether she needed treatment.[380] He now questions the appropriateness of his decision to discharge her, based upon all the available information, including the blood pressure readings.[381] He agreed with Professor Knuckey's opinion that, in hindsight, it would have been better to keep the deceased in hospital for a further 24 hours for observation.[382]

207. Dr Mahindu was also very clear at the inquest about the impact this case has had on the way he practices now. He gave evidence that he always personally looks at the observations charts now and if he saw a patient with vital signs like the deceased's he would not even consider discharging them. In any event, he endeavours now to speak to a consultant before discharging any patient, even if it looks very simple.[383]

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[375] T 84.
[376] T 62.
[377] T 61 - 62.
[378] T 62.
[379] T 58.
[380] T 220, 223, 226.
[381] T 224.
[382] T 226, 235
[383] T 226.

COMMENTS IN RELATION TO PUBLIC HEALTH GENERALLY

208. All of the medical experts, including a very candid Dr Mahindu, agreed that the decision to discharge the deceased on the morning of 8 April 2012 was, *in hindsight*, not the preferred option. They all agreed it would have been preferable to have kept the deceased in hospital for a further 24 hours to monitor her condition and determine whether her blood pressure would stabilise on its own or required further management. However, the advantage of hindsight allowed the experts to gain a much clearer clinical picture of the deceased's state of health on the morning of 8 April 2012 than was available to Dr Mahindu that morning.

209. At the time, Dr Mahindu reviewed the deceased to consider her discharge, there had been several missed opportunities for nursing staff to raise the alert in relation to the deceased's increasing and fluctuating blood pressure. For reasons that are not entirely clear, the nursing staff in the preceding day to day and a half did not approach the deceased's fluctuating blood pressure with the usual concern that would, according to Professor Knuckey, be expected on the neurosurgery ward. Even when concern was raised, following the concerningly high reading of 220 SBP, there was an unexplained delay of approximately two hours before the next person went and saw the deceased. The lack of adequate documentation about the blood pressure in the inpatient notes also made it more likely that the doctors, coming in to review the deceased for only short periods, might miss the signs that something was going wrong.

210. In addition, it appears that the summation of the deceased's clinical state over the preceding 24 hours given to Dr Mahindu by Nurse Hanstrum, and which he relied upon, did not properly reflect what had actually occurred.

211. To compound the problem, on the morning of her discharge, the deceased was feeling better (and understandably wanted to leave the hospital) and was not showing any clinical signs suggesting she was unwell, other than the elevated blood pressure reading at 6.00 am that had apparently not been pursued with any action and was not brought to Dr Mahindu's attention.

212. Therefore, in the context of what was known by Dr Mahindu that morning, I do not find that it was unreasonable for him to have discharged the deceased. I do, however, find that the evidence discloses there were omissions and a lack of documentation by the nursing staff that should not have occurred and, if more diligence had been shown it might have prompted Dr Mahindu to make a different decision (as he now acknowledges) and potentially avoided this tragic outcome. I make this comment while acknowledging

Professor Stokes' expressed opinion that the nursing notes were extremely accurate.[384] With due respect to Professor Stokes, some of the omissions in, and confusion arising from, the notes did not become apparent until during the inquest.

213. I do not find that the deceased's death could definitely have been prevented. The evidence before me does not point conclusively to the deceased having developed a hyperperfusion state at the time she was discharged from SCGH or even that this was the definite cause of her haemorrhage, although I accept Professor Stokes' opinion that it is the likely cause of the haemorrhage. In any event, even if the deceased had developed a hyperperfusion state and it had been properly diagnosed and her blood pressure managed closely, there is no guarantee the outcome would have been any different.

214. However, it does not change the fact that the deceased was left feeling, quite rightly, that her post-operative care was not as attentive and compassionate as it should have been while she was in hospital. Further, her husband was left in the awful situation of having to find his wife in a critical state, where help was not close by, the following morning.

215. The deceased's husband attributes the lack of concern about the deceased's blood pressure and her other symptoms to discrimination based upon her Anglo-Indian descent.[385] Having read all the witness statements and seen and heard many of the nurses giving oral evidence at the inquest, I have not formed that view. However, it does appear to me that the deceased, probably due in part to her pre-existing anxiety disorder and no doubt the stress and pain caused by her surgery, did not endear herself to the nursing staff by some of her more direct and challenging behaviour.

216. This does not mean that the nursing staff responded by deliberately failing to provide the deceased with appropriate and attentive medical care. However, it seems likely that some of the deceased's concerning clinical observations were attributed by the nurses to her general psychological state rather than considering the possibility that her behaviour and complaints might be due to a developing complication of her surgery. They appear to have then conveyed their views to the doctors who reviewed the deceased.

217. Given the problems with the documentation, and the difficulties with witnesses' limited recollections, it is not possible to specifically find that any particular witness failed to provide a standard of care

[384] Exhibit 1, Tab 30, 3.
[385] MFI 1.

to the level that it constituted a significant departure from accepted professional standards.

Changes since the death of the deceased

218. I have already noted that a number of witnesses, including Dr Griffin and Dr Mahindu, gave evidence that as a result of the death of the deceased and the subsequent investigation, they have reviewed their practices and made changes.

219. In addition, although not specifically prompted by the death of the deceased, a number of changes have been introduced at SCGH since April 2012 that, if in place at the time the deceased was treated, would likely have resulted in different actions being taken.

220. In January 2013, SCGH introduced the Observation and Response Chart (ORC), a single parameter, multi-tiered response chart.[386] If the ORC had been in use at the time the deceased was treated, there were a number of occasions that would have resulted in escalation.[387] Significantly, in the 33 hours between 9.00 pm on 6 April 2012 and 6.00 am on 8 April 2012 there were seven occasions where compliance with the ORC would today require escalation in the deceased's care, including increased surveillance, senior nurse review and medical review, all due to hypertension.[388]

221. In conjunction with, and in support of, the ORC implementation SCGH also implemented a clinical deterioration policy[389] on August 2013.[390] The purpose of the clinical deterioration policy is, amongst other things, to describe the elements for timely recognition and response to clinical deterioration of patients and enhance patient safety by improving the recognition of abnormal vital signs.[391]

222. In addition, a new Clinical Handover Policy was implemented in August 2014 to apply National Standard 6.[392] It reportedly brought about marked change to the handover practices within SCGH.[393] Nursing staff handovers are now more comprehensive and it is mandated practice to do a bedside nurse to nurse handover for "every patient, every shift, and every time."[394] Professor Stokes confirmed that the new procedure is intended to ameliorate

[386] Exhibit 3 [9].
[387] Exhibit 3 [10].
[388] Exhibit 3 [13].
[389] SCGH Policy #234 Clinical Deterioration.
[390] Exhibit 3 [15].
[391] Exhibit 3 [16].
[392] Exhibit 3 [25].
[393] Exhibit 3 [26].
[394] Exhibit 3 [27].

previously observed problems with clinical handover, such as arose in this case.[395]

223. Dr Baker agreed that the new procedure is a marked improvement on the old system as it gives earlier warning of deterioration in patients so that they get more prompt reviews.[396] Dr Baker also agreed that the new form for charting observations is a marked improvement.[397] He agreed that, if the current chart had been in use at the time the deceased was recovering from surgery it probably would have escalated her matter to a medical review.[398]

224. Professor Knuckey, who is the Director of Neurological Services at SCGH, agreed, noting in particular that the new system has changed handover dramatically. He described the new system, which involves the two rotations of residents ideally having a dedicated period of over an hour to hand over each individual patient.[399] Professor Knuckey could not recall at the inquest having had any recent issues with handover, since the new process came into effect.[400] He also agreed that the changes overall are an improvement, and observed that the consultants receive many more phone calls as a result.[401]

225. There have also been significant policy changes introduced at SCGH related to inpatient documentation.[402] Significantly, the policy requires that patients admitted are to be reviewed by a consultant within 24 hours, with a fully documented management plan to be recorded. In addition, a change that would have assisted in this case is that all entries are to be written contemporaneously or, where this is not possible, to identify additions.[403]

226. It is reassuring that the expert witnesses are in agreement that the changes implemented at SCGH since the start of 2013 should go a long way towards ensuring that in a similar situation involving a patient with increasing blood pressure they would be monitored much more closely.

CONCLUSION

227. The deceased underwent elective, but necessary, surgery at SCGH on 4 April 2012. After a period of recovery in hospital, she was

[395] T 16 – 17, 24, 36.
[396] T 63.
[397] T 64.
[398] T 64.
[399] T 81.
[400] T 76.
[401] T 82.
[402] SCGH Policy #159 Inpatient Documentation – Exhibit 3 [24].
[403] Exhibit 3.

discharged home on 8 April 2012. On the day of her discharge, the deceased appeared well but the following morning she suffered a catastrophic stroke, the effects of which could not be treated and resulted in her death on 12 April 2012. The stroke was a recognised risk of the surgery.

228. The investigation into her death has revealed that, for reasons that are not entirely explained, warning signs that the deceased might be developing complications after the surgery were not heeded by medical and nursing staff.

229. The deceased's husband, who expressed his concerns about the deceased's care even at the time she was in hospital, now feels that she was treated by the hospital staff as a person who was unimportant and not deserving of the highest standard of care. I have no doubt that all of the staff at SCGH would be horrified to know that this is the impression they left upon a grieving husband.

230. Since that time, both individually and organisationally, changes have been made that will hopefully ensure that in a similar situation the warning signs will be heeded. Accordingly, I make no recommendations.

Sarah Linton
Coroner
12 August 2015