CORONERS ACT, 2003

SOUTH  *AUSTRALIA*

FINDING OF INQUEST

An Inquest taken on behalf of our Sovereign Lady the Queen at Adelaide in the State of South Australia, on the 13th, 14th, 15th and 16th days of February 2018, the 6th, 7th, 8th and 15th days of March 2018 and the 10th day of October 2018, by the Coroner's Court of the said State, constituted of Jayne Samia Basheer, Deputy State Coroner, into the death of Stephen Robert Atkins.

The said Court finds that Stephen Robert Atkins aged 53 years, late of 3 Price Street, Hindmarsh Island, South Australia died at the Flinders Medical Centre, Flinders Drive, Bedford Park, South Australia on the 23rd day of March 2015 as a result of fentanyl and oxycodone toxicity. The said Court finds that the circumstances of his death were as follows:

1. Overview and primary findings

1.1. On Friday 20 March 2015 Mr Stephen Robert Atkins[1] presented at the Emergency Department (ED) of the Flinders Medical Centre (FMC) with a 7-day history of Horner's Syndrome and right arm radiculopathy.[2]

1.2. Various tests were conducted, the results of which excluded any immediate life threatening condition. Mr Atkins was admitted to the FMC and transferred to Ward 6C (the Stroke and Neurology Ward). He remained there over the weekend. A 'non-

[1] Stephen Robert Atkins will be referred to hereinafter as 'Mr Atkins' or 'the deceased'

[2] Exhibit C4 at pages 15-21 and 28-30; Transcript, pages 21-22; Horner's Syndrome is a combination of signs and symptoms caused by the disruption of a nerve pathway from the brain to the face and eye on one side of the body. Radiculopathic pain is neuropathic pain caused by irritation of the nerves.

urgent' Magnetic Resonance Imaging (MRI) scan was scheduled to occur on Monday 23 March 2015.

1.3. On Monday 23 March 2015 at approximately 6:05am nursing staff entered Mr Atkins' room to take observations of his vital signs, but he was found to be unresponsive. A Medical Emergency Response (MET call) was made and the team commenced resuscitation. The attempted resuscitation continued for approximately 40 minutes, but ultimately it was unsuccessful.

1.4. Mr Atkins' death was reported to the State Coroner because it was an unexpected death. Section 28(1) of the *Coroner's Act* 2003 mandates the reporting of such deaths.

1.5. It is the purpose of this inquiry to examine the cause and circumstances of this death.

1.6. For the reasons set out in this finding, I have concluded that:

1) The cause of death can be attributed to fentanyl and oxycodone toxicity;

2) The death was a preventable death;

3) The proper application of the hospital escalation pathway protocols that were already in place at the FMC at the relevant time would have most likely prevented Mr Atkins' death; and

4) Since the death a number of measures have been implemented at the FMC which are designed to reduce the likelihood of the recurrence of a similar event in the future.[3]

2. Introduction

2.1. Stephen Robert Atkins was aged 53 years at the time of his death. Mr Atkins was a happily married man with four adult children and five grandchildren with whom he had a very close relationship.

2.2. On Friday 20 March 2015 he and his wife, Lee-Anne Atkins ('Mrs Atkins'), presented at the ED of the FMC. Mr Atkins presented with a 7-day history of Horner's Syndrome and right arm radiculopathy.[4]

[3] Refer Inquest Findings at pages 63-65
[4] Exhibit C4 at pages 15-21 and 28-30; Transcript, pages 21-22

2.3. Various tests were conducted the results of which excluded any immediate life threatening condition. Mr Atkins was admitted to the FMC and transferred to Ward 6C. He remained there over the weekend. A 'non-urgent' Magnetic Resonance Imaging (MRI) scan was scheduled to occur on Monday 23 March 2015.

2.4. Throughout his short hospital stay Mr Atkins experienced high levels of pain which was managed by opioid analgesia.

2.5. The deceased's past medical history included chronic pain due to degenerated discs in the neck and lower back. Mr Atkins had relied on opioid medications in the past for pain management, but he had weaned himself off these medications due to the unpleasant side effects and concerns about the risks of addiction. For around 12 months prior to his death he had relied instead on over-the-counter medications such as paracetamol and codeine.[5] However, notwithstanding some initial reservations, whilst in the ED he accepted the advice of medical staff that his pain was best managed in the short term by opioid analgesia.

2.6. At the time of his death Mr Atkins had been prescribed several PRN (as needed) opioid medications, namely:

- Oral oxycodone, 10-20mg, four times per day (QID);
- Fentanyl, 75-150µg, two-hourly with subcutaneous administration (on condition of a sedation score of less than two); and
- OxyContin, 30mg, twice daily.[6]

2.7. In the days leading up to his death he had received repeated doses of these medications, in accordance with the PRN prescription. Notwithstanding the opioid analgesia, Mr Atkins' pain remained poorly controlled. The nature and suitability of the opioid analgesia, the dosages and their use in combination will be examined in this finding.

3. Issues at Inquest

3.1. The key issues which are to be determined include:

1) The cause of death;

2) The medical management of the deceased in the ED and post-transfer to Ward 6C;

[5] Exhibits C4 and C12; Transcript, page 21
[6] OxyContin is a slow-release form of oxycodone

3) The suitability of the four-hourly observation regime, the competency of monitoring and recording of observations by ward nursing staff, and their compliance with hospital protocols and escalation pathways;

4) The adequacy of knowledge, training and experience of medical and nursing staff in the use of opioid analgesia to manage acute pain; and

5) Initiatives that have been taken by FMC since late March 2015 to address issues which relate to the circumstances of Mr Atkins' death.

4. Cause of death

4.1. Dr Cheryl Charlwood is a forensic pathologist at Forensic Science South Australia. A post-mortem was conducted on 26 March 2015. Two reports were provided to the Court and Dr Charlwood gave oral evidence to the Inquest.[7]

4.2. No clear anatomical cause of death was identified.[8]

4.3. Biochemistry and toxicology testing was undertaken. The most pertinent findings were the presence of fentanyl and oxycodone at levels which were higher than clinically derived levels. The oxycodone level was about 0.20mg/L (therapeutic range 0.02-0.05mg/L) and the fentanyl level was about 4µg/L (therapeutic level 0.6-3.9µg/L). Other prescription medications were detected at levels that were consistent with clinically derived therapeutic concentrations. No alcohol or other drugs were detected within the blood.[9]

4.4. Apart from confirmation by Professor Blumberg of the cervical spine disease, no other relevant pathological findings were recorded.[10]

4.5. During her evidence Dr Charlwood confirmed that a combination of factors that included marked pulmonary oedema, a history of sleep apnoea, nausea and vomiting and the observed snoring at around 5am on 23 March 2015, were entirely consistent with the effects of opioids and potential opiate-induced respiratory depression. It was

[7] Exhibit C6 Report of Dr Charlwood; Exhibit C6a Supplementary Report; Transcript, pages 46-66
[8] Exhibit C6; Transcript, pages 51 and 61
[9] Exhibit C2a Toxicology Summary Report dated 2 June 2015; Exhibit C6 at page 3; Transcript, page 50
[10] Exhibit C3a

noted that marked pulmonary oedema is very commonly observed and reported in deaths due to opioid toxicity.[11]

4.6. Dr Charlwood concluded that having regard to all of the circumstances and findings, the cause of death could be attributed to fentanyl and oxycodone toxicity and I so find.[12]

5. Undisputed evidence

5.1. The following matters are not disputed:

a. The Adult Rapid Detection and Response Chart (RaDAR) is a chart produced by SA Health for use in public hospitals in South Australia and was in use at the FMC at the relevant time to record patient observations of vital signs.

b. The RaDAR chart provides a guide to assessing the level of consciousness/sedation as follows:

3	Difficult to rouse (severe respiratory depression)
2	Easy to rouse, difficulty staying awake
1	Easy to rouse
0	Awake, alert

c. Throughout his admission Mr Atkins' sedation score was recorded as zero.

d. Throughout his admission Mr Atkins' respiratory scores fell within normal range (ie 16-20).

e. Pain scores are measured on a scale of 0-10 with zero being the lowest amount of pain the patient has experienced and a score of 10 being the highest such level of pain.

f. The medication chart accurately recorded all medications (non-opioid and opioid medications) that were prescribed for Mr Atkins and the dosages that were administered during his admission.

g. All opioid medications were given in accordance with the PRN prescription.[13]

h. The RaDAR observation chart contains four shaded zones, namely, purple, red, yellow and white. The patient's vital signs invariably fell within one of the shaded

[11] Exhibit C6a and annexure (Article entitled 'Opioid Toxicity' by David Dollinak; Transcript, pages 51-55
[12] Exhibit C6 at page 3; See also evidence of Professor Jason White, Professor of Pharmacology and Head, School of Pharmacy and Medical Sciences, University of South Australia, Inquest Findings at page 57
[13] Exhibit C5 at pages 85-91

portions. No action is required for observations which fall within the white zone. However, if observations fall within the yellow, red or purple zone, certain escalation pathways are activated and action is required as detailed below.

i. Notwithstanding the criteria being present on several occasions during Mr Atkins admission, the relevant escalation pathways were not applied.

6. The RaDAR Escalation Pathway Protocols

6.1. It is pertinent to set out at the outset the various response criteria and actions that are required pursuant to the RaDAR escalation pathway protocols:

Medical Emergency Response (MER) Call (PURPLE ZONE)

Response Criteria	**Actions Required ASAP**
Respiratory or cardiac arrest	Place emergency call and specify location
Threatened airway	Initiate basic life support
Significant bleeding	Notify senior doctor responsible for the patient
Any observations in a purple zone	Increase frequency of observations post intervention
Unexpected or uncontrolled seizure	
Unattended MDT review	
You are worried about the patient	

Multi-Disciplinary Team (MDT) Review (RED ZONE) *Minimum of registered nurse and medical doctor - check for modifications

Response Criteria	**Actions Required**
Unrelieved chest pain	MDT to review patient within 30 minutes (Country Hospitals refer to local guidelines)
Any observations in a red zone	Increase in frequency of observations
Urine output less than 30mL/hr over 4 hours from patient with IDC or patient has not voided for over 12 hours	If MDT not attended within 30 minutes escalate to MER
You are worried about the patient	

***3 or more observations in the red zone, escalate to MER**

RN Review and Notify Shift Coordinator (YELLOW ZONE)

Response Criteria	**Actions Required**
Any observations in a yellow zone	Registered nurse must review the patient
New or unexplained behavioural change	Increase in frequency of observations
You are worried about the patient	Manage anxiety, pain and review oxygen requirements

***3 or more observations in the yellow, escalate to MDT Review.**[14]

7. Evidence of the Atkins family

7.1. The deceased's wife, Lee-Anne Atkins, provided a detailed statement to the Court and she gave oral evidence.[15]

7.2. The Court received and considered email correspondence from Mrs Atkins dated 13 April 2015 in which she set out her recollection of events and various family concerns relating to her husband's death. The material included copies of correspondence and exchanges between the family and the Southern Adelaide Local Health Network (SALHN).[16]

7.3. Mr Atkins' son, Jamie Atkins, provided a statement to the Inquest.[17] The contents of the statement were not challenged and he was not required to attend at Court for cross-examination.

7.4. I do not intend to refer to all of the matters that have been raised by Mrs Atkins and her family. Suffice it to say that I have read and considered the material as part of the overall assessment of this matter.

7.5. The salient features of the evidence given by Mrs Atkins and her son Jamie can be summarised as follows. Mr Atkins suffered from chronic pain due to a back and neck condition and it was being managed by paracetamol and codeine.

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[14] Exhibit C5a (coloured copy of Mr Atkins' RaDAR observation chart); see also C5 at pages 81-84

[15] Exhibit C4; Exhibit C4a; Transcript, pages 17-44

[16] Exhibit C4a email of Lee-Anne Atkins and family to the Coroner's Court dated 13/4/2015 (8:55am); emails from Jamie Atkins to SALHN dated 26/10/15 (11:08am), 27/10/2015 (11:13am), letter to Mrs Atkins from Associate Professor Morton, Executive Director, SALHN dated 30/11/2015 and File Note of family meeting at SALHN dated 17/11/2015; retrospective progress note dated 19/11/2015 and notes of 'Jasmine'

[17] Exhibit C12

7.6. On Friday 20 March 2015 Mr and Mrs Atkins arrived at the ED at around 5:30pm and Mr Atkins was subsequently admitted as a patient. Mrs Atkins visited her husband each day over the coming weekend.[18]

7.7. On Saturday 21 March 2015 Mrs Atkins arrived at the hospital at around 10:30am. Her husband had already been reviewed by an intern, Dr Symes, and stroke consultant, Dr Cheruvu. Dr Symes had increased the initial oxycodone dosage of 5-10mg (as prescribed in the ED) to 10-20mg (QID). A second opioid medication was added to the PRN prescription, namely 75-150µg of fentanyl, two-hourly and on condition that the sedation score was less than two.[19]

7.8. During the visit Mrs Atkins described her husband as 'a bit drowsy', a matter which she attributed to the effects of the medication.[20] She remained at the hospital for most of the day and Mr Atkins became 'a bit more zoned out'. Nursing staff attended periodically. Mrs Atkins left the hospital at around 7:30pm.[21]

7.9. On returning the following morning at around 10-10:30am (Sunday 22 March 2015), Mrs Atkins said that that her husband was 'very groggy, he was very out of it'. He mentioned that he had seen the doctor but Mrs Atkins could not make any sense of his conversation, which she described as 'garble' and Mr Atkins was unable to relay anything about the doctor's visit.[22]

7.10. Jamie Atkins and his wife had arrived on the ward a short time beforehand and he asked his mother what was wrong. He also described Mr Atkins as 'a bit out of it'.[23]

7.11. They decided to approach the doctor who was still in the corridor. There is no dispute that the doctor with whom they spoke was Dr Marantos. Mrs Atkins said they told him: 'There's something terribly wrong. That's not his normal self. He's very drowsy and he's out of it so what's going on?' or words to that effect. Dr Marantos suggested that the painkillers were making him drowsy and there was also discussion about the pending MRI. Dr Marantos said that the pain was being monitored and, if it was to get

[18] Exhibit C4 at page 3
[19] Exhibit C4 at pages 35-41; Transcript, pages 25-26
[20] Exhibit C4 at pages 42-43
[21] Exhibit C4 at pages 48-50; Transcript, pages 24-26
[22] Transcript, page 28
[23] Exhibit C4a at pages 52-54

worse, then the MRI would be done immediately. However, at that stage the plan was for the MRI to be done on the Monday morning.[24]

7.12. Dr Marantos did not review Mr Atkins at this time.

7.13. Mrs Atkins said that the grogginess did not improve throughout the rest of the day:

> 'No, it didn't get better. He would fall asleep, he'd wake up, he'd have a little conversation with me not very long, five or 10 minutes and then he'd be out of it again and that was going on and off most of that morning.' [25]

7.14. Jamie Atkins corroborated his mother's account. He was shocked and confused about the change in his father's condition and he did not understand 'why he wasn't being tested'.[26]

7.15. <u>The gasping incident</u>

At around lunchtime on Sunday 22 March 2015 Mr Atkins was asleep and, on waking, he 'let out a really big gasp'. Mrs Atkins, her son Jamie and an unidentified nurse were present and they witnessed this incident, which will hereinafter be referred to as 'the gasping incident'. On waking Mr Atkins said:

> 'Shit that scared me, I didn't think I was going to wake up. I couldn't breathe'.[27]

7.16. According to Mrs Atkins the nurse was standing right next to him and she asked whether Mr Atkins suffered from sleep apnoea. She told the nurse that her husband did have sleep apnoea, but he did not use a CPAP machine. The nurse then took Mr Atkins' observations (on a mobile device). The nurse then left.[28]

7.17. Mrs Atkins remained at the hospital. She did not recall any medical assessment being conducted during the day. A pattern of behaviour was described whereby Mr Atkins would wake up and she would start talking to him, however before she even got a sentence out, 'he was gone again'. At one point she said that he appeared to be hallucinating and speaking to his granddaughter, Marley, who had not visited the hospital on that day. Mr Atkins believed that Marely was sitting on the edge of his bed. When Mrs Atkins told him that Marley was not there he said 'Yes, she's sitting here on

[24] Exhibit C4 at pages 52-60; Transcript, page 29
[25] Ibid
[26] Exhibit C12 at pages 6-15
[27] Transcript, pages 29-30; See also Exhibit C4 at page 3;
[28] Transcript, pages 30-31

the edge of the bed' and he appeared to be patting her. Mr Atkins was described as very hot and sweaty at this time.[29]

7.18. In relation to medication, Mrs Atkins recalled nurses coming and going and giving 'a top up of medication'.[30]

7.19. Mrs Atkins believed that her husband was concerned about the grogginess. For example, he said 'Oh these drugs are bad love. I don't want them to give me any more'. It was agreed between them that he would ask the staff to stop the oxycodone.[31]

7.20. <u>The shower incident</u>

During the afternoon Mrs Atkins assisted her husband to have a shower, hereinafter referred to as 'the shower incident':

> '…I actually had him on the shower chair and he kept falling asleep and I had to keep rousing him to wake back up while he was having a shower, and he'd just go. Then I finally got that done and then from there I had to manage to put him onto the toilet seat so I could dry him 'cos he couldn't stand up, and the same thing, he was falling asleep, very drowsy…'[32]

7.21. This state of affairs led her to approach the nurses' station where she spoke to a nurse. During her evidence the estimated time of the conversation was around 3pm or 4pm. Given the contents of an email dated 13 April 2015, I find it more likely that the conversation occurred at around 5pm-6pm. Nothing turns on this fact. [33]

7.22. At the time of giving evidence on 13 February 2018 Mrs Atkins thought the nurse at the station may have been called Joanne, but she could not be sure. She told this nurse about the gasping incident, her concerns about the level of drowsiness and that Mr Atkins was unable to stay awake for longer than 5 to 10 minutes at a time:

> 'We discussed the fact that Stephen did not seem able to stay awake. I also told her about Stephen's sleep apnoea and that I had told the other nurse about it as well. I remember that the nurse told me that it was a very fine line that they had to tread with Stephen to manage his pain and level of sedation'.[34]

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[29] Exhibit C4 at pages 68-69; Transcript, pages 31-32
[30] Exhibit C4 at page 70
[31] Exhibit C4 at page 71; Transcript, pages 33-34
[32] Exhibit C4 at pages 78-79; Transcript, pages 33-34
[33] On 13 April 2015 an email was sent by Mrs Atkins to the Coroners Court. There was a reference in the email to this particular conversation occurring at around 5pm-6pm. Given the date of the email, it is likely that the events and times at which things occurred were much fresher in Mrs Atkins' memory than on the date of giving evidence (13 February 2018): Exhibit C4a
[34] Exhibit C4 at pages 72-75; Transcript, pages 32-33

7.23. The vomiting episode

Mrs Atkins subsequently encouraged her husband to have some dinner. He had a small amount of food but then he vomited twice. This event will be referred to hereinafter as 'the vomiting episode'.[35]

7.24. At about 7pm Mrs Atkins decided to go home, but Mr Atkins did not want her to leave. Given her husband's demeanour Mrs Atkins remained for a further 30 minutes. The conversation continued 'in spits and spats' with Mr Atkins dozing on and off in between. Before she left Mrs Atkins reminded her husband to tell the staff that he did not want any more medication.[36]

7.25. At around 6am on the following morning, Monday 23 March 2015, Mrs Atkins received a telephone call from the hospital. She was told that her husband was in cardiac arrest and that attempts were being made to resuscitate him. By the time she and other family members arrived at the hospital Mr Atkins had passed away.[37]

7.26. The family met with social workers and staff from the Intensive Care Unit. They were told that resuscitation had been attempted for 40 minutes without success and that the nurses in charge had been sent home due to shock. The family was informed that the matter would be reported to the Coroner.[38]

7.27. Several months elapsed before they received any contact from the FMC. The family gained the impression that the hospital was not interested in the trauma they had experienced.[39] A meeting was subsequently held at the hospital with Dr Cheruvu (the stroke consultant on the weekend of Mr Atkins' death) and some other hospital staff, albeit not those who had been responsible for his care.

7.28. I found Mrs Atkins to be a credible and reliable witness who answered questions in a direct and forthright manner. I accept her evidence in its entirety.

7.29. So far as the various conversations to which the witnesses attested are concerned, it is always difficult for a witness to recount, at a much later time, such conversations verbatim (ie. in exactly the same words as were used at the relevant time). That said, I

[35] Exhibit C4 at pages 76-77; Transcript, pages 33-34
[36] Transcript, pages 34-35
[37] Exhibit C4 at pages 80-82; Exhibit C12 at page 19
[38] Transcript, pages 35-36; Exhibit C4a (email dated 13/4/2015 and email dated 26/10/2015 at 11:08am)
[39] Exhibit C4a (Emails to SALHN from Joshua Atkins dated 26/10/2015 and 27/10/2015)

am satisfied that these conversations took place and that the gist of them was accurately recounted to the Court.

7.30. The evidence of Jamie Atkins corroborated aspects of his mother's account and was not challenged. I also accept his evidence in its entirety.

7.31. I make the following findings:

1) On Saturday 21 March 2015 Mrs Atkins was present at the hospital between 10:30am and 7:30pm. During this time she noticed that her husband was drowsy and that he became 'a bit zoned out' as the day went on;

2) On Sunday 22 March 2015 Mrs Atkins and Jamie Atkins noticed a significant change in Mr Atkins' condition. I am satisfied that:

   a. At around lunchtime on Sunday 22 March 2015, upon waking Mr Atkins let out a big gasp and that he said 'Shit that scared me, I didn't think I was going to wake up, I couldn't breathe' or words to that effect.

   b. A nurse were present at the time of the gasping incident and the nurse was told that Mr Atkins suffered from sleep apnoea, but he did not use a CPAP machine.

   c. On the afternoon of Sunday 22 March 2015 Mr Atkins was struggling to stand up and remain awake while being showered by his wife.

   d. At around 5pm-6pm Mrs Atkins spoke to a nurse at the nurses' station. The nurse was told that Mr Atkins seemed unable to stay awake. The nurse was informed about the gasping incident and the sleep apnoea. The nurse told Mrs Atkins that there was a very fine line to tread between managing Mr Atkins' pain and his level of sedation, or words to that effect.

   e. In the late afternoon/early evening, after eating a small amount of dinner, Mr Atkins vomited twice.

   f. Mrs Atkins left the hospital at around 7:30pm. At around this time Mr Atkins was still dozing off during conversations with his wife.

8. The circumstances of Mr Atkins' death - medical assessment in the Emergency Department - Friday 20 March 2015

8.1. Evidence of Dr Thomas McNeil (Resident Medical Officer)

On Friday 20 March 2015 Dr Thomas McNeil was one of the three resident medical officers who were on duty in the ED. Dr McNeil gave oral evidence to the Inquest.[40]

8.2. Dr McNeil completed his medical degree in 2008 and he has been based at the FMC since 2013. Mr Atkins was assessed by Dr McNeil shortly after midnight on Saturday 21 March 2015. By this time Mr Atkins had received two doses of oxycodone (at 8:50pm and 9:55pm respectively). The prescribed dosage was 5-10mg (QID).

8.3. Dr McNeil did not prescribe the initial oxycodone and, on the available evidence, I am unable to determine which doctor did so. Nothing turns on this point. In all of the circumstances, I find there is no basis to criticise the decision of an ED doctor to prescribe oxycodone for short term pain relief.

8.4. All vital signs were within normal limits. The CT brain scan, carotid ultrasound and chest X-rays were all normal.[41] Dr McNeil's differential diagnosis was Horner's Syndrome, right arm pain suggestive of radiculopathy, cervical cord pathology or carotid dissection.[42]

8.5. The treatment plan was for admission and a continuation of the patient's regular medications.[43] He added a PRN (as required) prescription for oxycodone tablets, 5-10mg, four times per day (QID). Due to the diagnostic uncertainty and the inclusion of carotid dissection in the differential diagnosis, Dr McNeil ordered two-hourly observations. The two-hourly observations were not linked to the fact that he had prescribed oral oxycodone.[44] No oral and/or written directions were given to nursing staff regarding sedation scores and/or the frequency of observations post administration of the oxycodone.[45] Dr McNeil directed an MRI of the brain and cervical spine to be undertaken.

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[40] Transcript, pages 67-112
[41] Transcript, page 81
[42] Exhibit C5 at page 54; Transcript, pages 82 and 98-101
[43] For list of regular medications see Transcript, pages 71-72 and 82-84
[44] Transcript, pages 82, 89, 100-101 and 103
[45] Exhibit C5 at page 88

8.6. Observations were taken at 12:50am and all of Mr Atkins' vital signs were within normal limits.[46]

8.7. At 7:15am Dr McNeil spoke with the on-call neurologist (Dr Slee) who considered that carotid dissection was a more likely diagnosis. Thus Mr Atkins was admitted to the Stroke Ward (Ward 6C) and he was allocated a bed in a four bed ward.[47]

8.8. Dr McNeil completed his shift at 8:30am on 21 March 2015. He had no further contact with Mr Atkins until Monday 23 March 2015 when he responded to the emergency call and assisted in the unsuccessful attempt at resuscitation.[48]

8.9. I found Dr McNeil to be a credible and reliable witness. I make the following findings:

1) Dr McNeil conducted a thorough medical assessment in the ED and he provided a clear differential diagnosis and treatment plan.

2) I find no basis to criticise the treatment of the deceased in the ED and/or the medical assessment that was conducted by Dr Neil.

9. Overnight nursing progress notes - Saturday 21 March 2015

9.1. On 21 March 2015 progress notes were recorded at 3:25am and 5am respectively. These notes were signed by 'Hann RN' (presumably a reference to a registered nurse named Hann').[49] There was no dispute about the contents of these notes and RN Hann was not required to give oral evidence.

9.2. The entry that was made at 3:25am indicates that Mr Atkins had reported a pain score of 9/10 (head and neck pain) and he was given 5mg of Endone (ie oxycodone) at this time.[50]

9.3. The entry that was made at 5am indicates that notwithstanding the administration of oxycodone, the pain score remained at 9/10 and the Endone was recorded by RN Hann as giving no effect. The record indicates that a further 5mg of Endone was administered along with 1g of Panadol.

[46] Exhibit C5a; Transcript, page 98
[47] Exhibit C5 at page 55; Transcript, pages 92-93
[48] Exhibit C5-MET Medical Summary
[49] Exhibit C5 at page 54
[50] Endone is a brand name for oxycodone

9.4. I make the following findings:

1) Throughout the early hours of the morning of 21 March 2015 Mr Atkins continued to report high levels of pain (ie 9/10).

2) The pain score of 9/10 fell within the red zone of the RaDAR Chart escalation pathway and ought to have triggered a medical review (ie a Multi-Disciplinary Team review).

3) No such review occurred.

10. Medical review - Saturday 21 March 2015

10.1. Evidence of Dr Bethany Symes (Intern)

Dr Bethany Symes currently works as an obstetrics and gynaecology registrar at the Royal Darwin Hospital. Dr Symes gave evidence to the Inquest from the Royal Darwin Hospital via video conference.[51]

10.2. On Friday 20 March 2015 Dr Symes was rostered as a specialty intern. She had been an intern for two weeks only. Her overnight shift commenced at around 9pm and it concluded at around 8am on the following morning.

10.3. Dr Symes reviewed Mr Atkins at around 6am on Saturday 21 March 2015. As I understood the evidence, the pain review had been requested by nursing staff.

10.4. Notwithstanding Dr McNeil's initial direction for two-hourly observations, after Mr Atkins was transferred from the ED to Ward 6C he was placed on a four-hourly monitoring regime. I am unable to determine from the evidence whether the decrease in the frequency of observations occurred pursuant to a medical direction or due to an oversight. It is noted from the evidence that patients on the stroke ward are generally monitored four-hourly.

10.5. At the 6am review Dr Symes described Mr Atkins' presentation as 'distressed, sweaty and agitated'. He reported a pain score of 10/10.[52] Dr Symes' treatment plan can be summarised as follows:

- The PRN (as required) oxycodone was increased from 5-10mg to 10-20mg, four times per day (on condition that the sedation score was less than two);

[51] Transcript, pages 271-285
[52] Exhibit C5 at page 55; Transcript, pages 274-275

- Fentanyl was added to the PRN prescription, to be administered subcutaneously at a dose of 75-150µg, two-hourly (on condition that the sedation score was less than two); and
- The Home Team was requested to review the analgesia 'if felt appropriate'.[53]

10.6. Dr Symes realised that subcutaneous administration of fentanyl had a quicker onset action than oral oxycodone. However, given the severity of Mr Atkins' pain, she considered it appropriate to prescribe both medications.

10.7. Dr McNeil was questioned about the appropriateness of adding fentanyl to the PRN prescription. He said that although there must be a good reason to prescribe fentanyl, in his opinion, the decision to try a different agent was reasonable, especially in light of the diagnostic uncertainty and the anticipated review by the Home Team.

10.8. The stroke registrar, Dr Marantos, agreed that the decision to add fentanyl was appropriate in the circumstances.[54] I accept these opinions and I find no basis to criticise Dr Symes' decision to add fentanyl to the PRN prescription, the dosage of the fentanyl and/or the decision to increase the oral oxycodone dosage. The dosages are consistent with the recommended dosages contained on a lanyard that was provided to and carried by interns as a quick resource tool.[55]

10.9. I turn now to the question of minimum intervals between doses. It is noted that the lanyard recommended a dose interval of one hour between the various medications, but Dr Symes gave no such direction to the nursing staff (oral or written). Under cross-examination Dr Symes said that allowance was made for the onset/offset action of fentanyl by directing a two hour interval between the fentanyl doses.[56] This answer addressed the onset/offset action of fentanyl, but it did not explain the omission to direct or recommend a dose interval of one hour between the respective medications.

10.10. The frequency of observations remained unchanged (ie four-hourly).[57] Given that Dr Symes had prescribed a second and faster-acting opioid I further find that it would have been prudent to increase the frequency of observations. That said, I accept that Dr Symes recorded on the prescription that a sedation score of less than two was a

[53] Exhibit C5 at pages 55, 88; Transcript, pages 274-275
[54] Transcript, pages 161, 165
[55] Transcript, pages 106-107, 109; Exhibit C11 Lanyard-FMC Acute Pain Service
[56] Refer Exhibit C5 at page 88; Transcript, pages 284-286
[57] Transcript, pages 277-278

precondition to administration of the medications. It is fair to say that this in itself provided a measure of protection.

10.11. Dr Symes did not seek advice from a registrar or the Acute Pain Service prior to altering the medication regime. The witness candidly stated that if she had done so the conversation would be documented and that if she had been requested to conduct a second review such advice would then have been sought. I accept her evidence on this point and the explanation. Dr Symes made a judgment call and clearly documented it. She acted with the reasonable expectation that, as a new patient, Mr Atkins would be reviewed by the Home Team in a matter of hours.[58]

10.12. Dr Symes relied on her progress note to communicate the changes she had made to the PRN prescription and the request for a review of the opioid analgesia. With the benefit of hindsight I find that a handover or direct contact with the stoke consultant (Dr Cheruvu) would have been preferable. That said, in light of the competing demands placed on specialty interns, I do not consider it unreasonable for Dr Symes to have anticipated that Dr Cheruvu and/or other members of the Home Team would read her detailed progress note.

10.13. Overall I found Dr Symes to be a credible and reliable witness who acted reasonably in the circumstances.

10.14. I make the following findings:

1) I find no basis to criticise Dr Symes' decisions to increase the oral oxycodone dose and to add fentanyl (by subcutaneous route) to the PRN prescription. Nor is there any basis to criticise the prescribed dosage of the fentanyl.

2) Dr Symes made a detailed record of her actions in a progress note and it included a request to the Home Team to review Mr Atkins' analgesia if the team considered it to be appropriate.

3) It was reasonable for Dr Symes to anticipate that the Home Team would read the progress note and review the patient in a matter of hours. Given that a second opioid had been added to the PRN prescription, it would have been prudent to telephone the consultant to alert her to the possible need for such a review.

[58] Transcript, pages 282-283

4) A minimum interval of one hour between administration of the opioid medications should have been recommended (in accordance with the directions on the lanyard). Best practice would be to endorse the recommendation onto the PRN prescription for the assistance of nursing and/or medical staff.

5) Dr Symes was a credible and reliable witness who I consider acted reasonably in the circumstances. Apart from the matters I have mentioned, overall there is no basis to criticise her medical judgment.

11. Medical review - Saturday 21 March 2015

11.1. Evidence of Dr Lata Cheruvu (Stroke Consultant)

Dr Lata Cheruvu obtained a Bachelor of Medicine and Bachelor of Surgery from India in 1985. She moved to Australia in 2002 and became a Fellow of the Royal Australasian College of Physicians in 2007. Dr Cheruvu has completed advanced training in three different specialities, namely Nephrology,[59] Geriatric Medicine and Stroke Medicine. She became a Consultant in 2010 and since that time she has been working at the FMC, the Repatriation Hospital and Noarlunga Hospital.[60]

11.2. Dr Cheruvu gave oral evidence to the Inquest.[61]

11.3. On Saturday 21 March 2015 Dr Cheruvu was working as an on-call dual consultant at the FMC (in both the stroke and geriatric units). The on-call consultant is responsible for reviewing new admissions and remains on-call over the weekend from 5pm on Fridays until 8am on Mondays. Although it is not unusual for consultants to cover a double speciality, Dr Cheruvu said that such consultants may be required to see twice as many patients as a single specialty consultant.

11.4. On Saturday 21 March 2015 Dr Cheruvu arrived at the FMC at around 8am. She described this particular Saturday as an unusually busy day. There were nine new admissions in the stroke ward[62], five new admissions in the geriatric ward and two further reviews for her to conduct on referral from junior doctors. Accordingly, there was a total of 16 patients to be reviewed. Dr Cheruvu was also on call at the

[59] Nephrology is a specialty of medicine and paediatrics that concerns itself with the kidneys: the study of normal kidney function and kidney disease, the preservation of kidney health and the treatment of kidney disease
[60] Transcript, page 232
[61] Transcript, pages 230-270
[62] Dr Cheruvu mentioned that that usual number of new admissions in the stroke ward was around three: Transcript, page 258

Repatriation Hospital. The work pressures on this particular Saturday were described as akin to 'having to work like a registrar rather than a consultant'.[63]

11.5. Mr Atkins was the second new patient on her list.[64] His first injection of fentanyl (75µg) had been administered at 7:40am.[65] A patient history was taken by Dr Cheruvu and recorded in the medical notes by a junior intern who acted on that day as her scribe. The time of the review was not recorded on the progress note.[66]

11.6. Mr Atkins described shooting pain in the back of his neck which radiated to his fingers. Initially the pain was intermittent, but it was becoming more continuous. He reported that the injection of fentanyl had provided some pain relief.

11.7. Significantly, neither the intern nor Dr Cheruvu read the progress note that had been made by Dr Symes at 7:45am. Ironically, if the intern had turned the page back to look at the previous entry, he or she would have seen Dr Symes' progress note.[67]

11.8. Dr Cheruvu was candid about the omission to the progress note. Her evidence was that she 'definitely did not have…time' to review all progress notes before reviewing new patients. Her expectation was that other team members would contribute to the assessment. Dr Cheruvu added that it was difficult to take responsibility if she was not made aware of such matters.[68] Disappointment was also expressed at the lack of a verbal handover or telephone call by Dr Symes so as to alert the Home Team of the need for a review of analgesia.[69]

11.9. If Dr Cheruvu had read and/or been made aware of the contents of the progress note it would have become immediately apparent that:

- At 3:25am on 21 March 2015 Mr Atkins' pain score was 9/10 and that 5mg of Endone had been given with no effect;
- At 5am on 21 March 2015 the pain score had remained unchanged and a further 5mg of Endone and 1g of Panadol had been administered;

[63] Transcript, page 258
[64] Exhibit C5 at page 56
[65] Exhibit C5 at page 88
[66] Exhibit C5 at page 56
[67] Exhibit C5 at page 55
[68] Transcript, pages 255, 259
[69] Transcript, page 254

- Notwithstanding the administration of these medications, by approximately 6am Mr Atkins' pain score had in fact *increased* to 10/10;
- At around 6am Dr Symes increased the oral oxycodone dose from 5-10mg to 10-20mg and added to the PRN prescription 75-150µg of fentanyl, two-hourly (by subcutaneous route); and
- Dr Symes had requested the Home Team to review the analgesia (if considered appropriate by the team.

11.10. Dr Cheruvu said that *if she had been aware of the high pain scores and level of opioid analgesia she would have sought advice from the Acute Pain Service*.[70] I accept her evidence in this regard. Dr Cheruvu did not profess to have expertise in the use of opioid analgesia for the management of acute pain and there is no reason to doubt her evidence on this point. That said, the fact of the matter is that neither she nor her team read the progress note.

11.11. To compound matters, Dr Cheruvu admitted that she conducted the review *without sighting Mr Atkins' medication chart*. It is difficult to understand how any proper review could have been undertaken without access to this primary diagnostic information. Furthermore, Dr Cheruvu *directed the PRN (and other medications) to continue without reference to the chart*. Put bluntly, the direction to continue opioid medications was given in an information vacuum.

11.12. At the time this direction was given Dr Cheruvu explained that she had been asked to assist in a Medical Emergency Retrieval team (MET) call. She gave the direction as she left to attend the MET call. My impression from the evidence was that Mr Atkins' review was interrupted by this emergency call.

11.13. Overall, Dr Cheruvu's evidence had the flavour of a consultant working under significant time constraints and in circumstances that did not permit a comprehensive review of the patient. In my view, workload pressures on Saturday 21 March 2015 are probably the most likely explanation for a consultant of Dr Cheruvu's calibre and experience to have a reviewed a new patient in this manner. It is well-known that such conditions can lead to omissions and oversights. It seems to me that it would be difficult for a consultant to review 16 new patients in one morning and it is noted that

[70] Transcript, pages 252-253

Dr Cheruvu was also on-call at the Repatriation Hospital. However, in the absence of detailed evidence of rosters, workloads, staff/patient ratios and the extent to which such factors may have compromised the time available and the quality of medical reviews, such an issue, albeit an important one, was beyond the scope of this Inquest to examine.

11.14. With the benefit of hindsight Dr Cheruvu said that she would have considered slightly reducing the fentanyl dose and using it as a first line of treatment with oxycodone only to be used as a second line of treatment. She also agreed that the patient ought to have been referred to the Acute Pain Service.

11.15. Dr Cheruvu finished work between 1:30pm and 2pm on Saturday 21 March 2015. She remained on-call for 24 hours. In the afternoon she telephoned an intern who advised that all of the investigations were normal.[71] Dr Cheruvu called the radiology registrar herself to double check the results. She was satisfied that there was no evidence of carotid dissection and, after consultation with the neurosurgery registrar, it was decided to keep Mr Atkins under observation until the MRI was completed.[72]

11.16. At around 6:40am on Monday 23 March 2015 Dr Cheruvu was informed by Dr McNeil of the MET call to Mr Atkins and the failed resuscitation attempt.[73]

11.17. I found Dr Cheruvu to be an honest and reliable witness who ultimately made appropriate concessions. I accept her evidence in all material respects. The witness accepted that, as a consultant, she is responsible for the prescriptions that are given by junior doctors.

11.18. <u>I make the following findings</u>:

1) It was the Dr Cheruvu's responsibility to conduct a l review of a new patient and that included reviewing any prescriptions that may have been given by junior doctors overnight.

2) The decision to continue PRN medications without sighting and assessing the patient's medication chart and reading the progress notes (or ensuring that their contents were brought to her attention) falls far short of the standards of care one would ordinarily expect of a senior consultant.

[71] Exhibit C5 at pages 22-23 Radiology report
[72] Exhibit C5 at page 66
[73] Transcript, page 245

11.19. In making these observations I am mindful of the well-known case of *Briginshaw v Briginshaw* (1938) 60 CLR 336, where although the standard of proof does not alter, there are cases in which, owing to the seriousness of the allegations and the findings that might be made in relation to the behaviour of an individual, the Court should remind itself that such findings should not be made lightly or on unconvincing evidence. I have also had regard to the fact that these findings could have an adverse impact on the consultant's professional standing.

11.20. I find that the cursory review that was conducted on Mr Atkins on the morning of 21 March 2015 was the first missed opportunity for skilled medical intervention. Had a thorough review been undertaken, the opioid prescription may have been altered and a referral to the Acute Pain Service may have occurred.

12. Events and observations of nursing staff on Saturday 21 March 2015

12.1. Evidence of Jessica Moreton (Registered Nurse)

Ms Jessica Moreton is a registered nurse who gave oral evidence to the Inquest.[74] On 21 March 2015 RN Moreton commenced her shift at around 7am and it concluded at around 3:30pm. During the shift she shared the care of Mr Atkins with another nurse. Regrettably, on the available evidence, the identity of her partner was unable to be established.

12.2. As previously stated, Mr Atkins received his first injection of fentanyl (75µg) at 7:40am. It is noted that:

- The first set of observations was taken at 8:50am. His pain score at that time was recorded as 4/10.[75]
- At 10:45am a dose of 10mg of oxycodone was administered. A further 5mg dose of oxycodone was given thirty minutes later, at 11:15am.[76]
- A second set of observations was taken at 11:30am. At this time Mr Atkins' pain score had escalated to around 9/10; and
- At 12:15pm a further dose of fentanyl (150µg) was administered.[77]

[74] Transcript, page 357-399
[75] Exhibit C5a
[76] Exhibit C5 at page 88
[77] Exhibit C5 at page 88; Exhibit C5a; Transcript, pages 375-377

12.3. The interval between the two doses of oxycodone was 30 minutes only. RN Moreton said that it was usual to allow half an hour between doses. The witness disagreed with the suggestion that the correct dose interval was one hour. In fact she was unaware of any such policy being in place at the FMC at the relevant time or as at the date of giving evidence.[78]

12.4. RN Moreton recorded a progress note at 1:50pm. The note confirmed the pain score of 9-9/10 (in the morning) and the medications that had been given up to 12:15pm. It was noted that the oxycodone had provided little or no effect. The 150µg dose of fentanyl that had been administered at 12:15pm was recorded as having provided some relief.[79]

12.5. Notwithstanding the repeated doses of opioid medication, it is plain from the evidence that Mr Atkins' pain was poorly controlled.

12.6. I turn now to the RaDAR Chart escalation pathway protocols and make the following observations:

- The pain score of 4/10 (recorded at 8:50am) fell within the white zone and no action was required to be taken.
- However, the pain score of 9/10 (taken at 11:30am) fell within the red zone. *It should have triggered a request for a Multi-Disciplinary Team (MDT) review within 30 minutes and an increase in the frequency of observations*.[80]
- *Neither of these actions occurred,* a fact which was not disputed by counsel.

12.7. RN Moreton was cross-examined about the two sets of observations. On perusing the observation chart the witness was unable to say whether she took Mr Atkins' observations either at 8:50am or 11:30am.

12.8. It is noted that nursing staff are not required to sign and/or initial the observation chart entries as a means of identification. It is tempting to infer that one would expect nurses to be able to identify their own entries, but the fact of the matter is that very little handwriting is required on the observation chart and the entries largely comprise numerals, dots and dashes. For this reason, and in the absence of an identifying signature or initials, I consider that it would be unfair to draw any adverse inference

[78] Transcript, pages 377-378, 394
[79] Exhibit C5 at page 57; Transcript, pages 375-377
[80] An MDT review must comprise a minimum of a registered nurse and a medical doctor

against RN Moreton or indeed the several other nurses who struggled to identify their entries on the observation chart. It is of course possible that they could identify their entries but chose to distance themselves from key events by purporting to be unable to do so. It is impossible to say.

12.9. RN Morton concluded her shift at around 3:30pm. She returned to Ward 6C on Sunday 22 March 2015.[81]

12.10. I am unable to determine with any certainty who took the observations at 11:30am on 21 March 2015. I find that the following actions should have been taken at this time:

1) A Multi-Disciplinary Team (MDT) review should have been requested in accordance with the escalation pathway protocols.

2) The frequency of observations should have been increased; and

3) If the MDT had not attended within 30 minutes, the case should have been escalated to a Medical Emergency Response team call (ie a MET call).

12.11. I further find that another opportunity for medical intervention was lost.

12.12. Evidence of Joanne Koenecke (Enrolled Nurse)

Ms Joanne Koenecke is an enrolled nurse who commenced a late shift at around 1pm on 21 March 2015. Her shift concluded at around 9.30pm. EN Koenecke provided a statement to the Court and she also gave oral evidence.[82]

12.13. EN Koenecke said that on 21 March 2015 she was paired with a registered nurse by the name of Yuan (Rita) Cui and they shared the care of Mr Atkins. However, RN Cui made no reference to this shift whatsoever either in her statement or during her oral evidence to the Court.[83] I will come back to this point in a moment.

12.14. EN Koenecke recalled that Mr Atkins was experiencing a lot of pain and that it was difficult to control. The witness mentioned that he was 'on the task board' for a review of his pain.[84] She could not say what time the request was placed on the task board. It appears that at the conclusion of the shift the matter remained on the task board.

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[81] See Inquest Finding at pages 39-42
[82] Exhibit C19; Transcript, pages 589-600
[83] Exhibit C19; Transcript, pages 566-586
[84] The task board is an FMC intranet program which is used after hours and on weekends to alert on shift Medical Special Interns that a patient requires a non-urgent review; Exhibit C19 at pages 1-2; Transcript, page 590

12.15. During this shift Mr Atkins received three separate 150µg doses of fentanyl at 2:40pm, 4:45pm and 7:45pm respectively. A 10mg dose of oxycodone was also administered at 2:40pm. EN Koenecke said that, as an enrolled nurse (ie TAFE trained), she is not permitted to administer fentanyl and she did not do so on this shift. By reference to the medication chart the witness confirmed that she administered 1g of Panadol at 6pm and 300mg of Pregabalin at 8pm.[85]

12.16. Two sets of observations were taken at 4:15pm and 9pm respectively. EN Koenecke perused the observation chart, but she was unable to say whether the entries were made by her. The relevant observations can be summarised as follows:

- At 4:15pm Mr Atkins' reported pain score was around 6/10. A pain score of 6/10 falls within the yellow zone of the escalation pathway protocol *and it met the criteria for a review by a registered nurse and notification of the shift coordinator*.
- At 7:35pm EN Koenecke's progress stated *inter alia* that the patient was 'complaining of R) neck, shoulder & arm pain 8/10'[86]. *A pain score of 8/10 falls within the red zone of the escalation pathway protocol and should have triggered a request for a MDT Review within 30 minutes.*
- The pain score at 9pm was recorded on the observation chart at around 6/10.[87]

12.17. In fact, neither of the escalation pathway protocols were applied. Nor were the frequency of the observations increased as required by each of the protocols. The lack of action was not disputed by counsel.

12.18. EN Koenecke said that if she had taken the two sets of observations she would have alerted the registered nurse and shift co-ordinator (in accordance with the yellow escalation pathway protocol).[88]

12.19. EN Koenecke was not pressed on the contents of her progress note and, in particular, the source of information which led her to record that the patient was 'complaining of right neck, shoulder and arm pain 8/10'. This score could not have been obtained from the observation chart because both relevant entries recorded a score of 6/10. This tends

[85] Pregabalin (Lyrica) is from a class of medications called anti-epileptics. It is used to treat patients with neuropathic pain (from damaged nerves) which may be felt peripherally in the hands and feet if it is from diabetic neuropathy. Examples of conditions that can cause central neuropathic pain include stroke, spinal cord injury and multiple sclerosis: Australian Pain Management Association

[86] Exhibit C5 at page 58 - Progress Note 21/3/15 (1935 hours)

[87] Exhibit C5a

[88] Exhibit C19 at page 16; NB The identity of the shift coordinators were not determined during the Inquest

to suggest that EN Koenecke received the complaint directly from Mr Atkins, although since it is possible that the higher pain score was reported to her by another nurse, I make no definitive finding in this regard.

12.20. I make the following findings:

1) At 4:15pm and 9pm on 21 March 2015 the recorded pain scores were 6/10 on each occasion and met the criteria in the yellow zone for escalation to a review by a registered nurse and notification of the shift coordinator. No such review occurred.

2) At 7:35pm a nursing progress note included a reference to a complaint of neck, shoulder and arm pain at a level of 8/10[89]. Such a score meets the criteria in the red zone for escalation to an MDT Review within 30 minutes. No such review occurred.

3) The frequency of Mr Atkins' observations should have been increased at 4:15pm and, at the latest, prior to the conclusion of this shift.

12.21. EN Koenecke finished her shift at around 9:30pm. She had no further contact with Mr Atkins until Sunday 22 March 2015.[90]

12.22. I turn now to the question of whether RN Cui was in fact rostered on this particular shift. RN Cui's evidence addressed one occasion only on which she was paired with EN Koenecke, namely Sunday 22 March 2015. It was agreed that she shared the care of Mr Atkins on this occasion. In the absence of any evidence of rosters and the like from which it could be inferred that RN Cui was paired with EN Koenecke on 21 March 2015, I am left with a nagging doubt that EN Koenecke is mistaken on this issue. I cannot exclude this as a reasonable possibility.

12.23. Accordingly, on the available evidence I am unable to determine the identity of the nurse who took Mr Atkins' observations on 21 March at 4:15pm and 9pm.

12.24. At the conclusion of the shift Mr Atkins remained on four-hourly observations. I find that another opportunity for intervention was lost during this shift.

[89] Exhibit C5 at page 58 - Progress Note 21/3/15 (1935 hours)
[90] See Inquest Finding at pages 43-44

13. Events and observations during the overnight shift - Saturday 21 March 2015 to Sunday 22 March 2015

13.1. Evidence of Millie Pribicevic (Registered Nurse)

RN Millie Pribicevic was born in Croatia and qualified there as a registered nurse in 1979. After migrating to Australia in 1999 and completing a Diploma in Nursing at Flinders University, she commenced work as a registered nurse. For the past 10 years RN Pribicevic has been working as a registered nurse in the casual pool at the FMC and she gave oral evidence to the Inquest.[91]

13.2. The night shift commenced at around 9pm on Saturday 21 March 2015 and concluded at around 7:30am on Sunday 22 March 2015. RN Pribicevic was allocated to Ward 6C as 'a floating nurse', a role which she described as assisting nurses with their allocated patients. No individual patients were allocated to RN Pribicevic.

13.3. RN Pribicevic was the only nurse to provide evidence to the Court regarding this overnight shift. Of course this is an unsatisfactory state of affairs because the Court did not receive any evidence from the nurses that were allocated to share the overnight care of Mr Atkins. The Court sought, and was given a reassurance from counsel for SA Health, that all reasonable efforts had been made to locate nursing staff who could give relevant evidence to the Inquest, but several witnesses were unable to be located.

13.4. The medications that were administered and the observations made between 9pm on 21 March 2015 and 2:25am on 22 March 2015 are not disputed. At 9:50pm a dose of 150µg of fentanyl was administered. A second 150µg dose of fentanyl was administered at 12:05am. Fifteen minutes later at 12:20am Mr Atkins was given 20mg of oxycodone.

13.5. The first set of observations were taken at midnight. The pain score had risen from 6/10 (at 9pm) to around 8-9/10.

13.6. At 2:25am a further 150µg dose of fentanyl was administered.[92]

13.7. I do not intend to repeat what I have already said about the escalation pathway protocols. Suffice it to say that at midnight on 22 March 2015 a Multi-Disciplinary

[91] Transcript, pages 401-425
[92] Exhibit C5 at page 88; Exhibit C5a

Team (MDT) Review should have been requested. The fentanyl that had been administered at 9:50pm had not alleviated the pain and, significantly, the pain score fell within the red zone of the escalation pathway. No MDT review occurred. Furthermore, the frequency of observations was not increased as required by the protocols. There was no dispute amongst counsel regarding these omissions.

13.8. The observation chart indicates that by 4:30am the pain score had fallen to around 6/10. Presumably this fall was the result of the second 150µg dose of fentanyl and 20mg of oxycodone that were administered at 12:05am and 12:20am respectively. Although the score had fallen *it nonetheless fell within the yellow zone of the escalation pathway and a review by a registered nurse (and notification of the shift-coordinator) should have occurred.* It did not.

13.9. RN Pribicevic perused the RaDAR observation chart but she did not recognise her handwriting and/or entries on the chart. RN Pribicevic did not consider doing a review herself. The thrust of her evidence was that, as a floating nurse, she just assisted other nurses with their allocated patients and reported any issues to them.

13.10. It is difficult to understand why a registered nurse of 40 years' experience would not immediately review the patient herself. I find that RN Pribicevic should have reviewed Mr Atkins, recorded the results and notified the Shift Coordinator. Alternatively, she should have immediately requested another registered nurse to conduct the RN review. At the very least, the frequency of observations should have been increased. None of these things occurred. Again, the failures to apply the escalation pathways was not disputed by counsel.

13.11. It is also plain from the chart that whoever took these observations at 4:30am failed to record Mr Atkins' oxygen saturation. Although the pain score had dropped to around 6/10, it still fell within the yellow zone of the escalation pathway.

13.12. RN Pribicevic was cross-examined closely about the 4:30am observations. Initially the witness was adamant that she did not take these observations and she said that 'obviously some nursing staff just before me did observations'.[93] However, after a robust cross-examination by counsel for the Atkins family about the contents of a

[93] Transcript, pages 409, 413

progress note that RN Pribicevic recorded at 4:40am, the witness conceded, albeit reluctantly, that she must have taken the 4:30am observations.

13.13. The progress note stated:

> 'Pt appears to be unsettled and slept only short periods of time. OBS stable afebrile alert and oriented. Pain relief given 2 hourly as per PRN medication chart, but **pain score never dropped below the 7-8**. Endone give & Fentanyl as per order. Pt became wheezy Salbutamol puffer given. **SaO2 90% @ 04:30 [oxygen] 2L given**. Nil other issues or complaints to time of note.' [94] (Emphasis added)

13.14. Under cross-examination RN Pribicevic acknowledged that she had given Mr Atkins a Salbutamol puffer for wheeziness and that his oxygen saturations had in fact fallen to 90% (as recorded in the progress note). The witness made a number of further concessions. Firstly, she had failed to record the initial 90% oxygen saturation reading on the observation chart. Secondly, she had commenced Mr Atkins on oxygen at a flow rate of 2L/min but the oxygen requirement was not recorded on the chart. Thirdly, no entry was made on the chart to indicate Mr Atkins' oxygen saturations after the 2L of oxygen had been applied.[95] The witness further stated that she was '100% sure' that she reported the 4:30am oxygen desaturation event to 'an allocated nurse':

> 'I'm sure of this 100% practice to report to allocated nurse what I'm doing in allocation role. Just report I did, this, this and that for your patient and move further. That's why I miss out on this documentation' [96]

13.15. RN Pribicevic sought to further explain the omissions to record this vital diagnostic information. Her evidence was difficult to follow, it was rambling and, at times, it was incoherent. I do not intend to repeat the evidence. Suffice it to say that I formed the view that the witness sought to shift blame and to minimise the significance of her own conduct. At one point in her evidence she said 'I just missed out on good documentation'.[97]

13.16. For obvious reasons this answer is unsatisfactory. It is essential that the RaDAR observation chart is accurately completed. It is used as a visual diagnostic tool and failure to do so removes essential information from which medical and nursing staff

[94] Exhibit C5 at page 58 (RN Pool is a reference to pool nurse or floating nurse); Transcript, pages 405-407
[95] Transcript, pages 411-418
[96] Transcript, page 410
[97] Transcript, pages 409, 414-420 and 423; Exhibit C5 at page 58

may identify the signs of a deteriorating patient.[98] It appeared that RN Pribicevic failed to appreciate the significance of the RaDAR observation chart.

13.17. When asked whether her practices would have been different if Mr Atkins had been her own allocated patient, somewhat surprisingly RN Pribicevic said 'I will be for sure record that…in obs [observation] chart first and case notes'. She added that in areas such as the critical units and intensive care 'everything is recorded'.[99] I gained no reassurance from these answers. On the contrary, I was left with the impression that RN Pribicevic did not apply the same standard of care to patients to whom she provided assistance as a floating nurse. The witness seemed to view the role of a floating nurse as a 'helper' who had no direct responsibility for the patients to whom she provided assistance. Furthermore, RN Pribicevic's recording practices appeared to differ depending on her perceived importance of the area of the hospital in which she was working (eg the Intensive Care Unit as opposed to a ward). To be blunt, I found the evidence that was given on this topic to be quite alarming.

13.18. I do not accept that RN Pribicevic reported these observations to an allocated nurse. Her evidence amounted to little more than mere speculation and a desperate claim to shift the responsibility for her own conduct to another person.

13.19. To compound matters, notwithstanding the fall in oxygen saturations to 90% at 4:30am, the failure to conduct an RN Review and the failure to increase the frequency of observations, *Mr Atkins was given a further 150µg dose of fentanyl at this time.*[100] On the available evidence it is not possible to determine who administered this fentanyl dose. Neither was it possible to determine whether the nurse who administered the fentanyl at 4:30am was aware of the drop in oxygen saturations.

13.20. I pause to make some remarks about the significance of the RaDAR escalation pathway protocols. Protocols are put in place for the purpose of patient safety. It is a basic nursing task to accurately record all observations of vital signs on the RaDAR chart. All observations *must* be documented and, if they fall within the relevant criteria, the escalation pathways *must* be applied. If such protocols are ignored patient safety is potentially compromised. That is an unacceptable state of affairs. It is unacceptable because such failures create a very real risk that a deteriorating patient may be

[98] Exhibit C5a
[99] Transcript, page 414
[100] Exhibit C5 at page 88

undetected. Put another way, a failure to observe the protocols creates the very risks that the protocols are designed to prevent.

13.21. RN Pribicevic became visibly distressed when several of these matters were pursued by counsel assisting.[101] During one line of questioning she gave evidence to the effect that since there was a Salbutamol puffer on Mr Atkins' medication chart she had probably assumed that the drop in oxygen saturations at 4:40am related to the wheeziness and a chronic condition, and not the opioid medication. If that is so then it is even more alarming because it leaves open the possibility that RN Pribicevic did not even turn her mind to a possible link between the low oxygen saturation reading of 90% and the level of opioid analgesia.[102]

13.22. At 6am RN Pribicevic took Mr Atkins' blood sugar level but she could not recall whether he was still on oxygen at that time. Her shift ended at 7:30am on Sunday 22 March 2015.[103]

13.23. Overall I found RN Pribicevic to be an unimpressive witness who was prone to giving prolix answers which did not address the question that was being asked. The manner in which this witness presented inspired little confidence in the reliability of the evidence.

13.24. I make the following findings:

1) I am unable to determine the identity of the nurse who took the observations at midnight on Saturday 21 March/Sunday 22 March 2015.

2) I find that the rise in the pain score from 6/10 (at 9pm) to around 8-9/10 (at midnight) should have triggered the red zone escalation pathway and a medical review should have occurred (ie an MDT Review).

3) The frequency of Mr Atkins' observations should have been increased.

4) No further opioid medications should have been administered unless and until the MDT review had occurred.

[101] Transcript. pages 418-425
[102] Transcript, pages 422-423
[103] Transcript, page 416

5) I further find that RN Pribicevic took the observations at 4:30am and that she failed to record the initial oxygen saturation of 90% and the subsequent oxygen saturation reading, if indeed it was ever taken, after the oxygen had been applied.

6) I find that at 4:30am RN Pribicevic should have conducted an RN Review herself or ensured that it was conducted by another registered nurse. Given that Mr Atkins was on a high level of opioid medications, the drop in oxygen saturations should have triggered sufficient concern to warrant a request for a medical review.

7) I do not accept RN Pribicevic's evidence that she reported the desaturation event to one of the other nurses. There is no documentation to support this claim and the witnesses evidence was unconvincing in this regard. The only documentation about the 4:30am event is her own progress note.

8) At the very least, I find that the frequency of Mr Atkins' observations should have been increased at this time;

9) Such interventions could well have changed the outcome for Mr Atkins.

13.25. In reaching these conclusions I have had regard to the fact that counsel for SA Health was unable to locate the nurses who were allocated to care for Mr Atkins on this occasion for the purpose of giving evidence. I have also had regard to the *Briginshaw* principles to which reference has already been made.

14. Medical review - Sunday 22 March 2015

14.1. Evidence of Dr Christos Marantos (Stroke Registrar)

Dr Christos Marantos is a general medical registrar at the Royal Adelaide Hospital (RAH) and he gave oral evidence to the Inquest.[104]

14.2. Dr Marantos completed a Bachelor of Medicine and Bachelor of Surgery in 2011. After completing an internship at the Queen Elizabeth Hospital in 2012, he commenced basic physician training at the FMC (in 2013).[105]

14.3. On Sunday 22 March 2015 Dr Marantos was working at the FMC as the stroke registrar (between around 8am-11:30am). He assessed Mr Atkins at around 8:30am.[106] Mr Atkins was not on oxygen at the time of review. The witness confirmed that there

[104] Transcript, pages 117-172
[105] Transcript, pages 117; Dr Marantos also completed a PhD in 2010 (Immunology)
[106] Exhibit C5 pages 59-60

had been the usual handover at the commencement of the shift but he was not informed of any overnight drop in oxygen saturations.[107]

14.4. I accept this evidence and I find that the oxygen specs must have been removed sometime between approximately 4:40am and 8:30am on Sunday 22 March 2015.

14.5. At the time of review Dr Marantos described Mr Atkins as alert, his sedation score was zero and there was no evidence of any respiratory difficulty.[108]

14.6. Part of the assessment involved a review of the PRN medications.[109] Dr Marantos calculated that the patient had received 140mg of morphine equivalent over the previous 24 hours. The calculation was erroneous and Mr Atkins had in fact received 280mg morphine equivalent in the previous 24 hours. Dr Marantos did not realise that an error had been made at the time of the assessment.

14.7. It was clear from his evidence that Dr Marantos was very concerned about the level of Mr Atkins' pain. Upon review he continued the PRN medications (ie oxycodone 10-20mg, QID and 75-150µg of fentanyl, two-hourly) and added another opioid (OxyContin) to the PRN prescription (30mg, twice daily). OxyContin is a slow release form of oxycodone. The rationale for adding OxyContin was to provide a base line of pain relief with the aim of reducing Mr Atkins' reliance on the other PRN medications. Ibuprofen was prescribed as another analgesic.

14.8. The witness was not pressed on whether his decision to add the OxyContin was influenced by the calculation error.[110] The thrust of the evidence was that he was guided by the zero sedation score, the absence of any evidence of respiratory difficulty and the desire to alleviate Mr Atkins' pain. At the relevant time Dr Marantos felt confident about his decision because the patient was in a hospital setting and he was being monitored.[111]

14.9. The witness was cross-examined about the practice of prescribing fentanyl, oxycodone and OxyContin in combination. Dr Marantos candidly stated that at the time of reviewing Mr Atkins he did not have any particular expertise and/or training in the

[107] Transcript, pages 151-152
[108] Transcript, page 153
[109] Transcript, page 151
[110] Transcript, pages 131,T166-167
[111] Transcript, pages 149, 151-153 and 168-171

treatment of acute pain.[112] That said, throughout his training he had regularly seen opioids prescribed in combination for the management of acute pain. Dr Marantos explained that since receiving further training from the pain specialist at the RAH, Professor Pam Macintyre (in February 2018), he would no longer use slow release opiates to manage acute pain.[113]

14.10. Dr Marantos acknowledged that he did not give any direction (oral or written) for a minimum dose interval between the administration of the opioids. Nor did he order an increase in the frequency of observations. At the time he was not aware of any policy at the FMC that recommended a one hour interval between doses. He agreed that it would be good practice to do so and also to check the patient one hour after opioid administration.[114]

14.11. I turn now to the issue of the overnight drop in oxygen saturations. Dr Marantos said that if he had been made aware of the desaturation event his approach would have been different. He would have a arranged a chest X-ray to eliminate issues such as hospital acquired pneumonia, a CT of the lungs to rule out the presence of a clot and, subject to the view of the Medical Emergency Response team and reviewing doctor, he may have placed Mr Atkins under closer observations. It was implicit from his evidence that Dr Marantos assumed that a medical review would automatically have occurred if a patient's oxygen saturations had fallen to such a low level.[115]

14.12. Under cross-examination it was pointed out that although the desaturation event was not recorded on the RaDAR observation chart, the information was available in the nursing progress note that had been made at 4:40am. In fact, that note immediately preceded the progress note that was made by Dr Marantos at 8:30am.[116] Dr Marantos accepted that he had access to the note and that he had not read it. It was also agreed that progress notes are probably the most reliable form of communication.[117]

14.13. One of the submissions that was made on behalf of the Atkins family was that it was 'illogical' that Dr Marantos did not read the nursing progress note. The submission carried with it a suggestion that, at best, it was remiss of the registrar not to read the

[112] Transcript, page 169
[113] Reference was made to the guidelines of the American College of Physicians (2017)
[114] Transcript, page 169
[115] Transcript, pages 141 and 144
[116] See Exhibit C5 at pages 58-59
[117] Transcript, pages 151-152

progress notes or, at worst, the failure to do so amounted to evidence of a negligent approach from which an adverse inference could be drawn.

14.14. In my view although findings of such importance can be made by inference, they should not be made lightly. I have referred to the case of *Briginshaw* above and I remind myself that such a finding should not be made lightly and I adopt a *Briginshaw* approach to this aspect of the matter. In particular, I have regard to the fact that at 4:30am, neither the initial oxygen saturation reading of 90% nor the reading after 2L/min oxygen was applied, were recorded on the RaDAR chart. These omissions removed critical information from Dr Marantos in a chart which is regularly used by clinicians as a visual diagnostic tool. It is not unreasonable for registrars and other medical staff to assume that the RaDAR chart has been accurately completed by nursing staff. Accordingly, I make no criticism of Dr Marantos arising from the fact that he did not read the nursing progress notes on this occasion.[118]

14.15. I digress for the moment to say something about progress notes. It was apparent during the Inquest that although detailed nursing progress notes were made, the notes were not always read (for example even by the senior consultant and Dr Marantos). It raises the question of the purpose of such notes. So far as the nurses are concerned it appears that greater reliance was placed on the contents of a Handover Sheet in order to obtain information about the ward patients. These sheets are prepared by the nursing shift co-ordinator and their contents are largely determined by the subjective assessment of the case notes and other information.

14.16. <u>I make the following findings</u>:

1) A Handover Sheet is no substitute for a careful reading of the progress notes from a previous shift. Patient safety must be the primary consideration; and

2) If, as some witnesses suggested, time constraints prevent a reading of the notes this is a resource issue that needs to be urgently addressed by the hospital.

14.17. I return now to the conversation between Dr Marantos, Mrs Atkins and Jamie Atkins which took place in the corridor. Dr Marantos did not recall speaking with family members but he accepted that he must have done so. With the benefit of hindsight Dr Marantos agreed that he should have reviewed Mr Atkins when these concerns were

[118] Exhibit C5 at page 59; Transcript, page 151

raised by the family.[119] Indeed, on reflection Dr Marantos made a number of further concessions which included the following:

- Before prescribing the OxyContin he should have contacted Dr Cheruvu and/or the Acute Pain Service;[120]
- Having prescribed OxyContin, the fentanyl should have been discontinued; and
- Clear directions should have been given about the timing between doses so that the peak effect of one drug was achieved before another was given.

14.18. I found Dr Marantos to be a sincere and credible witness. He was a witness who made appropriate concessions. I make the following findings:

1) Dr Marantos reviewed Mr Atkins at around 8:30am. At that time the deceased was not on oxygen.

2) I find that the oxygen specs must have been removed sometime between about 4:40am and 8:30am on Sunday 22 March 2015. I am unable to determine who removed the oxygen specs.

3) Dr Marantos was not informed at handover of the overnight desaturation event. Thus he conducted his review without the knowledge that Mr Atkins' oxygen saturations had dropped to 90% at 4:30am and he had been placed on oxygen at a flow rate of 2L/min.

4) The oxygen saturation reading that had been taken at 4:30am was not recorded on the RaDAR chart. This omission removed information from Dr Marantos that was essential to his assessment.

5) With the benefit of hindsight Dr Marantos should not have added OxyContin to the prescription. That said, at the relevant time he acted in bona fide manner, albeit with insufficient knowledge, training and experience regarding the inherent risks of opioid medications and, in particular, the use of slow release opiates to manage acute pain.

6) Dr Marantos made a calculation error by recording that Mr Atkins had received 140mg morphine equivalent in the previous 24 hours when in fact he had received 280mg. There is insufficient evidence to determine whether his decision to add

[119] Transcript, pages 154, 164
[120] Transcript, page 168

OxyContin would have been different had he been aware of the error at the time of review.

7) Best practice would have been to read the nursing progress notes at the time of review. However, in these particular factual circumstances, I make no criticism of Dr Marantos arising from the omission to read the note.

8) Given that a slow release opioid had been added to the prescription and the combination of opioid analgesia, the frequency of observations should have been increased.

15. Events and observations of nursing staff on Sunday 22 March 2015

15.1. Overview of the early/morning shift (7am-3:30pm)

Two sets of observations were taken during this shift at 9am and 1:30pm respectively. Prior to the first set of observations being taken Mr Atkins had received 10mg of oxycodone (at 7:50am) and 150µg of fentanyl (at 8:35am).[121]

15.2. Notwithstanding the two doses of opioids when the first set of observations was taken at 9am, his pain score was 9/10 and his *oxygen saturation readings had dropped to 88%*. Oxygen was commenced at a flow rate of 2L/min and the chart indicates that the saturations increased to 93%.[122]

15.3. The 88% oxygen saturation reading should have triggered alarm bells in the nurse who took the observation because *any oxygen saturation reading equal to or less than 89% must be treated as a medical emergency*. Any reading of 89% or less falls within the purple zone of the escalation pathway and a Medical Emergency Response call (ie a MET call) must be made.[123] The required actions are clearly documented on the RaDAR escalation pathway document, namely:

1) Place emergency call and specify location;

2) Initiate basic/advanced life support;

3) Notify senior doctor responsible for the patient; and

4) Increase frequency of observations post intervention.

[121] See evidence of Joanne Moreton at transcript, pages 360 and 394 - This witness said it was an acceptable practice to administer the medications 45 minutes apart

[122] Exhibit C5a

[123] Refer Exhibit C5a Escalation pathway (purple zone)

15.4. None of these things occurred. The failure to escalate the matter to a medical emergency at this time was not disputed by counsel. The central question to be determined is why no MET call was made.

15.5. A critical opportunity for medical intervention was lost. Mr Atkins remained on four-hourly observations. To compound matters, the deceased received two doses of OxyContin during this shift, at 10:30am and 10.10 pm (22:10 hours) respectively.[124]

15.6. Evidence of Ms Therese Artis (Enrolled Nurse)

Ms Therese Artis is an enrolled nurse. She provided a statement to the Court and also gave oral evidence.[125] On Sunday 22 March 2015 EN Artis commenced an early shift at around 7am. She was paired with RN Moreton and they shared responsibility for the care of Mr Atkins. It will be recalled that RN Moreton had concluded a Ward 6C shift at 3:30pm on the previous day.

15.7. EN Artis had perused that RaDAR observation chart and other records about one month before giving evidence to the Inquest. Her evidence was that she did not take Mr Atkins' observations on this shift. The witness said that it was not her handwriting on the observation chart and she provided explanations as follows:[126]

- In relation to the 9am observations EN Artis was confident that she would not record the temperature by inserting the numeral '36'. Her usual practice is to put a dot for the temperature reading.
- The manner in which the oxygen saturations were recorded did not reflect her general practice. Her usual practice (and the correct way to record saturations) is to use two columns. The initial reading is recorded in the first column and second reading (after oxygen has been applied) is recorded in a separate column.[127]

15.8. In relation to the oxygen reading of 88% at 9am, EN Artis stated:

> 'If I took a reading for Mr Atkins' oxygen saturations which was 88%, my usual practice would be to immediately administer oxygen at two litres while making a MET call at the same time as I would be very concerned that there was something wrong with Mr Atkins.

[124] Exhibit C5 at page 90; Transcript, page 387
[125] Exhibit C17; Transcript, pages 550-565
[126] Transcript, pages 551-552
[127] Exhibit C17 at pages 8-9

> I also note that this is in the purple zone on the RaDAR chart which means that a MET call is mandatory'.[128]
>
> 'If I took an oxygen saturation of 93% I would inform the Shift Coordinator and my partner in the first instance so they can check the reading again. I would then try putting the oxygen saturation probe on a different finger on the patient and get the patient to sit and take some deep breaths to see if the patient improved.
>
> It is responsibility of the nurse who is taking the observations to make the appropriate call in accordance with the yellow, red and purple zones on the RaDAR chart. It does not matter if that nurse is an Enrolled Nurse or a Registered Nurse.' [129]

15.9. EN Artis confirmed that she did not administer any fentanyl or oxycodone to Mr Atkins throughout the shift. As an EN she is not permitted to administer fentanyl injections to a patient. I accept her evidence on this matter which is consistent with the evidence given by other enrolled nurses.[130]

15.10. As to the conversations with nurses that were recounted by Mrs Atkins, EN Artis did not recall having any discussions with the family throughout the shift.

15.11. EN Artis gave her evidence in a straight forward and forthright way. She presented as a thoughtful and credible witness and I accept her evidence on material issues.

15.12. <u>Evidence of Jessica Moreton (Registered Nurse)</u>

RN Moreton did not recall taking the observations on this shift. On perusing the RaDAR she said that it did not look like her handwriting. The witness said that she would recognise her own handwriting.[131] The effect of her evidence was that the observations must have been taken by another nurse. On that day she was paired with an enrolled nurse but she could not recall the identity of that nurse.[132]

15.13. RN Moreton agreed that the recording of two oxygen saturation readings in a single column (as per the 9am entry) is not normal practice.

15.14. RN Moreton recorded a progress note at 1:30pm (which I note coincides with the time of the second set of observations). At that time Mr Atkins was still on 2L of oxygen and his saturations had risen to 95%. The note stated that OxyContin had been given with 'good effect' which was no doubt a reference to the drop in the reported pain score

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[128] During her oral evidence EN Artis confirmed that she had made MET calls on several occasions (probably less than five): Transcript, page 553
[129] Exhibit C17 at pages 10-12
[130] Exhibit C17 at page 13
[131] Transcript, pages 366-367
[132] Transcript, pages 379-381

at 1:30pm to around 4/10. RN Moreton conceded that she did not make a note of the 88% oxygen saturations in the progress notes, a matter which she said was an oversight.[133]

15.15. The witness was questioned about the 88% oxygen saturation reading. She said that 'ordinarily' a Medical Emergency Response call would be made if an oxygen saturation reading of 88% was detected.[134] If RN Moreton had taken that observation her response would have been to re-check the patient's saturations on a different hand or sit the patient up and ask them to take some deep breaths and coughs. If the saturations remained the same she would apply oxygen and make the MET call. However, *if the saturations improved and no longer fell within the purple zone of the escalation pathway, no MET call would be made*:

> 'Q. How much of an increase would lead to a decision not to make a MET call?
>
> A. If it had changed zones from the purple to the yellow zone.
>
> Q. Well can the Court take from that, that the change of 88 to 93, had it been your observation, would have satisfied you that no MET all was required?
>
> A. Yes, Your Honour.'[135]

15.16. RN Moreton said that this would still be her practice today but 'I would let the medical officer know.'[136]

15.17. Notwithstanding the drop in saturations and the 2L/min oxygen requirement, at 10:30am RN Moreton administered a dose of OxyContin. The witness identified her signature on the medication chart.[137]

15.18. Under cross-examination RN Moreton confirmed that she did not recall ever dealing with a patient who had been prescribed a combination of oral oxycodone, fentanyl and slow-release OxyContin. It was not usual on the stroke ward to have such a patient (Dr Cheruvu gave similar evidence). It was further stated that vital signs are not checked prior to administering opioid medications. If the patient is reporting pain, the sedation score is zero and the medication was due, it will generally be given.[138]

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[133] Exhibit C5 at page 61; Transcript, pages 382-383
[134] Transcript, page 367
[135] Transcript, page 369
[136] Transcript, page 370
[137] Transcript, page 387
[138] Transcript, page 396

15.19. As to the time intervals between opioid doses, RN Moreton confirmed that she was unaware of any policy change at the FMC which required a one hour interval between doses. Given the changes that have been implemented by the FMC in this regard it was disconcerting that a nurse would still administer a second opioid dose after 30 minutes.[139]

15.20. Under cross-examination the various conversations related by Mrs Atkins with nursing staff on Sunday 22 March 2015 were put to RN Moreton for comment. If she had been told about such incidents her evidence was generally to the effect that she would have documented the conversations, notified the Shift Co-ordinator and paged a doctor or an intern for a medical review. By way of example she said the gasping incident could be indicative of respiratory depression.[140.]

15.21. This passage of evidence sits uncomfortably with RN Moreton's evidence about the oxygen desaturation event at 9am. If RN Moreton was so alert as to the risks of respiratory depression one would expect that a reading of 88% oxygen saturations in a patient who had received oxycodone at 7:50am (10mg) and fentanyl at 8:35am (150µg) would have set off immediate alarm bells about the risk of respiratory depression. I am not persuaded RN Moreton would have interpreted the conversations about which she was cross-examined in the manner suggested by her evidence or attributed to them the level of urgency that she claimed. My impression was that her evidence in this regard was given with the benefit of hindsight.

15.22. Overall RN Moreton appeared uncomfortable in the witness box. I noted a tendency, in parts of her evidence, to distance herself from key events. It was difficult to determine whether this reflected an evasive response to questions, or rather a level of discomfort about the legal process. In fairness to the witness I have attributed much of her presentation to the latter.

15.23. On balance I find it more probable than not that RN Moreton took the 9am observations. I accept the evidence of EN Artis regarding her manner of recording observations and that if she had taken the readings her immediate response would have been to make a MET call to the Medical Emergency Response team. On the other hand, on her own evidence, RN Moreton would not have made such a call and she would still not do so. Her evidence was once the saturations had returned to 93% no MET call would be required.

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[139] Transcript, page 394
[140] Transcript, pages 371-372

15.24. I am less certain about the 1:30pm observations. I find that the manner of recording is not inconsistent with EN Artis' usual practices and that these observations could have been taken by either EN Artis or RN Moreton. However, given that RN Moreton recorded a progress note at 1:30pm, I consider it more likely that she also took these observations.

15.25. At the conclusion of this shift Mr Atkins remained on 2L/min oxygen and four-hourly observations.

15.26. I make the following findings:

1) The failure to make a Medical Emergency Response call (MET call) at 9am on Sunday 22 March 2015 was a critical error.

2) The MET call should have been immediately made upon the detection of an 88% oxygen saturation reading, a result which fell within the purple zone of the escalation pathway.

3) The fact that no MET call was made is indicative of an individual and systemic failure.

4) The administration of oxygen at 9am on 22 March 2015 may have assisted Mr Atkins, but it would not necessarily have prevented the onset of respiratory depression.[141]

5) I find it more probable than not that RN Moreton took the 9am observations.

6) Regardless of whether Mr Atkins' oxygen saturations increased from 88% to 93% on application of oxygen and other interventions, the MET call should still have been made. The decision whether or not to make such a call should not have been treated as a discretionary matter.

7) The senior doctor responsible for Mr Atkins should have been notified.

8) The frequency of Mr Atkins' observations should have been increased.

9) No further opioid medications should have been administered unless and until a medical review had been undertaken.

[141] Refer evidence of Professor White and Professor Macintyre

15.27. Overview of afternoon shift

I turn now to the afternoon shift which commenced at 1pm and concluded at around 9pm. Two sets of observations were taken during this shift at 4:40pm and 8:40pm respectively. There is no dispute that at 8:40pm the results of Mr Atkins' oxygen saturations were not recorded on the chart. Yet again there was a failure to comply with basic nursing requirements.

15.28. Despite repeated doses of opioids, by 4:40pm Mr Atkins' pain score had risen from around 4/10 to 7-8/10. At 4:45pm a dose of 150µg of fentanyl was administered, however as at 8:40pm the pain score had not changed.[142] At 9:25pm a further 150µg dose of fentanyl was administered.[143]

15.29. Although the pain score fell within the yellow zone of the escalation pathway, there was no dispute that the escalation pathway protocol (ie a review by a registered nurse and notification of the shift coordinator) was not applied. Mr Atkins remained on 2L of oxygen/min and on four-hourly observations.[144]

15.30. Evidence of Ms Koenecke (Enrolled Nurse) and Rita Cui (Registered Nurse)

EN Koenecke and RN Cui shared the care of Mr Atkins during this shift.[145] Both witnesses gave oral evidence.

15.31. RN Cui was unable to recognise her handwriting/entries on the RaDAR chart. Her evidence was that the observations must have been taken by EN Koenecke.[146]

15.32. EN Koenecke candidly stated that the entries looked like her handwriting and that both sets of observations could have been taken by her. Indeed, EN Koenecke was the only nurse who made such a concession. The witness agreed that at 8:40pm Mr Atkins' oxygen saturations were not recorded on the chart. She was unable to explain the omission, but she accepted the possibility that it was her own oversight. Under cross-examination, EN Koenecke agreed that since Mr Atkins' oxygen saturations had dropped to 88% at 9am, the omission to record the oxygen saturations at 8:40pm was a very serious oversight.[147]

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[142] Exhibit C5a
[143] Transcript, pages 567-568 and 599
[144] Exhibit C5a; Exhibit C5 at page 88; Transcript, page 599
[145] Exhibit C18 Statement of RN Cui
[146] Transcript, page 572
[147] Transcript, pages 597-599

15.33. EN Koenecke recalled having conversations with family members during the shift but she could not recall the contents, a matter which is unsurprising given the lack of documentation and the passage of time. If she had received information along the lines recounted by Mrs Atkins she would have documented it and informed a registered nurse and the nursing coordinator because it would have aroused concerns about Mr Atkins' drowsiness and the level of pain relief. EN Koenecke was aware that one of the dangerous side effects of opiate medications is respiratory depression.[148]

15.34. RN Cui was also asked about these conversations but she had no recollection of having any conversations along these lines. As to the shower incident, her evidence was that if she had been told that Mr Atkins was unable to stand up while showering she would have documented the conversation. RN Cui added that if another nurse had been told that Mr Atkins was 'groggy or out of it' she would expect to be informed. She then would have undertaken further investigations.[149]

15.35. I am satisfied that, with the exception of the conversation at the nurses' station (which could have been with another nurse/s who were on the ward) it is most likely that Mrs Atkins raised her concerns with either EN Koenecke or RN Cui. I further find that the conversations were not documented and, whomever she spoke to, did not recognise the significance of the information that was being communicated. With the benefit of hindsight it appears that the emerging clinical picture of a deteriorating patient was not identified.

15.36. A progress note was made by RN Cui at 7pm. She recorded *inter alia* that Mrs Atkins had showered her husband 'this pm' and that he had 'vomited twice after dinner'. Reference was made to a pain score of 8/10 'this am'. When questioned under cross-examination about the vomiting episode RN Cui said that she was on a break at that time. She had learned about it from EN Koenecke and the shift coordinator. The identity of the shift coordinator was not established.[150]

15.37. Under cross-examination RN Cui was questioned about what steps were taken, if any, to address the vomiting episode. It was only then that the Court ascertained that after returning from her break RN Cui and another nurse (unidentified) spoke to a doctor by telephone. The doctor prescribed intravenous Ondansatron (4mg).

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[148] Transcript, pages 599-600
[149] Transcript, pages 575-576, 583 and 596
[150] Exhibit C5 at page 61; Transcript, page 569

15.38. If RN Cui did have any concerns about the possible relationship between Mr Atkins' vomiting and levels of opioid medication it would clearly have been an opportune time to discuss this with the doctor and/or to request an intern or other medical officer to review Mr Atkins. This did not occur.

15.39. I consider it surprising that the nursing staff were not worried about Mr Atkins by this stage. Repeated opioid doses since his admission had not alleviated his pain to any significant degree and this was clearly evident from the medication and observation chart. It is noteworthy that each of the escalation pathways includes as a criteria 'You are worried about the patient'. It seems to me that the nursing staff did not draw any connection between the pain score, level of required pain relief and the vomiting. In my view the combination of factors called out for a medical review, but this did not occur.

15.40. My impression of the evidence was that RN Cui's primary focus at that time was to obtain authorisation for medication to treat the symptoms of vomiting. Although the FMC offers in-service training and education seminars on topics that include pain relief, RN Cui openly acknowledged that she relied primarily on the contents of her university course for such knowledge.[151] She knew that respiratory depression was a risk factor in the context of opioid analgesia but, at the same time, the witness acknowledged that she could not recall nursing a patient on such high doses of opioid medications. If that is so, it is hardly surprising that the need to further investigate the cause of the vomiting and the potential link to the level of medication may not have occurred to RN Cui. In fact, I was not convinced that RN Cui (or the other nurses from Ward 6C who gave evidence to the Inquest) had much experience in managing and/or monitoring patients on such medications or that they had a sound knowledge of the inherent dangers of opioid medications and, in particular, the risk of respiratory depression.

15.41. It is noteworthy that Dr Cheruvu had re-attended at the hospital at around 8:30am on Sunday 22 March 2015 and she remained on-call. Yet at no stage on that day were any concerns raised with Dr Cheruvu about Mr Atkins' level of drowsiness and she was not requested to conduct a medical review. *Nor was Dr Cheruvu told about the vomiting episode.* During her oral evidence she said that if she had been made aware of the vomiting her response would have been to initiate basic interventions that included

[151] Transcript, page 582

directions for a chest X-ray and tests for arterial blood gases to ascertain whether Mr Atkins was accumulating any carbon dioxide. She would also have recommended a referral to the Acute Pain Service. I accept Dr Cheruvu's evidence on these matters which, in any event, was unchallenged.[152]

15.42. At 9:25pm Mr Atkins was given a further 150µg dose of fentanyl.[153]

15.43. EN Koenecke presented as a candid and forthright witness. Unlike several other nurses who gave evidence there was no attempt to distance herself or to shift blame onto others for matters that could reflect adversely on her credit. In relation to the RaDAR observation chart entries, EN Koenecke's evidence stood in stark contrast to those witnesses who were unable or perhaps unwilling to identify their entries on the chart. I have no hesitation in accepting her evidence in its entirety. I commend EN Koenecke for her candour.

15.44. By contrast, RN Cui tended to distance herself from accepting responsibility for key events. Her evidence showed a tendency to deflect blame onto the enrolled nurse. Overall I did not find RN Cui to be a particularly impressive witness. Her evidence was largely self-serving and did little to cast light on the key issues.

15.45. I make the following findings:

1) I am unable to determine with any certainty who took the observations during this shift.

2) I find that at 4:40pm Mr Atkins should have been reviewed by a registered nurse and the shift coordinator should have been notified of the increased pain score. No such review occurred and the escalation pathway protocol was not applied.

3) I find that the frequency of monitoring should have been increased at this time.

4) I find that after becoming aware of the vomiting episode RN Cui should have paged an intern, another medical doctor or the stroke consultant (Dr Cheruvu) and requested a medical review of Mr Atkins.

[152] Transcript, page 243
[153] Transcript, pages 567-568 and 599

5) Despite repeated doses of opioids I find that by 8:40pm the pain score remained unchanged. I find that the apparent ineffectiveness of the opioid analgesia should, of itself, have raised concerns about Mr Atkins' condition.

6) I find that no further opioid medications should have been given to Mr Atkins after the vomiting episode unless and until a medical review had occurred.

7) I further find that the recorded sedation scores of zero throughout Sunday 22 March 2015 were inconsistent with the observations that were made by Mrs Atkins and her family throughout Sunday 22 March 2015. I consider it likely that on Sunday 22 March 2015 Mr Atkins' sedation score reached a level of two and opioid medications should have ceased pending a medical review.

15.46. At the conclusion of this shift Mr Atkins remained on 2L of oxygen and on four-hourly observations.

15.47. I should add that the fact that no action was taken will be attributable to a lack of knowledge, education and/or training about the inherent dangers of opioid medications, but the fact remains that the failure to take a precautionary approach was another opportunity lost for a medical intervention.

15.48. I turn now to the late/overnight shift which commenced at around 9pm on Sunday 22 March 2015 and concluded at 7:30am on Monday 23 March 2015.

15.49. <u>Evidence of Shelley Zeigler (Registered Nurse) and Jenna Louise Baranauskas (Registered Nurse)</u>

On 22 March 2015 Ms Shelley Zeigler, a registered nurse, was allocated as the shift coordinator.[154] She shared the care of Mr Atkins with another registered nurse, RN Baranauskas. Both witnesses gave oral evidence.[155]

15.50. RN Baranauskas said that there was a shortage of nursing staff on the night shift and she had been allocated as a relieving nurse 'to help fill their numbers'.[156] She had not previously worked on the stroke ward but had gained some experience in nursing patients on opioid medications in the ED. It was recalled that RN Cui and another nurse (Annette Pix) conducted a handover at around 9pm. The witness did not recall being

[154] A shift co-ordinator manages the flow of admissions and discharges and ensures there are adequate nursing staff for the next shift. RN Zeigler was the only witness who was identified as a shift co-ordinator during the Inquest
[155] Transcript, pages 176-229 (Ziegler) and pages 292-353 (Baranauskas).
[156] Transcript, page 293

told why Mr Atkins was receiving oxygen. Mr Atkins was asleep at the time of handover.[157]

15.51. RN Baranauskas first saw Mr Atkins at 9:40pm. At this time she said he was 'alert, completely alert, awake and oriented'.[158]

15.52. At 10:10pm a dose of 30mg OxyContin was administered by RN Ziegler.[159] RN Ziegler did not recall being told why Mr Atkins was receiving oxygen and she did not usually work with patients who were on such high levels of opioids. The witness added that *she had not received any particular training regarding respiratory depression or the signs to watch for when patients were on such levels of opioids.* Based on the training she had received she said 'we would be monitoring a respiratory rate … for respiratory depression'. *It was apparent that RN Ziegler had limited knowledge and/or experience regarding the detection of opioid overdose or toxicity.*[160]

15.53. At 1am RN Baranauskas entered Mr Atkins' room to take his observations. He was not wearing nasal specs because one of the 'specials' had removed them to facilitate a trip to the bathroom.[161] On his return from the bathroom Mr Atkins' observations were taken. A number of things became apparent:

- Firstly, the pain score was unchanged (7-8/10).
- There was a drop in blood pressure and heart rate;[162] and
- Mr Atkins' oxygen requirement was increased from 2L/min to 4L/min.

15.54. RN Baranauskas said that she mentioned the 1am observations to RN Ziegler at the time.[163]

15.55. By reference to a retrospective case note that was made on 23 March 2015 the witness said that the initial oxygen saturation reading on room air was around 90-91%. The oxygen nasal specs were reapplied but the saturations remained at around 90-91%. After increasing the oxygen flow to 3 L/min the saturations increased slightly to around

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[157] Exhibit C13; Transcript, pages 298, 301 and 322
[158] Transcript, pages 297, 302 and 323
[159] Transcript, pages 210 and 212
[160] Exhibit C5 at page 90; Transcript, page 205; NB Professor Macintyre emphasised that respiratory rates *should not be relied upon* to indicate the absence of respiratory depression. The better early clinical indicator is increasing sedation - Refer Transcript, page 432
[161] A 'special' is a nurse who cares for one patient only - there were two such patients in the four bed ward in which Mr Atkins' had been placed
[162] Transcript, page 329
[163] Transcript, page 332

91% to 92%.[164] It was only when the oxygen was increased to 4L/min that Mr Atkins' oxygen saturations increased to 95-96%.[165]

15.56. The higher figure of 95% was recorded in a single column on the chart.[166] RN Baranauskas candidly stated that she had forgotten to record the initial oxygen saturation that had been taken on room air (RA). This was the third time in 48-72 hours that a trained nurse had failed to comply with recording requirements on the RaDAR chart.

15.57. Under cross-examination RN Baranauskas agreed that the combined observations represented a significant deterioration in Mr Atkins' condition, *but she did not consider it to be so at the time.* The observations were not even recorded in a progress note.[167] RN Baranauskas conceded that *she did not consider the possibility of respiratory depression at the time. Neither did she consider requesting a medical review.* Indeed, the witness attributed the drop in saturations to the bathroom trip whilst the nasal specs had been removed. Ironically, Professor White subsequently opined that the trip would be *more likely to increase the saturations*, on account of the exertion required.

15.58. With the benefit of hindsight RN Baranauskas acknowledged that she ought to have requested a medical review.

15.59. The pain score at 1am fell on the border of the yellow/red zone. For the reasons I have previously stated, the case should have been escalated in accordance with the RaDAR pathway protocols. At the very least, the following actions were required:

- A registered nurse must review the patient.
- The frequency of observations must be increased; and
- Any anxiety or pain must be managed and oxygen requirements reviewed.[168]

15.60. It is unclear from the evidence whether RN Ziegler accepted that RN Baranauskas had discuss the 1am results with her. Under cross-examination her evidence was that she

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[164] Professor White opined that one would expect the movement of walking to the toilet to *increase* saturations rather than decrease them as postulated by RN Baranauskas
[165] Exhibit C14 Meeting Note - retrospective case note; Transcript, pages 326 and 334
[165] Ibid
[166] Exhibit C14 Meeting Note - retrospective case note; Transcript, pages 326 and 334
[167] Ibid
[168] Exhibit C5a

would have treated a pain score of 7-8 as falling within the red zone, that is to say, it would have been escalated to a review by a Multi-Disciplinary Team.

15.61. The fact of the matter is that neither an RN Review nor an MDT review occurred, omissions which were not the subject of dispute.[169]

15.62. I find that a critical opportunity for medical intervention was lost.

15.63. To compound matters, at 1:15am a 150µg fentanyl dose was administered. The medication chart was jointly signed. There was no discussion between the two registered nurses about the need to escalate the matter. When pressed, RN Baranauskas said, rather tellingly in my view, that 'we were acting appropriately to his pain relief as per the medication chart'.[170] This comment reflected the general tenor of the evidence that had been given by several nurses who had cared for Mr Atkins on Ward 6C, namely, that the primary trigger for repeated administration of opioids was the fact that the patient reported pain and the PRN prescription permitted a further dose.

15.64. RN Baranauskas had two further interactions with Mr Atkins at 2:45am and 3:10am respectively. At these times Mr Atkins was still in severe pain. At 2:45am, 20mg of oxycodone was administered. At 3:10am a further dose of 150µg of fentanyl was administered. It is noteworthy that this dose of fentanyl was given only 25 minutes after the oxycodone.[171] Notwithstanding the results of the 1am observations, no precautions were taken such as rechecking the oxygen saturations, blood pressure or a pulse rate prior to administration of further medication.[172] RN Baranauskas said that she voiced some concerns to RN Ziegler about the proximity of the fentanyl and oxycodone dose, but there was no discussion about a medical review.[173]

15.65. My overall impression was that these well-meaning nurses were oblivious to the very real risks associated with repeated doses of opioids in a patient and oblivious to the fact that the 1am observations were signs of a deteriorating patient which needed investigation.

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[169] Transcript, pages 185-186
[170] Transcript, pages 312 and 338-339
[171] Transcript, page 331
[172] Transcript, page 330
[173] Transcript, pages 331-332

15.66. This conclusion is reinforced by the decision that was made at 5am. RN Baranauskas had taken her break between around 4:40am and 5:20am.[174] At around this time RN Ziegler was in Mr Atkins' room relieving one of the specials while her partner was on a break. She heard Mr Atkins snoring:

> 'I thought it was a relief that he was sleeping because he hadn't been observed to be sleeping at any other time when we were in that room.' [175]

15.67. On return from her break RN Baranauskas learned that Mr Atkins was asleep and snoring.

15.68. Although Mr Atkins' second set of observations was due at 5am, it had been decided not to wake him. It is unclear whether one or both nurses made this decision. My impression was that the decision was made by RN Ziegler and that RN Baranauskas learned about it on return from her break.

15.69. Such a decision, however well-intentioned, was a blatant breach of the four-hourly monitoring regime. It also reveals, in my view, a level of ignorance about the underlying risks associated with opioid medications and the need for close monitoring of such patients.

15.70. At 5:15am and 5:30am RN Ziegler recorded progress notes.[176]

15.71. Mr Atkins was not reviewed again until around 6:05am. At that time he was found to be unresponsive. CPR was commenced and the Medical Emergency Response Team was called. The team arrived within two to three minutes and they assisted with the unsuccessful resuscitation attempt.[177]

15.72. I found both RN Ziegler and RN Baranauskas to be honest and reliable witnesses. They gave their evidence in a direct and unembellished manner. I accept their evidence. The best that can be said is that they acted to the best of their ability and that the decision not to take the 5am observations was made in good faith. At the other end of the scale, I find that they did not have sufficient knowledge, skill and/or experience to be charged with the responsibility of monitoring a patient who was receiving such high levels of

[174] Transcript, pages 331 and 341
[175] Exhibit C5 at page 1 (retrospective case note); Transcript, page 202
[176] Exhibit C5 at page 62
[177] Exhibit C5 at page 1 (retrospective case note 19/11/15 - 1000 hours)

opioid medications and that there was a failure to apply the mandated escalation pathway protocols.

15.73. I make the following findings:

1) I find that a critical opportunity for medical intervention was lost at 1am. At that time:

   a. An RN Review should have been conducted and the shift coordinator should have been informed of the results.

   b. The 90-91% oxygen reading on room air should have triggered alarms and the underlying cause should have been investigated.

   c. I find that the oxygen that was administered at 1am on 23 March 2015 would have triggered the voluntary breathing response, but it may have done nothing to improve involuntary respirations.[178]

   d. A medical review should have been requested and the frequency of observations increased.

   e. No further opioid medications should have been administered unless and until the medical review had been undertaken.

   f. A medical intervention at this time could have changed the outcome for Mr Atkins.

2) Mr Atkins' observations should have been taken at 5am. On the available evidence I am unable to find with any certainty whether the outcome may have been different if he had been woken at that time.

15.74. In making these findings (and indeed other findings that have been made in relation to other members of the nursing staff), I am mindful of the *Briginshaw* principles. I also have regard to the fact that the nursing staff did not have the benefit of clear written directions or guidelines from the medical doctors as to minimum intervals between doses and/or things to watch out for (eg drowsiness) and factors which might indicate the onset of respiratory depression. One would expect that nurses who are given the responsibility to care for such patients have the requisite knowledge, but the absence of clear directions compounded the whole situation.

[178] Refer evidence of Professor White - Transcript, pages 493 and 505-506

15.75. I have also had regard to the evidence of RN Baranauskas, namely that a culture existed at the FMC which discouraged nursing staff from contacting or 'bothering' doctors unless an issue was deemed to be 'quite significant'.[179] It was not within the scope of the Inquest to examine the source of this statement. I can only say that if a such culture exists within the hospital, the effect of which leads to nursing staff ignoring mandatory protocols that are put in place to protect patient safety, it is an alarming state of affairs and something about which the hospital should be proactive.

16. Expert evidence of Professor Jason White

16.1. Professor Jason White is a Professor of Pharmacology and Head of the School of Pharmacy and Medical Sciences at the University of South Australia. He examined the relevant statements, reports and medical case notes in this matter and provided a report which was supplemented by oral evidence.[180]

16.2. The salient features of his evidence can be summarised as follows.

16.3. Fentanyl is an opioid analgesic used in the treatment of moderate to severe pain. It has strong analgesic properties but also adverse effects which include respiratory depression, sedation, cognitive impairment, nausea and vomiting. Fentanyl is generally regarded as one of the stronger opioids. Fentanyl can be administered by a number of different routes. Following subcutaneous administration the maximal concentration is reached in approximately 15 minutes.[181]

16.4. Oxycodone is an opioid with effects that are very similar to those of fentanyl. Although it is a shorter acting drug, it has the same kind of action in the brain.[182]

16.5. Professor White said that respiratory depression caused by opioids is characterised by a reduced drive to breathe without any choking sensation. Opioid drugs such as fentanyl cause a decrease in breathing in two main ways: firstly, it has an overall depressant effect on brain activity, particularly in the regions of the brain that control breathing; secondly, one of the effects of opioids is to block the signals to the brain which measure oxygen and carbon dioxide levels in the blood. Put simply, when people die from an opioid overdose it is not on account of insufficient air, they just do not

[179] Transcript, pages 315-316, 330-332 and 339-341
[180] Exhibits C8 and C8a; Transcript, pages 480-511
[181] Exhibit C8 at pages 2-3; Transcript, pages 481-482 and 485
[182] Exhibit C8 at page 3; Transcript, pages 485-487

breathe. The person does not feel the desire to breathe and the brain does not know that the oxygen and carbon dioxide levels are abnormal.

16.6. Other complicating factors may play a role as well, such as sleep apnoea.[183]

16.7. Adverse effects that are characteristic of opioid drugs include difficulty breathing, vomiting and pronounced sedation. The effects vary from person to person and monitoring the patient is therefore very important.[184]

16.8. Professor White said that *the risk of death is heightened by sleep*. An overdose is characterised as a gradual decline which happens over a period of hours. The risk is increased at the time of peak concentration, but they often occur at a later time because of other factors or because the start of the overdose may have been a peak time, but the person does not die until several hours later.[185] Accordingly, it is important to be universally cautious about administration of opioids:[186]

> 'I think anytime an opioid is administered and is administered in a significant concentration **it should be regarded as potentially life-threatening. Opioids are dangerous drugs, they have the potential to cause death, principally through respiratory depression**.'[187] (Emphasis added)

16.9. Significantly, Professor White opined that although the administration of oxygen at 9am on 22 March 2015 may have assisted Mr Atkins, it will not necessarily prevent respiratory depression occurring.[188] Similarly, the oxygen that was administered at 1am on 23 March 2015 would have triggered the voluntary breathing response, but it may do nothing to improve involuntary respirations.[189]

16.10. Professor White described the prescribed dosages and pattern of dosing of each of the opioid medications as consistent with normal practice, particularly for treatment of severe pain.[190] As to the estimated peak concentrations, Professor White opined that the peak concentrations of fentanyl on Sunday 22 March 2015 occurred at around

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[183] Transcript, page 488
[184] Exhibit C5 at page 4
[185] Transcript, page 489
[186] Transcript, pages 487-490
[187] Transcript, pages 485 and 504
[188] See also evidence of Professor Pam Macintyre, Transcript, pages 57-62
[189] Transcript, pages 493 and 505-506
[190] Exhibit C8 at page 2; Transcript, pages 484-485

8:50am and 3:25am respectively and that the oxycodone that was given at 2:45am on Sunday 22 March 2015 would have peaked at around 3:45am.[191]

16.11. Based on the dosing pattern Professor White did not consider that the amounts of the two drugs given would necessarily result in an opioid overdose. However, *the observations made by family members, and the reported observations to nursing staff, indicated that Mr Atkins experienced adverse effects that are characteristic of opioid drugs, namely difficulty breathing, pronounced sedation and vomiting.* These effects are consistent with the concentration of the two drugs having reached levels that posed a significant risk.[192]

16.12. As to the combined use of oxycodone and fentanyl, Professor White did not regard it as common place in the context of pain management and he explained the risks arising from the additive effect of the drugs. While neither of the drugs alone would necessarily pose a risk, once they were combined, in Mr Atkins' case, he said that the potential for additive risk was quite high.[193] Best practice is regarded as giving a single opioid drug and making another available if there is breakthrough pain.[194]

16.13. The addition of the slow release form of oxycodone, OxyContin, added complexity to the whole situation.[195] He said it was not usual to combine a longer acting opioid drug with other shorter acting opioids such as oxycodone and fentanyl. It too would have resulted in an additive effect.

16.14. Put simply, an opioid will reach a peak and then begin to decline. If the level does not return to the pre-administration level and another dose and/or another opiate is administered, the result is gradually increasing concentrations of opioids in the blood.[196] Furthermore, the combined use of the drugs makes it difficult to predict concentrations and peak effect times as one drug was administered subcutaneously and the others orally:[197]

> '…the essential thing…with opioids is to monitor the person very carefully…so that you can observe whether the drug is having significant adverse effect'.[198]

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[191] Transcript, pages 485-487, 491, and 507; This opinion was prepared in consultation with Professor Richard Upton (an expert on the changes in concentrations of opioids and other drugs in the body)
[192] Exhibit C8 at page 5
[193] Transcript, page 106
[194] Transcript, pages 490-491
[195] Transcript, page 509
[196] Transcript, pages 497 and 509-510
[197] Exhibit C8 at page 4; Transcript, pages 494-496
[198] Transcript, pages 496-497

16.15. Professor White was asked whether Mr Atkins should have been monitored more frequently:

> 'Q. Is there an argument that could be advanced that in the case of someone like Mr Atkins, given the combination of the short and slow form of oxycodone and the fentanyl, that he ought to have been monitored more frequently than four-hourly overnight?
>
> A. Yes.
>
> Q. When sleeping?
>
> A. Yes, I think so because the four-hourly can miss a very large window of time where the effects could have changed quite significantly. So every four hours is a relatively long period of time. In the case of the fentanyl, [he was] presumably observed at the time the dose was administered, but as I mentioned the peak would occur about 15 minutes later, if it was not another four hours you'd actually miss the main effects of fentanyl if he wasn't observed for four hours after injection was given.' [199]

16.16. Professor White was critical of the monitoring regime. His evidence was that it is *essential that those who are monitoring the patient are aware of the additive effects of the opioid medications and are accustomed to observing for the specific signs of adverse effects.* Otherwise they may not understand the level of risk involved (eg respiratory depression).[200]

16.17. Reliance on general principles gained as an undergraduate is insufficient because such learning is not always retained. For this reason refresher training is recommended for nurses and doctors so that they are able to keep abreast of changes in understanding and practices related to the use of opioid medications.[201]

16.18. The practice of nurses relying on PRN prescriptions which do not contain clear parameters or guidance (such as limiting the number of doses or increasing monitoring) was described as very risky, particularly if the drugs are being given frequently.[202]

16.19. Professor White also observed that some types of pain (eg neuropathic pain) are just not very responsive to opioids. *He said that there comes a point at which it is futile to continually give a person an opioid drug if it is not effective in relieving pain. If despite giving extra opioids there is no demonstrable clinical effect, assistance ought to be*

[199] Transcript, pages 407-498
[200] Transcript, page 504
[201] Transcript, pages 499-500
[202] Transcript, pages 497-501

sought from a pain specialist and those monitoring should be guided to do so. Otherwise continuing opioid medication simply puts the person at greater risk. [203]

16.20. Professor White concluded that there was no reason to doubt that Mr Atkins' death was due to oxycodone and fentanyl toxicity.[204]

16.21. Professor White was well-qualified to provide expert evidence and opinion evidence on the areas he canvassed and I accept his evidence in its entirety.

17. Expert evidence of Professor Pam Macintyre

17.1. Professor Macintyre is a specialist pain medicine physician, senior consultant anaesthetist at the RAH and the Director of the RAH Acute Pain Service. Relevant statements, reports and medical case notes were examined and a report was tendered by consent. Professor Macintyre also gave oral evidence.[205]

17.2. Professor Macintyre has particular expertise in the management of acute pain. In 1989 she established the first Acute Pain Service (APS) in Australasia. In addition she has published widely on the topic.[206] I have no hesitation in accepting Dr Macintyre as a suitably qualified expert in the area of pain management.

17.3. In many respects Professor Macintyre's evidence concurred with that of Professor White regarding the nature of opioids, the methods of administration and time of the peak effect of the drugs.

17.4. Professor Macintyre described respiratory depression as a very real risk in the context of opioid medications. Put simply, respiratory depression is inadequate ventilation of the lungs which leads to an increase in carbon dioxide levels. The degree of inadequate ventilation will determine how rapidly carbon dioxide levels will rise. As they rise the patient may become drowsy, and as levels continue to increase further, the patient will become unconscious. This process may take some hours. Significantly, Professor Macintyre stated that *sedation and excessive drowsiness are the best early clinical*

[203] Transcript, pages 501-502
[204] Transcript, page 509
[205] Exhibit C9 (as amended and admitted on 6 March 2018); Transcript, pages 429-431
[206] Exhibit C9c; Transcript, pages 427-429

indicators of respiratory depression. Best practice is intermittent assessment of sedation, which includes waking a sleeping patient to assess sedation.[207]

17.5. It was noted that Mr Atkins had a past history of neuropathic pain which he managed primarily by over-the-counter medications. Professor Macintyre said that neuropathic pain will often not respond as well to opiates such as fentanyl and oxycodone as compared to the type of pain which is usually seen after surgery or trauma. Professor Macintyre stated that *a patient with neuropathic pain can still have significant pain even when the dose of an opioid is excessive.* In this situation *giving more and more opioid may just lead to adverse effects related to the drug with little benefit in terms of pain relief.*[208]

17.6. As to the use of slow-release opioids for the management of acute pain, it was expressly stated that opioids such as OxyContin should *absolutely not be used.* This practice was said to be unsafe. At the RAH the use of these drugs is restricted to a few prescriber groups only (eg the Acute Pain Service).[209]

17.7. I turn now to the evidence given by Professor Macintyre about the importance of the sedation score assessment. Professor Macintyre opined that Mr Atkins' zero sedation scores throughout his admission were at odds with the descriptions of sedation given by members of the Atkins family. Her evidence was that these descriptions, if accurate, could have indicated the presence of respiratory depression due to opioid analgesia. Importantly, it was explained that although a person may be waking or appearing to be awake (eg at the time observations are taken), *the key to assessing sedation is not whether the patient wakes up easily, but rather whether he or she has trouble staying awake, regardless of what they are doing.*[210] As I understood the evidence, even if Mr Atkins woke up easily and appeared to be awake and alert at the time of observations, this would not necessarily mean that his sedation would remain at zero until the next scheduled four-hourly observation. Best practice would be to conduct intermittent checks *to ensure that he was not experiencing trouble staying awake.*

17.8. This is an important piece of evidence. It was apparent from the evidence given by nursing staff that the zero sedation score provided a level of reassurance to the staff. No intermittent assessments of sedation were done at any other times. Therefore

[207] Exhibit C9 at pages 2 and 4; Transcript, pages 432, 451-453 and 457-458
[208] Exhibit C9 at page 1
[209] Exhibit C9 at page 3; Transcript, pages 449-450
[210] Transcript, page 436

Mr Atkins was never checked in order to determine whether he had difficulty remaining awake. To compound matters, the concerns about drowsiness or difficulty in staying awake that were reported to nursing staff by Mrs Atkins were neither documented nor acted upon. In my opinion it is likely that the nurses who received these complaints simply did not recognise their significance and the need to review sedation levels.

17.9. Prof Macintyre said that it was important for staff to take on board comments made by visitors or family members about a patient's level of sedation. It was emphasised that they must not only understand how to assess the sedation score, they must know what to do by way of a response. That is why *the RAH guidelines require sedation to be assessed at the time of opioid administration and one hour later* so as to pick up the peak effect of the opioid and to identify sedation levels. At the RAH, if the sedation score is two then no more opioid can be given, a doctor must be contacted and the next dose must be less. Dose interval directions must also be given and recorded by medical staff at the time of prescribing the initial dose.[211]

17.10. Professor Macintyre added that nurses can only be guided by the charts and the instructions that they are given. If there is no documentation or direction about the things they should be watching for, or the frequency of monitoring, she considered it to be a systemic failing rather than an individual failure.[212]

17.11. I turn now to the role of respiratory rate in the context of respiratory depression. Mr Atkins' respiratory rate readings were within normal parameters throughout his admission. Professor Macintyre emphasised that *respiratory rates should not be relied upon to indicate the absence of respiratory depression*.[213] A respiratory rate that falls within normal range *would not indicate anything about how opioids may have been affecting Mr Atkins*.[214] It was explained that a person can have a respiratory rate that is within normal range, but a low tidal volume (ie the air moving in and out of the lungs). Such a person can still have inadequate ventilation of the lungs and carbon dioxide levels can build up. Furthermore, a decrease in respiratory rate is known to be a late and unreliable indicator of respiratory depression and severe respiratory depression can be present in a patient who has a 'normal' respiratory rate. *The better early clinical*

[211] Transcript, pages 444, 451-452 and 463
[212] Transcript, pages 452, 454 and 462
[213] Transcript, page 432
[214] Transcript, page 431

indicator is increasing sedation.[215] As I understood the evidence, any reassurance derived by nurses from a normal respiration rate would be misconceived.

17.12. Professor Macintyre also addressed issues arising from oxygen saturation levels. The evidence can be summarised as follows.

17.13. Oxygen levels can drop for a variety of reasons. For example, the levels can drop in patients who are not even receiving opioid medications (eg post-surgery). In a general sense it is a very non-specific indicator. That said, Professor Macintyre explained that if oxygen saturations are low and the patient is receiving oxygen, it is an indication that something is going on, but not a specific indicator of what. *Thus the underlying issue requires investigation.* Although commencing oxygen therapy may bring oxygen saturation levels back to within normal range, she said that *it can mask an underlying problem.* Thus, while the oxygen helps to keep patients safe from dangerous hypoxaemia, it is not addressing the underlying issue and it is that issue which must be investigated.

17.14. It was plain from the evidence given by the nurses who detected the low oxygen that they were reassured when oxygen therapy resulted in an increase in oxygen saturations. Indeed, RN Moreton said that if she had taken the 9am observations on Sunday 22 March 2015 that she would not have made the mandated MET call if the 88% initial oxygen saturation reading increased to 95% on application of oxygen therapy or other interventions.[216] Similarly, at 1am on Sunday 22 March 2015 an oxygen reading of 90-91% on room air and an oxygen requirement of 4L/min did not trigger any apparent concern about the underlying cause of the patient's condition.

17.15. Professor Macintyre expressed concern that an oxygen saturation level of between 90-94% falls within the yellow shaded zone of the escalation pathway protocol. It was opined that 90% is 'right on a curve' and it does not take much for the saturations to then drop to a precipitous level. For example, if the patient falls asleep the oxygen saturations will inevitably lower as compared to being awake. This occurs on account of the relaxation of the upper airway muscles and it can worsen with an excessive dose of opioid. It was also a matter of concern that a sedation score of two also falls within

[215] Exhibit C9 at page 4; Transcript, page 432
[216] See Inquest Finding at page 40

the yellow zone. Professor Macintyre noted that under the RAH new Enterprise Patient Administration System (EPAS) a sedation score of two is in the red zone.[217]

17.16. As to the use of pain scores to adjust opioid dosages, this practice was described as unsafe:

> 'Opioids should not be given based solely on a patient's reported pain scores… To use it (pain score) as a trigger… for medical intervention is not necessarily safe. It's absolutely not safe to use pain scores only to adjust the dose of opioid.' [218]

17.17. Evidence was given about the combined use of oral opioids with those that are to be administered subcutaneously. Professor Macintyre said that while it is not uncommon for such a combination to be ordered, it is important to allow enough time for the full effect of one dose to be assessed before another is given. A one hour minimum gap between doses as per the RAH guidelines was recommended.[219]

17.18. As to the timing between doses, Professor Macintyre opined that some doses in Mr Atkins' case were given too closely together: for example, on 21 March 2015 the oxycodone was given at 10:45am and a fentanyl dose followed only 30 minutes later at 11:15am. On 22 March 2015 fentanyl was given at 12:05am and a dose of oxycodone followed at 12:20am. On 23 March 2015 the peak effects of the oral oxycodone that was given at 2:45am and the fentanyl dose that followed at 3:10am would have occurred at around the same time. Such practices are not permitted at the RAH.[220]

17.19. I turn now to the topic of snoring. Professor Macintyre said that snoring is not necessarily a sign of respiratory depression. It may happen normally due to relaxation of the muscles of the upper airway. The snoring indicates partial airway obstruction. At the same time, snoring can result from opioid administration. As I understood the evidence, it is a non-specific indicator. However, in excessive opioid doses, repeated airway obstruction can contribute to the rise in carbon dioxide levels and respiratory depression. For example, when Mr Atkins was heard snoring at 5am, it could have been an indicator of respiratory depression.[221]

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[217] Transcript, pages 434-435 and 437
[218] Exhibit C9 at page 1; Transcript, pages 430-440
[219] Exhibits C9, C9a and C9d: Transcript, pages 448-449
[220] Transcript, page 445; NB It is unclear whether Professor Macintyre and/or Professor White had regard to the dose of OxyContin that was given at 10:10pm on 23 March 2015 (see C5 at page 90 - Of note, the effect of the opioids could have been more pronounced and the peak concentrations even higher)
[221] Exhibit C9 at page 4; Transcript, page 450

17.20. This leads to a consideration of the topic of sleep apnoea. Mrs Atkins said that her husband suffered from sleep apnoea, albeit without it being treated with the use of a CPAP machine. Professor Macintyre said that although it is often thought that patients with pre-existing sleep apnoea are more at risk of opioid-induced respiratory depression, the majority of people who come to harm from an opioid have no identifiable risk factors. It is also known that patients who have been confirmed as *not* suffering from sleep apnoea can develop moderate to severe sleep apnoea when they are given an opioid. It is therefore better to monitor all patients properly rather than to try and identify 'at risk patients' for special monitoring. Such an approach will result in leaving other patients at continued risk.[222]

17.21. Professor Macintyre made some observations about the new Southern Adelaide Local Health Network (SALHN) guidelines that were developed after Mr Atkins' death and in response to the recommendation made by the Root Cause Analysis team (RCA) under section 72(1)(a) of the *Health Care Act* 2008 (SA). The objective of an RCA is to determine the root cause and contributing factors for a death and to make recommendations for improvement to prevent or reduce the likelihood or severity of a future adverse event occurring.[223] According to Professor Macintyre a perusal of these recommendations indicates that work has been done at the FMC to improve the monitoring and other aspects of acute pain management. It was observed that the acute pain guidelines appear to mirror the RAH guidelines.[224]

18. Expert evidence of Professor Jack Cade

18.1. Professor Cade is an Emeritus Specialist in Intensive Care at the Royal Melbourne Hospital. Professor Cade examined the relevant statements, reports and medical case notes in this matter and provided an expert report. He was not required for oral examination.[225]

18.2. During the Inquest it became apparent that the protocols and standards which apply to opioids in Victoria differ significantly from those which apply in South Australia. For this reason the report and its conclusions were of limited assistance to the Inquest, a matter which was agreed by all counsel. Accordingly, counsel assisting Ms Waite

[222] Transcript, pages 450-451
[223] Exhibit C15 - Affidavit of Diane Jane Taylor
[224] Transcript, page 455
[225] Exhibit C7

confirmed that no reliance was placed on opinion that had been expressed by Professor Cade and which cast doubt on the cause of death.[226] In any event, to put the matter beyond doubt, I prefer the opinions expressed by Dr Charlwood, Professor White and Professor Macintyre so far as they relate to the cause of death. Professor Cade's report does not change my view.

19. Evidence of Diana Jane Taylor

19.1. Ms Taylor is employed within the Southern Adelaide Local Health Network (SALHN) as the safety manager in the Clinical Governance Unit. A comprehensive affidavit was tendered by consent.[227]

19.2. Ms Taylor was involved in the Root Cause Analysis (RCA) process that was conducted pursuant to section 72(1)(a) of the *Health Care Act* 2008 (SA).[228]

19.3. Five comprehensive recommendations were made. I do not intend to repeat their contents which are set out in detail in the affidavit. Suffice it to say that they include recommendations for a comprehensive review of guidelines across the SALHN for the ordering of immediate release opioids and processes, a review of SALHN education programs to all clinical staff, the clinical use of the Rapid Detection and Response (RaDAR) observation chart and further training on completing the chart to enhance its use in visual recognition of clinical deterioration via observations that may require a response and/or escalation.[229]

19.4. The affidavit addressed SALHN's response and actions that have been taken to implement these recommendations as at February 2018. These actions include:

- The development of new draft SALHN guidelines for appropriate prescribing, administration and documentation of opioids. It is noted that these guidelines were reviewed by the SALHN Drug and Therapeutics Committee on 23 January 2018;[230]
- The introduction of a presentation of the Acute Pain Service during orientation at SAHLN to all medical interns along with education to nursing staff regarding pain management through a variety of forums;[231]

[226] Exhibit C7 at page 4
[227] Exhibit C15
[228] Exhibit C15 at 4 - The recommendations are next to the affidavit - see 'DJT1'
[229] Exhibit C15 at page 6
[230] Exhibit C15 at pages 7-9
[231] Exhibit C15 at page 10

- The introduction of Pain Resource Nurses at the FMC in 2017;[232]
- The development of a draft Acute Pain Management Chart for Adults (APM Chart) which will sit alongside the RaDAR chart. It is noted that this chart requires patients on immediate release opioids to undergo observations for their sedation score, respiratory rate, pain score and functional activity score whenever an immediate release opioid is administered. *Importantly, this is to be repeated one hour later and at any other time a pain assessment is performed, and any time a complete set of observations is completed on the RaDAR chart or four-hourly (whichever is more frequent);*[233]
- Medical officers have been provided with a quick reference guide which is attached to individual identification lanyards. It provides information on dosing, monitoring and management of respiratory depression. The Acute Pain Service number is also provided. *The discharge prescription for oxycodone precludes the use of OxyContin (ie slow-release oxycodone).* Pain and sedation scores and respiratory rate are to be monitored according to the SALHN guidelines;[234]
- Further education initiatives have been implemented and include education about correct graphing and documentation of observations on the RaDAR chart, an extensive update of online resources and a pain management resource page. Some of the initiatives have focused on the staff of the stroke and neurology unit;[235]
- In 2016 the Trainee Medical Officer (TMO) Unit integrated case scenarios into the hospital orientation program for trainee doctors and medical interns with the aim of providing further education on recognising clinical deterioration, RaDAR chart interpretation, treatment and appropriate escalation measures;[236]
- In December 2017 an audit report was competed to measure recognition and response by SALHN medical and nursing staff to clinical deterioration as indicated by the Australia Commission on Safety and Quality in Health Care.[237]

19.5. It is commendable that such efforts have been made. However, it is noted that, notwithstanding the implementation of some of these initiatives, the 2017 audit report identified that 10% of the audited patients were identified *as having a failed escalation*

[232] Exhibit C15 at page 11
[233] Exhibit C15 at pages 14-15
[234] Exhibit C15 at 'DJT6'
[235] Exhibit C15 at pages 22-29
[236] Exhibit C15 at page 30; See also 31 for other education session for nursing and medical staff
[237] Exhibit C15 at 'DJT 11'

of care. Significantly, the most common action missing was the documented RN or Shift Coordinator Review of the patient following the abnormal observation, an action that was also missing in Mr Atkins' case.

19.6. It is further noted that *increasing the frequency of observations as a response to an abnormal finding was only observed in 45% of the patients who met the criteria for escalation of care*.[238]

19.7. At the end of the day the success of any set of protocols is entirely dependent on the diligence and competency of those who are required to apply them.

20. Summary and conclusion

20.1. Stephen Robert Atkins spent three nights over one weekend at the Flinders Medical Centre. Initial tests concluded that his condition was not life-threatening. Yet three days later he had died in a public hospital where, in the circumstances, any reasonable person would have expected him to have been safe.

20.2. I do not intend to repeat the detailed factual findings that I have set out above. Those findings speak for themselves.

20.3. The evidence has established that a combination of circumstances, errors and omissions contributed to the death of Mr Atkins. These include:

- The infrequency of monitoring (ie four-hourly).
- The combined use of opioids in circumstances where the monitoring of the patient was undertaken by nursing staff who did not have the requisite knowledge and experience to be monitoring a patient who was receiving such high levels of opioids.
- The absence of any clear oral and/or written directions to nursing staff from medical professionals at the time of the initial prescription as to minimum timings between opioid doses and the frequency of observations. This led to some doses of opioids being given too close together.
- The failure of any medical professional or member of the nursing staff to recognise the need for a referral to a pain specialist, particularly when it had become clearly

[238] Exhibit C15 at 'DJT 11'

apparent that repeated doses of opioids were having little benefit in terms of pain relief.

20.4. I further find that:

1) The opioid medications that were prescribed for the deceased would, if taken alone, not necessarily have posed a risk. However, once they were combined, the potential for additive risk was quite high. The addition of the slow release form of oxycodone, OxyContin, added complexity to the situation. It would have been difficult for medical and/nursing staff to predict concentrations and peak effect times as one drug was administered subcutaneously and the others orally.

2) After his transfer from the ED to Ward 6C, Mr Atkins should have remained on two-hourly monitoring.

3) Best practice would have been for Mr Atkins to be monitored by a continuous monitoring machine which triggers an alarm when vital signs drop to unacceptable parameters. Alternatively, if no continuous monitoring equipment was available, Mr Atkins should have been checked more frequently and, after the desaturation events, on an hourly basis.

4) Several omissions by nursing staff to correctly graph and document observations of vital signs on the RaDAR observation chart removed essential diagnostic information from medical and nursing staff.

5) The absence of such information and, in particular, the omissions to record significant drops in oxygen saturations, removed information from which medical and nursing staff may have identified the signs of a deteriorating patient.

6) There can be no excuse for nurses not to accurately record observations of all vital signs on the RaDAR observation chart. It is a basic task. It requires only diligence and accuracy.

7) The evidence disclosed multiple occasions on which nursing staff failed to escalate care in accordance with the established hospital escalation pathway protocols. These failures removed real opportunities for interventions, any one of which could have potentially have changed the ultimate outcome for Mr Atkins and his family.

8) There can be no excuse for failures to apply escalation pathways when the criteria which are designed to trigger the pathway and to protect the patient are present.

9) If there is a culture in place at the FMC that discourages nurses from applying the protocols, that is a matter that requires urgent investigation. It was beyond the scope of this Inquest to examine such matters. If such an investigation results in having resource implications, so be it. Patient safety must be the primary consideration. The public of South Australia expect and deserve no less.

10) On Sunday 22 March 2015 Mrs Atkins tried valiantly to communicate her concerns to a medical doctor and also to several members of the nursing staff. None of her efforts led to a medical review.

11) The nursing staff to whom Mrs Atkins turned to for assistance did not recognise the clinical significance of the information she was imparting. The observations that had been made by family members on Sunday 22 March 2015, and which were reported to unidentified members of the nursing staff, were indicative of the adverse effects that are characteristic of opioid drugs, namely difficulty breathing, pronounced sedation and vomiting.

12) Based on the expert evidence I am satisfied that on Sunday 22 March 2015 the deceased showed levels of drowsiness and sedation that were inconsistent with a zero sedation score. I am satisfied that a competent sedation assessment would have resulted in no further opioid medications being given without a medical review, regardless of the pain score.

13) In my opinion, the most critical failures occurred at 4:30am on Sunday 22 March 2015, 9am on Sunday 22 March 2015 and at 1am on Monday 23 March 2015.

14) The peak concentrations of fentanyl on Sunday 22 March 2015 most likely occurred at around 8:50am and 3:25am. The oxycodone that was given at 2:45am on that day would have likely peaked at around 3:45am.

15) The whole situation was compounded by:

    a. A lack of detailed knowledge and training amongst some of the medical and nursing professionals regarding the inherent dangers of opioid medications.

    b. An inability on the part of the nursing staff to recognise the need to investigate clinical signs of deterioration in the patient.

    c. The fact that the decision-making of nursing staff was guided primarily by the reported pain scores and whether the PRN prescription permitted the

administration of more opioids. There was little or no evidence of clinical decision making or a cautious approach being taken to the patient's management.

d. The fact that sedation scores were taken only at the time the four-hourly observations and there was no policy in place to check vital signs at the time of administration of opioid medication.

e. The absence of any protocol that required checks of sedation after administration of the opioid (eg one hour after administration) in order to assess the effects of the medication.

20.5. In relation to the training of nursing staff, the FMC and any nursing body which is responsible for maintaining nursing standards and training should carefully review these findings and, if necessary, implement changes to their curriculums.

20.6. At the end of the day the medical and nursing staff of public hospitals are the people in whom the South Australian public place their trust. Nursing staff play a particularly important role because they are the eyes and ears of the ward. The nurses are the ones who see and speak with patients throughout the day and night. With the appropriate level of knowledge, training and experience they are well placed to make observations that can save a life. The importance of their role and skills cannot be overstated, but they must be supported and appropriately trained to competently discharge that role. In the context of Mr Atkins' death, the observation that was made by Professor Jason White regarding the need for caution in the context of the administration of opioids is apposite and worthy of repetition:

> '...Anytime an opioid is administered and is administered in a significant concentration it should be regarded as potentially life-threatening. Opioids are dangerous drugs, they have the potential to cause death...'[239]

20.7. In my view it would do no harm to place notices of this quote in areas of public hospitals which are regularly frequented by medical and nursing staff.

20.8. Finally, I wish to express my condolences to the Atkins family.

[239] Transcript, pages 485 and 504

21. Recommendations

21.1. Pursuant to section 25(2) of the Coroner's Act 2003 I am empowered to make recommendations that in the opinion of the Court might prevent, or reduce the likelihood of, a recurrence of an event similar to the event that was the subject of the Inquest.

21.2. I make the following recommendations directed to the Minister for Health:

1) That the initiatives that have been commenced and developed by the South Australian Local Health Network be urgently implemented in their entirety.

2) That the practice of on-call specialist consultants being rostered to cover dual specialities be ceased.

3) A committee or body be established to review the process of information sharing amongst medical and nursing staff with a focus on the handover process, and the use of progress notes as a primary information source.

4) That the proposed changes to the education and training of medical and nursing staff about the dangers of opioid medications be repeated at regular intervals by the implementation of mandatory refresher courses.

Key Words: Hospital Treatment; Opioid Toxicity; Nursing Care

In witness whereof the said Coroner has hereunto set and subscribed her hand and Seal the 10th day of October, 2018.

Deputy State Coroner