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 2nd, 22nd, 23rd, 26th, 27th, 28th, 29th and 30th days of November 2012, the 17th day of December 2012, the 27th, 28th and 31st days of May 2013, the 5th, 6th, 7th, 8th, 25th, 26th and 27th days of November 2013 and the 14th day of February 2014, by the Coroner's Court of the said State, constituted of Elizabeth Ann Sheppard, *a Coroner for the said State, into the deaths of John William Ryan and Patricia Dawn Walton.*

The said Court finds that John William Ryan aged 54 years, late of 10 Grandview Court, Crafers, South Australia died at the Royal Adelaide Hospital, North Terrace, Adelaide, South Australia on the 2nd day of April 2008 as a result of hypoxic-ischaemic encephalopathy following ventilatory failure and cardiac arrest in the context of morbid obesity and opiate medication, complicating post-operative recovery from right ankle arthrodesis.

The said Court finds that Patricia Dawn Walton aged 66 years, late of 20 Naretha Street, Holden Hill, South Australia died at the Royal Adelaide Hospital, North Terrace, Adelaide, South Australia on the 2nd day of November 2010 as a result of hypoxic-ischaemic encephalopathy following cardiac arrest after developing cardiac syndrome precipitated by myocardial ischaemia as a consequence of uncontrolled hypertension, fluid overload, ongoing pain and coronary artery disease, post left total hip replacement.

The said Court finds that the circumstances of their deaths were as follows.

1. Introduction

1.1. This Inquest concerns the deaths of John William Ryan and Patricia Dawn Walton, separated by two years, but in circumstances which give rise to similar issues about admission practices of small private hospitals for higher risk surgical patients. Both deceased were morbidly obese and underwent orthopaedic procedures at Sportsmed Hospital SA (Sportsmed). Sportsmed is a small private hospital which does not have medical practitioners within the hospital overnight. Mr Ryan deteriorated during the first night following surgery, whilst Mrs Walton collapsed during the night after her fifth post operative day.

1.2. Whilst there are significant differences between the circumstances leading to their deaths, both Mr Ryan and Mrs Walton posed predictable and continuing risks during the post operative phase which required a higher level of care than was provided at Sportsmed. In addition to the known risks, Mrs Walton had severe coronary vessel disease which had not been detected in routine preoperative assessments.

1.3. Both patients received opioid analgesia which is said to have played a role in their deterioration. The degree of obesity in both cases complicated their post operative management, as well as the attempted resuscitation, following their collapse. Despite the increasing prevalence of obesity in the community, the link between opioid medication and respiratory depression in this type of post operative patient is said to be poorly understood by nursing staff and some medical practitioners. This latter point is particularly relevant to the death of Mr Ryan.

1.4. The evidence received in this Inquest leads to a compelling conclusion that Mr Ryan's death could have been avoided if more frequent and adequate monitoring had taken place during the night following his surgery. I find that Mr Ryan suffered acute respiratory failure, secondary to a combination of the opiate medication received post operatively, in the context of his morbid obesity. Had his deterioration been detected in a timely manner, the anaesthetist could have been contacted to formulate a plan which may have involved intravenous (IV) administration of naloxone to reverse the effects of the opioid medication.

1.5. Additionally, there is a question as to whether Mr Ryan suffered from undiagnosed sleep apnoea and how this might have contributed to his respiratory failure. This

question remains unresolved, but has application more generally to preoperative assessment of morbidly obese patients.

1.6. Mrs Walton had suffered severe hip pain for some years and had become opioid tolerant. Pain management was always going to be a challenge following her surgery. She also had hypertension as well as sleep apnoea, which required a continuous pressure device overnight (CPAP).

1.7. Throughout the post operative period Mrs Walton's pain and high blood pressure proved difficult to manage. When early signs of cardiac ischaemia emerged during an overnight shift, it was attributed to asthma because the deceased had suffered asthma in the past. There was no medical officer on site to confirm the diagnosis or to investigate the matter.

1.8. The evidence supports a conclusion that, notwithstanding the unknown cardiac disease, Mrs Walton's known medical challenges were such that she should have had her surgery in a hospital which had the medical and nursing resources to handle her complex pain requirements and labile hypertension. I find that this important issue was not appropriately addressed pre-operatively. What was required to maximise her safety throughout her hospitalisation for hip surgery was a facility with Intensive Care Unit (ICU) backup and medical emergency team capability, for early intervention in the event of deterioration. I find that had she been managed in this environment, her death may have been prevented.

1.9. Despite the predictable anaesthetic challenges which both Mr Ryan and Mrs Walton posed, neither had the benefit of a pre-anaesthetic consult. In Mr Ryan's case, the surgeon did not think of arranging it. In Mrs Walton's case, it was overlooked because of a system failure in the surgeon's rooms. As a consequence, the respective anaesthetists had to deal with the situation under pressure, moments before surgery. Despite the challenges posed, the surgery for Mr Ryan and Mrs Walton was completed without incident, however, during the post operative phase, both patients deteriorated during the night when there were no medical officers on site. Both patients were evacuated to the Royal Adelaide Hospital (RAH) by ambulance but passed away in the ICU once testing confirmed that irreversible hypoxic cerebral damage had occurred.

1.10. The major focus of the Inquest has been on how patients with significant medical co morbidities, including morbid obesity, are screened pre-operatively. Whilst the degree of screening required will depend in part on the type of surgery contemplated, the evidence indicates that an informed decision should be made in a timely manner about whether the procedure ought to take place in a hospital which offers a higher level of nursing and medical care than that available in smaller private hospitals such as Sportsmed. Medical practitioners who have a financial interest in a preferred facility are obliged to disclose that fact and prioritise patient safety.

1.11. The Court was assisted by evidence from a number of medical practitioners to consider how Mr Ryan and Mrs Walton might have been better managed, with the benefit of hindsight. Opinions from independent anaesthetists and intensivists during the Inquest were generally critical of the systems and facilities available at Sportsmed to cope with the predictable challenges posed by both deceased post operatively. The evidence supports a finding that in both cases there was a failure to detect or recognise early signs of deterioration. By the time nursing staff at Sportsmed reacted in both cases, the situation had become catastrophic. Without the support of highly trained emergency team staff, both patients were unable to be effectively ventilated at Sportsmed and valuable time was lost before the ambulance was called.

1.12. Questions surrounding the competency and resourcing of nursing staff at Sportsmed have been examined during the Inquest, together with the protocols which were in place at the time for monitoring patients following surgery and particularly for patients who have received opioid medication post operatively.

INQUEST INTO THE DEATH OF MR JOHN WILLIAM RYAN

2. Outline of the sequence of events

2.1. Mr Ryan had ankle surgery at Sportsmed on the afternoon of 28 March 2008. At 6am the following morning a nurse found him unconscious. During the retrieval process by ambulance officers at the hospital, he suffered a cardiac arrest. Mr Ryan's obesity presented challenges which prolonged the resuscitation process. He died at the RAH on 2 April 2008. The cause of death was said to be hypoxic-ischaemic encephalopathy due to cardiac arrest complicating post operative recovery from right ankle arthrodesis.

2.2. John Ryan was 54 years old. He was admitted to Sportsmed for a relatively minor orthopaedic operation on his right ankle, to be performed by Dr Roger Patterson. This was the second procedure performed on Mr Ryan's ankle at Sportsmed by Dr Patterson. A right calcaneo-cuboid fusion had been performed in December 2007 but it failed to heal adequately and so a decision was taken to perform a bone graft. Apart from noting some nausea post operatively, the first admission was regarded as unremarkable. At the time of the first surgery, Mr Ryan's weight was recorded as 125 kilograms.

2.3. When he was re-admitted to Sportsmed three months later Mr Ryan's weight had increased to 141 kilograms. At 141 kilograms he was morbidly obese with a Body Mass Index (BMI) of 41. The increase in weight was not detected when the decision to re-operate was taken.

2.4. On the day of surgery, a last minute change of plan meant that Dr South became Mr Ryan's anaesthetist. No pre-anaesthetic consult had been arranged in advance of surgery and so Dr South met Mr Ryan for the first time shortly before surgery was due to commence, which was far from ideal.

2.5. A general anaesthetic was administered, using a laryngeal mask, consistent with the process successfully used during the previous surgery. The anaesthetic was administered without complication, notwithstanding the challenges posed by Mr Ryan's physical characteristics, particularly his 'bull neck'. During surgery Dr South raised concerns that Mr Ryan would need to be monitored closely by nurses after surgery because of the risk that if he deteriorated, he would be difficult to intubate. The extent to which this concern was raised with staff and how it was handled was explored in some detail during the Inquest.

2.6. Sportsmed has a non accredited High Dependency Unit (HDU) as part of the hospital, however it was not available in its normal location at the time of Mr Ryan's admission, due to renovations elsewhere in the hospital. Mr Ryan was taken to recovery for the initial post operative phase and then to a private room in a ward at 4pm. The expectation was that Mr Ryan would be discharged the following day.

2.7. During the procedure, an IV line was inserted and remained in place post operatively for the delivery of patient controlled analgesia (PCA). Dr South ordered morphine to

be administered via this device and instructions were documented as to the dose, emergency orders and Dr South's contact details in the event of deterioration.

2.8. Dr South also prescribed morphine to be administered intramuscularly or subcutaneously in the event that the PCA was not operating. The evidence is ambiguous concerning the intended start date and commencement time of this medication because of the way in which it was recorded. After giving instructions to nursing staff concerning Mr Ryan, Dr South had no further input into Mr Ryan's management.

2.9. The records indicate that 'special observations' were documented between 4:15pm and 9:15pm, initially half hourly, then hourly from 5:15pm. These observations included 'sedation' and 'pain' scores which were unremarkable[1].

2.10. At 10pm Mr Ryan's oxygen saturations (O2 sats) were observed to have fallen to 87%, however this observation was not recognised as significant and was not documented or reported to a more senior nurse. Mr Ryan's blood pressure, pulse and respiration rate was noted in his medical notes at 10pm, however his pain and sedation scores were not noted. From here Mr Ryan's observations reduced to four hourly.

2.11. At about 10:15pm, nursing staff noted that the IV line had failed and a decision was taken by nurses to remove it. At 11:40pm, 10mg morphine was administered, either intramuscularly or subcutaneously by nursing staff. At 2am Mr Ryan was checked by an enrolled nurse. He is said to have requested pain relief which resulted in a decision by nurses to administer 2 capadex tablets. This medication was not prescribed by Dr South or any other medical practitioner.

2.12. Between 2am and 6am the only observation of Mr Ryan was said to have been made by a nurse using a torch observing Mr Ryan, apparently asleep in a darkened room. Another nurse recalled hearing Mr Ryan snoring from outside the room at some stage during the night. The night duty nurses were very busy. The nurse in charge was especially busy supervising other nurses as well as caring for her own allocation of patients.

[1] Exhibit C7b, page 32

2.13. At 6am, Mr Ryan was found in an unrousable state and his vital signs had deteriorated dramatically. Increased oxygen was administered. The nurse in charge was not available immediately to assist, but after some 10 minutes attended and used suction equipment to remove secretions from Mr Ryan's airway.

2.14. In accordance with Sportsmed protocols, a decision was taken to call an ambulance to transfer Mr Ryan to the RAH. Ambulance attendance was prompt, however Mr Ryan's obesity made all aspects of his management during this phase more challenging than it would otherwise have been.

2.15. Mr Ryan suffered a cardiac arrest before retrieval to the RAH and he remained in asystole en route. Mr Ryan was intubated at the RAH and stabilised, however after further examination, it was clear that Mr Ryan had suffered severe cerebral hypoxia and irreversible brain damage. He died on 2 April 2008.

3. Dr John Gilbert - Pathologist

3.1. According to Dr Gilbert, who conducted the post mortem examination on the deceased, the cause of Mr Ryan's death was hypoxic-ischaemic encephalopathy due to cardiac arrest complicating post operative recovery from right ankle arthrodesis. I accept this explanation as the cause of Mr Ryan's death. Dr Gilbert postulated that given the history available from the medical notes, Mr Ryan's death may have been complicated by opiate analgesia and complications of morbid obesity.

3.2. Mr Ryan's weight recorded at post mortem was 152 kilograms which was 11 kilograms greater than Mr Ryan's weight recorded by the nurse immediately before surgery commenced[2]. The BMI was said to be 43, based on the higher reading.

3.3. When asked to speculate about the reasons for the disparity in measurement, Dr Gilbert suggested that the scales at Sportsmed might not have been accurate if they were not regularly tested for accuracy and repeatability, particularly at high body weights, which is what occurs in the Forensic Science Centre. Another reason suggested was the administration of significant amounts of intravenous fluid following his admission to the RAH[3].

[2] Exhibit C7b, page 25
[3] Exhibit C2d

3.4. Ultimately, this discrepancy remained unresolved, but raises the importance of ensuring that scales used to estimate preoperative weight are tested for accuracy on a regular basis[4].

3.5. At post mortem examination there was no evidence of cardiac disease or previous myocardial infarction.

4. Toxicology

4.1. A small sample of preserved blood from the deceased was tested, but the results are of limited value in understanding the cause and circumstances of Mr Ryan's death[5].

5. Evidence of Dr Patterson

5.1. Dr Patterson is one of several orthopaedic surgeons operating principally at Sportsmed. At the time of Mr Ryan's surgery in 2008 Dr Patterson was a Director, unit holder and shareholder of Sportsmed. He had been seeing Mr Ryan since August 2007 for degenerative arthritis in the right ankle. His surgery in October 2007 at Sportsmed to fuse the joint proceeded without incident. Mr Ryan was discharged and instructed to avoid weight bearing on the ankle for six weeks. Unfortunately, the bone failed to heal[6].

5.2. Dr Patterson, who is a very experienced orthopaedic surgeon with an impressive CV, saw Mr Ryan in his rooms again at Sportsmed in March 2008 where the decision was taken to re-operate later that month. Whilst it was plain to Dr Patterson that Mr Ryan was an obese patient, he failed to appreciate that Mr Ryan's weight had increased significantly since his discharge in October 2007. The preoperative assessment overlooked this detail, partly because Dr Patterson had no way of measuring patients in his rooms at the time, and partly because Mr Ryan incorrectly noted his weight as 122 kilograms in the pre admission documentation. The Court was informed that Dr Patterson has since acquired a set of scales to weigh patients in future.

5.3. According to Dr Patterson, had he been aware of the increase in Mr Ryan's weight, he would have organized for a preoperative referral to an anaesthetist or physician to assess risk, bearing in mind that the existing cut-off criteria for admission to the

[4] Dr Thomas at Transcript, page 1575 also pointed to administration of IV fluid, as a credible explanation of the increased weight
[5] Exhibit C3b and Transcript, pages 1429 and 1430
[6] Exhibits C11 and C11a

hospital was 150 kilograms or a BMI of 40. Following Mr Ryan's death Dr Patterson indicated that he was surprised to learn of Mr Ryan's demise and speculated that it may have been caused in part by undiagnosed sleep apnoea. Had Mr Ryan been identified as a patient at risk, Dr Patterson stated that he would have arranged for Mr Ryan to be placed in the hospital's HDU with hourly observations by nurses. I find that regardless of the increased weight it would have been prudent to arrange a pre-anaesthetic consult before any surgery was contemplated for Mr Ryan.

5.4. Dr Patterson was asked to comment upon the opinions expressed by Dr William Parkin about some features of Mr Ryan's pre and post operative management at Sportsmed, including the potential risks of respiratory depression in obese patients post operatively when receiving opioid analgesia. Dr Patterson acknowledged that he was previously unaware of the dangers of elevated carbon dioxide levels in obese patients during the post operative period and the effect which opioids played in respiratory depression. Dr Patterson stated that following Mr Ryan's death he was more clinically concerned 'about patients with morbid obesity and the risks involved in maintaining airways overnight'[7].

5.5. Notwithstanding this concession, Dr Patterson seemed to reveal limited insight into some of the shortcomings in Mr Ryan's pre and post operative management. He did not realise that the HDU at Sportsmed (even if it had been available), was not an accredited HDU and that it functioned at a lower level than those which were accredited in other hospitals[8]. Dr Patterson stated that whilst he now has scales in his surgery to weigh patients, only new patients are weighed and that Mr Ryan would not be regarded as a new patient when having his follow up surgery. Obviously this is a concern. Obesity is said to be a risk factor in itself. If obese patients are instructed to avoid weight bearing for extended periods, it will be difficult for them to exercise. If follow up surgery is required, it would not be uncommon for some patients to have gained weight in the interim. I find that surgeons should routinely weigh obese patients before planning surgery by using scales which are regularly calibrated to ensure accuracy.

5.6. Dr Patterson was asked about concerns raised by the anaesthetist on the day of Mr Ryan's surgery about the fact that the HDU at Sportsmed was unavailable. Dr

[7] Transcript, page 39
[8] Transcript, page 114

Patterson struggled to recall details on this and related topics, but did not deny that there may have been discussions about those matters, including remarks by the anaesthetist that Mr Ryan would need to be watched very carefully post operatively[9]. Dr Patterson explained that he relied upon anaesthetists to advise him if surgery was too risky to be performed at Sportsmed. He stated that if he was advised that it was too risky to perform the surgery there, the operation would have been cancelled. In this regard Dr Patterson did not seem to recognise the obvious disadvantages in having this discussion moments before an operation is due to commence.

5.7. Dr Patterson acknowledged that in hindsight, when admitting patients to Sportsmed, he needs to select his patients carefully to ensure that they can be managed safely. He conceded that if advised by the anaesthetist, he would have been open to the idea of arranging the surgery in a hospital with ICU backup facilities in the event of an emergency requiring medical intervention overnight.

5.8. When Mr Ryan's surgery was planned at Sportsmed in 2007 and 2008 it appears that he may not have been informed that Dr Patterson had a financial interest in having the surgery at Sportsmed. Dr Patterson was obliged to make this disclosure in writing in accordance with section 71 of the Medical Practice Act 2004. The consent form signed by Mr Ryan contains no reference to this topic[10].

5.9. There is no evidence which indicates whether Mr Ryan was informed that in the event of an emergency overnight, there would be no medical practitioners at the hospital and that he may need to be evacuated to another hospital by ambulance. I find that there should have been a discussion of this nature which would be relevant to Mr Ryan giving his informed consent.

5.10. Having considered evidence from the current Director of Nursing at Sportsmed, Suzanne Murray, it appears that even the pre admission coordinator is not required to have this discussion with patients prior to their admission. According to Ms Murray, the current practice is for the medical practitioners to reveal this information to the patient if they choose to[11]. By the time Mrs Walton was admitted to Sportsmed two years later, the Sportsmed consent form had been altered to include a disclosure of

[9] Transcript, page 41
[10] Exhibit C7b, pages 3 and 52
[11] Transcript, page 1150

financial interest in general terms, but in very fine print[12]. This topic is explored in more detail when considering the evidence of Dr Bauze in relation to Mrs Walton.

6. Evidence of Dr John South

6.1. Dr South is an experienced anaesthetist who outlined the circumstances in which he came to anaesthetise Mr Ryan at Sportsmed in a detailed affidavit, prepared in April 2012[13].

6.2. According to that document Dr South has been providing anaesthetic services for Dr Patterson's patients at Sportsmed for over 20 years. The following matters were canvassed in the affidavit.

6.3. Unless Dr Patterson decided to refer a patient to him in advance of surgery for assessment, he would not normally see the patients on the surgical list until the day of surgery, shortly before surgery was due to commence.

6.4. Dr South first met Mr Ryan shortly before he was scheduled for his operation, but after Mr Ryan had been prepared for his operation. After reading the hospital medical notes for Mr Ryan, Dr South assessed the anaesthetic risk as ASA III, because of his obesity and hypertension. Dr South noted that Mr Ryan had undergone a general anaesthetic, using a proseal laryngeal mask, by another anaesthetist in December 2007, also at Sportsmed, without any apparent problem.

6.5. However, Dr South considered that Mr Ryan's obesity, short neck and reflux gave rise to a potential problem with the anaesthetic relating to ventilation and intubation.

6.6. Dr South decided to proceed with a general anaesthetic using a laryngeal mask, rather than to risk administering a spinal anaesthetic, which might have been a problem given his large size.

6.7. There can be no criticism of the manner in which Dr South administered the anaesthetic to Mr Ryan and therefore I do not dwell upon that, although I note that the technique employed involved accommodation of Mr Ryan's particular risks due to his obesity and potential for reflux.

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[12] Exhibit C10a, page 16
[13] Exhibit C15

6.8. According to Dr South he discussed with Dr Patterson during the procedure that Mr Ryan would need monitoring closely following his surgery, because he considered that his obesity gave rise to a number of potential difficulties with his management. Dr South indicated that he understood that the hospital's HDU was not available, but that patients who needed monitoring would be placed in one of three beds on the first floor near the nurses' station, and that there would be adequate nursing care for the acute post operative patients.

6.9. Once surgery was complete Mr Ryan was transferred to the recovery ward and whilst there Dr South maintains that he informed one of the nurses that if there was a problem in which Mr Ryan needed to be intubated, that it would be very difficult because he had what Dr South described as a 'bull neck'. He had made a note about this feature of Mr Ryan's neck in the medical notes and added asterisks to emphasise this when he handed his patient over to the recovery nurse[14].

6.10. Dr South explained his written order for a PCA which was used post operatively after the previous surgery. The intention was that small doses of morphine would be administered at intervals intravenously and would continue until the following morning and that he would have hourly nursing observations.

6.11. Dr South also ordered 10-15mg morphine which could be given two hourly by intramuscular (IM) or subcutaneous (SC) route. He stated that it was his intention that this order would commence the following day, however the commencement date entered in the notes was not decipherable by the time they were photocopied for these proceedings. Next to the order, Dr South also noted the words 'if no PCA'[15]. It appears that this order for morphine proved open to misinterpretation. I note that Dr South did write his telephone and pager contact details on the PCA chart. It is particularly significant that emergency orders were specified in the event that Mr Ryan's respiratory rate dropped to 8 per minute or below and his sedation score was 3. The order was to administer O2 via a mask at eight litres and to administer naloxone via the IV line and to contact him.

6.12. I find that Dr South was not contacted by any member of Sportsmed staff concerning Mr Ryan after he left the hospital that evening at approximately 5:30pm.

[14] Exhibit C7b, page 25
[15] Exhibit C7b, page 39

6.13. By reference to the hospital notes detailing features of Mr Ryan's admission for the first operation at Sportsmed, it is clear that the anaesthetist on that occasion made the same ASA assessment as Dr South and that he also prescribed PCA morphine which remained in situ until 5:15am, which meant that nurses recorded his observations on a semi regular basis. A total of 34mg of morphine was administered in all via the PCA. There was no supplementary order for IM morphine, however oral oxycodone was ordered, but not while he was receiving PCA[16]. Nurses administered that medication within 10 minutes of cessation of the PCA at 5:20am.

6.14. During the course of his evidence Dr South acknowledged that when assessing Mr Ryan for the first time at the door of surgery, he felt under extreme pressure because of the various medical issues which needed to be considered before proceeding[17]. He stated that it was only because he read that the first anaesthetic had proceeded without incident that he agreed to anaesthetise Mr Ryan on the second occasion[18].

6.15. According to Dr South, there have since been improvements to the system used at Sportsmed which result in a more timely assessment of these types of higher risk patients well in advance of surgery, giving opportunity to change the designated hospital for surgery[19]. Dr South explained that in these preoperative consults, where he is dealing with high risk obese patients with potential for severe airway problems, he discusses the issue with the patient and explains that there is no ICU or medical backup overnight and that an ambulance service is utilised at Sportsmed[20].

6.16. According to Dr South, before Mr Ryan's surgery he had expressed his concern to the director of nursing at Sportsmed that it was 'bad policy' to close the HDU while renovations were carried out elsewhere, and for that reason he said that he could clearly recall reiterating his concerns to Dr Patterson during Mr Ryan's surgery[21].

6.17. Dr South said that he realised that the HDU at Sportsmed was not an accredited unit, but that it was more like a 'step up facility'. He emphasised on a number of occasions that he was given the clear impression by talking to Dr Patterson, and also the director of nursing, that Mr Ryan would receive HDU nursing care in one of the rooms allocated for that purpose in a ward upstairs near the nurses' station while the regular

[16] Exhibit C7b, page 83
[17] Transcript, page 231
[18] Transcript, page 197
[19] Transcript, page 237
[20] Transcript, page 244
[21] Transcript, page 226

HDU facility was out of action. Dr South said that he emphasised that Mr Ryan would need a high degree of care and would be difficult to intubate if that became necessary[22].

6.18. In cross-examination, Dr South rejected the suggestion that he might be exaggerating his concerns after the event and that at the time of surgery, he knew that Mr Ryan was not going to receive high dependency nursing care post operatively. I accept Dr South's evidence that he was genuinely concerned about Mr Ryan's welfare, conveyed those concerns to staff, and remained near Mr Ryan's bedside in the recovery ward for some 35 minutes to monitor him.

6.19. I note that Mr Ryan was assigned to room 28 following surgery according to an entry by the nurse preparing Mr Ryan for surgery[23]. This entry was made on the same page as the entries made by Dr South in his preoperative assessment, although I doubt whether Dr South would have noticed the entry. Room 28 was located on the first floor and was the third room along the passage from the nurses' station[24]. Even if this was regarded as a room near the nurses' station, which is doubtful, I find that it did not deliver a higher level of observation of Mr Ryan during the night.

6.20. I find that it would be unreasonable to expect an anaesthetist in Dr South's position to be familiar with what level of care would be available in various rooms of the hospital, or where these rooms were in relation to the nurses' station. If an anaesthetist has requested that a patient requires a high level of care post operatively, then that request should be facilitated.

6.21. Dr South explained that he has noticed a significant increase in the numbers of obese patients presenting for surgery with a BMI of over 35. Since Mr Ryan's demise, Dr South remarked that he has less confidence in the expertise of the nurses caring for patients post operatively at Sportsmed. The enrolled nurses in particular are said to need careful supervision. When it was suggested by counsel that before Mr Ryan's deterioration he had appeared alert and had consumed a large meal during the evening, Dr South emphasised that this did not mean that he did not warrant close monitoring overnight[25]. He suggested that whilst the total amount of morphine given to Mr Ryan was not in itself excessive, because of Mr Ryan's obesity, it may have

[22] Transcript, page 132
[23] Exhibit C7b, page 25
[24] Exhibit C16
[25] Transcript, page 203

been injected subcutaneously, in which case it might have been absorbed faster than if it was injected into muscle. He added that with Mr Ryan's obesity there was an increased risk of under ventilation and hypercapnia[26].

6.22. When asked about why he made no note about what type of nursing observations he expected for Mr Ryan, Dr South stated that this type of instruction was normally conveyed verbally in recovery during his handover of the patient, which is what he did. He said that he believed that Mr Ryan would be monitored hourly overnight including recording Mr Ryan's 'sedation' score because sedation was the first indicator of respiratory depression[27].

6.23. Dr South maintained that he was unaware in March 2008 that the nurses at Sportsmed exercised discretion without contacting the medical practitioner to switch to other medication orders if the PCA ceased operating. This remark seemed at odds with Dr South's documented order that IM or SC morphine could be given if the PCA was not operating.

6.24. As to his written order for IM or SC morphine, Dr South indicated that it was not his practice to record a commencement time and that his order was expected to commence not before 6am or 8am on the following day, which was 29 March 2010, on the understanding that the IV morphine would continue overnight[28]. He was adamant that if the nurses had notified him when the PCA had failed at about 10:15pm he would have returned to the hospital and reinserted the IV cannula because he did not want Mr Ryan having large doses of narcotics[29].

6.25. Dr South also emphasised that the nurses should have contacted him once Mr Ryan's O2 sats dropped to 87%. He stated that he would have come into the hospital and possibly administered narcan intravenously to counteract the effects of the morphine, if he decided that it was necessary.

6.26. It was clear to me that Mr Ryan's death has affected Dr South deeply. I am confident that he is a very experienced and competent anaesthetist. I find that he performed his anaesthetic with skill and conveyed his concerns verbally to a nurse that Mr Ryan needed very careful monitoring. In hindsight, he accepts implicitly that he

[26] Transcript, page 205
[27] Transcript, pages 132, 138, 197-199, 210
[28] Transcript, page 249
[29] Transcript, page 138

overestimated the quality of nursing care which would be available for Mr Ryan and as a result, he has made changes to the way in which he communicates his expectations concerning level of care. He now explicitly documents his directions concerning the level of care required including noting that the PCA is not to be removed without notifying him. He says that he often introduces two cannulae in anticipation that one might fail.

6.27. I find that these changes to practice are appropriate improvements, which should be adopted by other practitioners who agree to practice in hospitals which have similar staffing profiles to those at Sportsmed[30].

7. Nursing Care of Mr Ryan at Sportsmed

7.1. Not surprisingly, with the passage of time, some of the nurses who were involved in caring for Mr Ryan at Sportsmed in 2008 have little or no memory of doing so and when giving evidence, relied heavily upon their entries in the medical notes. The nurse in the recovery ward said to have received the verbal handover from Dr South has since left the hospital and was not available. A number of nurses who had some responsibility for Mr Ryan's care provided affidavits and gave oral evidence.

7.2. Registered Nurse Fay Thornton, who was working in the recovery ward at the relevant time, had virtually no recollection of Mr Ryan, nor of any instructions which might have been given by Dr South[31].

7.3. Enrolled Nurse Mark Ealing, who worked in the Ward where Mr Ryan was transferred to from the recovery ward, stated that he was not the nurse who 'received' Mr Ryan from the recovery nurse, but did perform two hourly observations on Mr Ryan while his PCA was operating. This witness recalled that Mr Ryan ate a meal of fried chicken that evening after returning to the ward. When asked about the cessation of the PCA at 10:15pm, Mr Ealing remarked that it was not unusual to remove these IV lines when patients are due to be discharged the following day[32].

7.4. Having heard the evidence from nurses in addition to this evidence, I formed the view that it was commonly accepted that PCAs were often unreliable and that backup orders were required in anticipation that a PCA might fail. I find also that there was

[30] Transcript, page 257
[31] Exhibit C33 and Transcript, page 1221
[32] Exhibit C29 and Transcript, page 1046

an understanding amongst nurses that it was desirable to wean patients off PCA to transition them onto other medications in preparation for discharge.

7.5. Registered Nurse Helen Leonard was the hospital nursing coordinator during the same afternoon shift worked by Mark Ealing, but the only contact she had with Mr Ryan was purportedly to inquire with him at about 9pm whether he would be requiring crutches.

7.6. This witness explained that if a HDU bed had been requested for Mr Ryan it would have been mentioned to her and that she would have needed to arrange additional staff. She acknowledged that when Mr Ryan was admitted, the HDU was unavailable.

7.7. Evidence of Enrolled Nurse Di Rhode

Ms Rhode was the nurse allocated to care for Mr Ryan overnight. I do not dwell upon the difference in training between enrolled and registered nurses, but accept that as an enrolled nurse, Nurse Rhode had completed much shorter and less comprehensive training than that completed by registered nurses.

7.8. Ms Rhode explained that on that particular evening she was very busy and had responsibility for two patients on the ground floor of the hospital as well as four on the first floor, including Mr Ryan.

7.9. After Mr Ryan had been given a dose of IM morphine at 11:40pm Ms Rhode stated that she turned off the light to allow Mr Ryan to sleep[33].

7.10. This witness explained that she recorded 2am observations of Mr Ryan (which appeared to be unremarkable), but omitted to record that his O2 sats were 87%, which was an abnormal reading. According to this witness she put some nasal specs in place but only recorded the low reading retrospectively following Mr Ryan's deterioration.

7.11. According to Ms Rhode, the low O2 sat reading did not alarm her because she was unaware that it might have been a sign of respiratory depression. She frankly acknowledged that she had no training about the link between morphine and respiratory depression and, for this reason, did not think to report the low reading to anyone.

[33] Transcript, page 273

7.12. She had little recollection of the circumstances in which capadex medication was given to Mr Ryan at 2am, but believed that she took the decision herself without the need to discuss it with anyone. I accept that nurses at Sportsmed understood that they could administer this medication without being ordered by a doctor[34]. Having considered all other evidence in this Inquest, I find that this was a potentially hazardous practice because of the potential for capadex to contribute to respiratory depression in the susceptible patient.

7.13. Ms Rhode explained that she did not check Mr Ryan again until 6am because she was busy with other work. She described the pace of work as 'hectic' and maintained that it was like that 'every night'[35]. She said that Mr Ryan was in an ordinary room on the ward which was not a HDU bed. She conceded that it was not possible to observe him from the nurses' station even if a nurse had been in that location[36].

7.14. Ms Rhode stated that the nurses usually 'looked in on' each patient hourly overnight, but because she was required to divide her time between two floors, Registered Nurse Vicki Page was said to have taken on this task upstairs for her.

7.15. This witness said that at 6am she went into room 28. The light was off and Mr Ryan appeared to be in a deep sleep. He was unresponsive, cold and clammy. His breathing was slow and laboured. Mr Ryan was lying on his side with nasal specs on his face, however Ms Rhode was unable to say whether these were dislodged.

7.16. According to Ms Rhode, when she was unable to rouse Mr Ryan, she sought help from Ms Page and together they tried to sit Mr Ryan up a bit and replaced the nasal specs with an oxygen mask. Further assistance was sought from another enrolled nurse, Ms Maloney. Attempts to alert the most senior nurse on duty, Annette Brown, were unsuccessful initially, because Ms Brown was in a room downstairs performing an ECG on one of the other patients and could not hear the call bell. When Ms Maloney arrived, she took control of the situation and then requested that an ambulance be called. Observations recorded during this period indicate that Mr Ryan's O2 sats increased from 70% to 96%, but that he never regained consciousness.

[34] Exhibit C7b, page 42
[35] Transcript, page 303
[36] Transcript, page 309

7.17. Ms Rhode said that whilst others worked on Mr Ryan she was tasked to photocopy the medical notes in preparation for transfer to the RAH by ambulance.

7.18. It is clear from the medical notes that on this occasion Mr Ryan received 21mg of morphine over 6 hours via the PCA between 2:55pm and 9pm, and then a further 10mg was administered IM or SC at 11:40pm. Whilst there were no recorded nursing observations at 2am, it is accepted that Ms Rhode did observe a drop of Mr Ryan's O2 sats (87%) and recorded this observation later. Additionally, it is clear that the nurses administered two capadex tablets to Mr Ryan at 2:15am for pain relief. In those circumstances, given that the medication was administered in response to a complaint of pain, it seems logical that had Mr Ryan's sedation score been recorded at that time, it would not have raised a concern.

7.19. In hindsight, it seems that the critical observation which was lost on the inexperienced Ms Rhode was the low O2 sats, which in a more astute observer would have suggested a need for more careful monitoring and reporting to more senior staff.

7.20. Evidence of Registered Nurse Vicki Page

This witness explained that her experience in nursing has been mainly working night shift over a period of some 10 years, with 6 of those years being at Sportsmed[37].

7.21. Ms Page worked the overnight shift commencing at 10:15pm on 28 March 2008. She confirmed that it was very busy that night which was quite common. She was one of only four nurses working overnight including the Nursing Coordinator, Annette Brown and enrolled nurses Trish Maloney and Di Rhode. Ms Page stated that she was aware that Mr Ryan's PCA had been removed earlier and that when this happened, typically the doctor is not notified, especially if the patient is due for discharge the following day[38]. She also acknowledged that the two hourly observations recorded while patients are receiving PCA, were no longer required once the PCA has stopped.

7.22. I find that in these circumstances, when nurses are very busy, there would be little incentive to have the PCA re-established if they believed that this medication order was 'optional', rather than the preferred method for delivery of narcotics.

[37] Transcript, page 321
[38] Transcript, page 320

7.23. According to Ms Page she helped Ms Rhode that evening by doing checks on her patients, including Mr Ryan, while Ms Rhode worked on her other patients downstairs.

7.24. When questioned about the decision to administer 10mg of IM/SC morphine to Mr Ryan at 11:40pm, this witness said that she and Ms Rhode made the decision jointly and she believed that it could be given any time after midnight on the morning that it was ordered to commence[39]. In this regard I find that there was a serious misunderstanding between Dr South and the nurses about the intended time when the drug was to commence. This witness conceded that she relied on information conveyed by Ms Rhode about Mr Ryan before administering the morphine.

7.25. Ms Page gave the impression that she regarded Ms Rhode as her equal in terms of training and experience, despite the clear difference in their status. I find that Ms Page did not perform a supervisory role over Ms Rhode's work when one might have expected her to. No doubt the work load may have limited her capacity to function in this way.

7.26. Ms Page stated that she believed that she gave Mr Ryan capadex at 2am after he complained of some slight pain. Notwithstanding this evidence, I find that Ms Rhode administered the medication, consistent with the signature entered in the medical notes[40].

7.27. According to Ms Page, she performed hourly checks of all patients on the first floor which involved sighting each patient with her torch and to listen to their breathing[41]. Ms Page stated that she recalled hearing Mr Ryan's breathing from the door of his room.

7.28. Ms Page referred to events by reference to a retrospective nursing entry in the medical notes made the following morning. According to Ms Page, at about 6am she was called into Mr Ryan's room by Ms Rhode and saw that he was unresponsive, lying on his side with sputum coming from his mouth. Together they tried for some time to rouse Mr Ryan, who failed to respond to painful stimuli. Ms Page said that she replaced the nasal specs with an O2 mask which increased the flow of oxygen from

[39] Transcript, pages 326 and 380
[40] Exhibit C7b, page 42
[41] Transcript, page 394

two or three litres, to ten litres[42]. She said that he responded slightly and seemed agitated[43]. Mr Ryan's observations were recorded at 6:15am, which included a pulse of 58 and blood pressure of $^{96}/_{43}$. Mr Ryan's O2 sats were recorded as 73% and his respirations at between six and eight per minute, accompanied by a gurgling sound.

7.29. Ms Page stated that the help bell was called which caused nurse Trish Maloney to attend and retrieve the emergency trolley.

7.30. Meanwhile, Ms Page stated that it took a while, perhaps a few minutes, to get the nurse coordinator, Annette Brown, from downstairs. Ms Maloney was sent to retrieve Ms Brown while Ms Rhode and Ms Page continued to try to wake Mr Ryan.

7.31. According to Ms Page, when Ms Brown did attend, she immediately removed the bed head and used the suction equipment to remove the secretions from his airway. I find that there was an unacceptable delay between the time Mr Ryan was found unresponsive and the time when Ms Brown cleared the secretions from his airway. One would expect one of the other nurses to be able to do this, given the availability of the equipment in his room.

7.32. Ms Page said that Mr Ryan was sweating and grey. According to the retrospective entry in the medical notes, Mr Ryan's O2 sats increased to 96% at 6:20am and his blood pressure increased to $^{157}/_{53}$, however he remained unconscious[44]. A heart start monitor was applied which revealed that there was no need to use the defibrillator. I have some concern about the accuracy of the recorded observations during this period given their belated recording 24 hours later and the stressful situation for the nurses. Ms Brown is said to have instructed that the ambulance be called and for Ms Maloney to facilitate access to the hospital. Ms Page said that after the paramedics arrived and were transferring him to the stretcher, Mr Ryan's large size made it difficult for them to get the sides up and then he suffered a cardiac arrest.

7.33. An entry in the medical notes reads as follows:

> 'Unresponsive, grey in colour, breathing as if suffering from sleep apnoea, cold and clammy, frothing at the mouth.' [45]

[42] Transcript, page 332
[43] Transcript, page 412
[44] Exhibit C7b, pages 10 and 17
[45] Exhibit C7b, page 16

Ms Page denied making this entry. When questioned about her training, which seemed similar to that of the nurse coordinator, Ms Brown, this witness stated that she would not have been aware of the possibility that Mr Ryan might have suffered undiagnosed sleep apnoea. Nor was she aware of the dangers of elevated CO2 levels in the context of post operative administration of opioids. She said that she had never heard of the expression 'bull neck'.

7.34. Neither Ms Page, nor Ms Rhode, were aware of the potential dangers of respiratory depression post operatively and the need to undertake appropriate observations to detect it. I find that even if they had not been so busy, these nurses were ill equipped to deal with Mr Ryan's impending deterioration because of a lack of knowledge, training and experience and a failure to anticipate what might go wrong.

7.35. It was concerning to discover during evidence that with the benefit of hindsight, Ms Rhode would not be any more alert now about the potential hazards for her patients than she was in 2008. I qualify my remarks to observe that it seems that Ms Rhode genuinely did her best under difficult circumstances. However, I consider that if small private hospitals are going to continue to employ nurses with limited skill and knowledge, then it is incumbent on them to provide adequate staffing levels and much better levels of supervision by skilled senior nurses.

7.36. I acknowledge that Sportsmed has advised that changes have been made in that regard which is welcomed, but which in my view may not adequately address the deficits in quality of care available for higher risk patients.

7.37. Evidence of Registered Nurse Annette Brown

Ms Brown was the nurse coordinator that evening. In that capacity she was the most senior nurse in the hospital, although she conceded in evidence that Ms Page had similar nursing experience to her own. Ms Brown's work at Sportsmed involved mainly night duty from the time she commenced there in 2004.

7.38. In Ms Brown's affidavit[46] she described how she was allocated her own post operative patients on the ground floor. These patients were said to have required extra care, which meant that she had no opportunity of checking on any other patients, including Mr Ryan. At around 5am one of her patients was experiencing atrial fibrillation and

[46] Exhibit C4a

was quite anxious. For this reason Ms Brown said that she performed an ECG in the patient's room, with the door closed over for privacy. According to Ms Brown she had told Ms Rhode where she was going to be while doing this, however she said that it was not until she had completed this procedure and packed up to leave the room, that she realised that the cardiac emergency bell had been ringing for Mr Ryan's room upstairs[47]. She retrieved an emergency trolley and went upstairs.

7.39. I find that the system utilised at Sportsmed to contact the night coordinator in an emergency was deficient. Some type of paging device would easily overcome this problem in future.

7.40. Ms Brown said that she found Mr Ryan sitting up, unrousable with frothy sputum coming from his mouth. She placed the bed down, suctioned the sputum and replaced the face mask with a Guedels airway. She commenced hand ventilation which purportedly improved the O2 sats to 90%. Mr Ryan's colour was said to improve[48]. Meanwhile, Ms Brown enquired of the other nurses about medications which had been administered to Mr Ryan.

7.41. According to Ms Brown, the ambulance was called about ten minutes after she started to work on Mr Ryan. Ms Brown stated that the ambulance officers attempted to intubate Mr Ryan unsuccessfully and that this took between three and four minutes. Having considered the evidence of paramedic Debbie Harrop, I find that Ms Brown is honestly mistaken about this.

7.42. Ms Brown also said that it took six of them to transfer Mr Ryan to the barouche due to his large size. When Mr Ryan went into cardiac arrest on the barouche, she said that she assisted by performing chest compressions. Ms Brown stated that she was distressed about the incident, particularly because of her workload, and was not capable of writing her account in the medical notes until the following evening. She complained that there was inadequate staff' and that they were very busy all night.

7.43. In evidence Ms Brown was asked how she might have responded if she had been notified that Mr Ryan's O2 sats were 87% at 2am on that morning. She replied that it would have been prudent to check him again 15 to 30 minutes later. As to the commencement time of the IM morphine order for Mr Ryan, this witness stated that

[47] Transcript, page 1208
[48] Exhibit C7b, page 12 and Transcript, page 1176

she would read this order as commencing immediately after the PCA had finished, unless ordered not to do that[49]. This witness also acknowledged that when PCA IV lines fail, they are not usually re-inserted if the patient is due to be discharged the following day.

7.44. As a result of this incident, Ms Brown explained that there have been changes at Sportsmed to ensure that enrolled nurses are teamed up with a registered nurse. Night coordinators no longer have their own patients to care for and when patients are given IM morphine, they are required to have observations recorded one hour later.

7.45. Evidence of Enrolled Nurse Patricia Moloney

This nurse provided an affidavit and gave evidence, however she was unable to take the matter any further due to faded recollection of events. She had responsibility for seven patients on the first floor during the evening and recalled that after the ambulance was called she went to meet them and brought them upstairs in the elevator[50].

7.46. Time taken to call the ambulance

I find that the system in place at Sportsmed for calling an ambulance was overly reliant upon the judgment of the nurse coordinator. Ms Brown was unable to attend Mr Ryan promptly, and when she did attend, it should have been obvious that an ambulance was required urgently. Notwithstanding these deficits, the evidence does not enable me to determine whether an earlier call would have altered the outcome.

8. South Australian Ambulance Service attendance upon Mr Ryan

8.1. Evidence of Paramedic - Debbie Harrop

This witness gave evidence about her role in resuscitating Mr Ryan, mainly from the detailed entries in the ambulance record. No statement was taken from her until May 2013, some five years later. I have viewed the record and find that it represents an accurate account of the timing of events, observations and other interventions undertaken during the attendance of the paramedics at Sportsmed[51]. I bear in mind in assessing the reliability of the ambulance record, that the paramedics were assisted by way of their monitoring equipment in informing their written record.

[49] Transcript, page 1216
[50] Exhibit C28a and Transcript, page 1008
[51] Exhibit C34

8.2. According to Ms Harrop she was the paramedic in charge of the resuscitation and transfer of Mr Ryan to the RAH. The call from Sportsmed was received at 6:14am. The ambulance arrived at 6:20am and three minutes later they were shown to Mr Ryan's room.

8.3. According to this witness, two ambulances were dispatched following information of a threatened cardiac arrest. The second ambulance arrived five minutes later. Without the second ambulance and additional paramedics, this witness said that there could have been further delay in transferring Mr Ryan because of his large size[52].

8.4. Ms Harrop said that the paramedics were not informed by any of the nurses at Sportsmed that Mr Ryan had been given morphine during the night, despite inquiring about his medications which were noted in their record[53]. I accept the evidence from Ms Harrop about this which tends to confirm the lack of awareness in the nurses about the link between opioids and respiratory depression.

8.5. When first attending Mr Ryan his condition was said to be very serious. He was cyanosed with pinpoint pupils, sweating and in sinus tachycardia with no recordable diastolic blood pressure. Ms Harrop explained her decision to attempt to intubate Mr Ryan. Essentially, it was because there was a risk that the ventilation through the airway was causing O2 to be pumped into the stomach, which raised the risk of vomiting and aspiration. One attempt was made according to Ms Harrop lasting no more than 15 seconds after sighting the vocal cords, but because Mr Ryan gagged, the attempt was aborted. Ms Harrop said that it was desirable to stabilise Mr Ryan before retrieval because if there was a sudden arrest or vomiting, it could be managed more successfully if the patient was intubated.

8.6. Effective resuscitation also required an IV line for the administration of emergency medication, however Ms Harrop explained that they were unable to do that in Mr Ryan, partly because of his obesity, which I understood made it more difficult to locate identifiable veins.

8.7. This witness was adamant that the attempt to intubate Mr Ryan was confined to that one attempt and not two or three attempts as suggested by Ms Brown. Having heard evidence from both witnesses, I have no hesitation in accepting the accuracy of Ms Harrop's account. She was a very impressive witness who was able to explain her

[52] Transcript, page 1247
[53] Transcript, page 1268

actions convincingly. She was familiar with the detailed entries in the ambulance record and was able to elaborate with ease. I find that the witness was not only astute, but was very well trained in emergency paramedical work. Ms Harrop explained that she had been trained to ensure that prior to attempting intubation, extra ventilation or preoxygenation should be undertaken to minimise sudden depletion of O2. Ms Harrop insisted that she performed this process upon Mr Ryan in accordance with her training. I accept Ms Harrop's evidence about pre-oxygenating Mr Ryan before intubating him.

8.8. Ms Harrop said that although Mr Ryan's O2 sats were recorded at 97%, she suspected that this was inaccurate because of his poor condition.

8.9. According to Ms Harrop, when Mr Ryan went into cardiac arrest after being lifted onto the stretcher, it was very difficult to perform compressions due to the height of the stretcher. In fact, she remarked that for occupational health and safety reasons, the paramedics were not permitted to perform compressions when patients are on the stretcher. They are performed once the stretcher is inside the ambulance, which is what occurred with Mr Ryan. I accept that meanwhile, Ms Brown to her credit, performed cardiac compressions while Mr Ryan was on the stretcher. I am mindful of the need to proceed with haste in these circumstances. After 20 minutes on the scene at Sportsmed the ambulance left and attended the RAH within three minutes.

8.10. According to the ambulance record, Mr Ryan remained in asystole en route to the RAH where he was stabilised with intensive resuscitation. A report of a CT scan of the brain refers to Mr Ryan having a cardiac arrest, with the 'down time' estimated at 30 minutes, followed by seizure activity[54]. Having considered the evidence overall, I find that there is no basis for any criticism of the way in which the ambulance officers attempted to stabilise Mr Ryan prior to transfer to the RAH.

8.11. One issue explored by some of the parties during the Inquest concerned whether Ms Harrop's evidence that she sighted Mr Ryan's vocal cords when intubation was attempted, tended to undermine Dr South's opinion that Mr Ryan would be difficult to intubate. Having heard evidence on this topic from a number of witnesses, including other anaesthetists and intensivists, I find that Dr South's opinion was validly formed and that Mr Ryan's physical characteristics would have presented a potential challenge to any person needing to intubate him in an emergency situation.

[54] Exhibit C7d, page 7

9. Evidence of Dr William Parkin

9.1. An opinion was sought from Dr Parkin concerning the circumstances leading to Mr Ryan's death at Sportsmed. According to Dr Parkin's CV[55], he has over 35 years' experience in intensive care medicine. Since retiring, he remains a Fellow of Intensive Care medicine at Monash Medical Centre and he lectures in physiology.

9.2. Dr Parkin reviewed the medical records, affidavits of witnesses and opinions from other medical practitioners concerning Mr Ryan's admission to Sportsmed. His opinions are set out in a report which highlights certain shortcomings in the management of Mr Ryan which he elaborated upon in evidence.

9.3. Because Mr Ryan was morbidly obese, Dr Parkin maintained that he was regarded as in a high risk group for general anaesthesia. He considered that the anaesthetic was conducted appropriately under challenging circumstances, however he noted that Mr Ryan's 'end tidal PCO2' level at the end of the procedure was elevated and speculated that, in hindsight, it may have been an indicator that Mr Ryan might be prone to respiratory depression. He conceded that Dr South would have been mindful of that risk when writing up the emergency orders in the medical notes.

9.4. Dr Parkin noted that following transfer to the ward, Mr Ryan was being cared for by nurses who failed to recognise that a combination of obesity and opioid medication can lead to under ventilation and acute ventilatory failure. In this regard, Dr Parkin observed that this lack of awareness is relatively widespread amongst nurses and others worldwide. Dr Parkin estimated that unexpected ventilatory response occurs in about 2% of patients worldwide, which amounts to large numbers of people overall[56].

9.5. He explained that a person develops ventilatory failure when the reciprocal process of breathing becomes inadequate as to rate and/or depth. When this occurs the carbon dioxide level in the blood rises, because the excretion of carbon dioxide is inadequate and the patient becomes 'mentally obtunded'. Dr Parkin elaborated as follows:

> 'Nursing staff caring for these patients need to be aware of the possibility of under ventilation. Judging these matters in the middle of the night in semi darkness when the patient may be just naturally asleep as opposed to sedated with carbon PCO2 requires

[55] Exhibit C12a
[56] Transcript, page 1445

discernment and a keen appreciation of the rate and magnitude of effective lung excursion.' [57]

9.6. Dr Parkin considered that bearing in mind Mr Ryan's obesity, the risk factors began to accumulate following the administration of narcotic analgesics and other medications post operatively. He described the pharmacodynamics at play as 'complex'. According to Dr Parkin, Mr Ryan was a 'susceptible' patient who required monitoring by nurses who had the ability to respond effectively. In this regard Dr Parkin maintained that whenever a patient is given morphine, nurses should always expect that the patient may go into ventilatory failure. Dr Parkin noted that following administration of morphine, it was not good for Mr Ryan to be given capadex, a morphine-like compound, which has now been removed from 'Australian pharmacopoeia' and which also depresses ventilation[58].

9.7. Dr Parkin noted that if Mr Ryan had been discovered in a sedated state in a timely fashion, and if his IV line was still functioning, naloxone could have been administered to restore some degree of ventilation which would probably prevent profound hypoxia and cardiac arrest[59].

9.8. However, he maintained that the first requirement was to recognise that Mr Ryan was deteriorating and then to actively intervene. Without a functioning IV line Dr Parkin maintained that it was always going to be difficult to administer urgent medications to Mr Ryan in the event that he deteriorated.

9.9. Dr Parkin considered that it was incumbent upon medical practitioners to alert nurses to the need to adequately monitor post operative patients who are morbidly obese in particular, because untrained and unsupported staff often proceed on the basis that nothing is going to go wrong. Dr Parkin explained that when a patient's conscious state is depressed by medication, as well as an elevated CPO2, the upper airway may become partly or intermittently totally obstructed leading to a further fall in ventilation. This is also said to be a particular problem in obese patients who may have redundant tissue in the naso, oro and laryngopharynx, leading to snoring and upper airway obstruction.

[57] Exhibit C12
[58] Transcript, page 1407
[59] Exhibit C12 and Transcript, page 1421

9.10. Dr Parkin expressed the view that it seemed that:

> 'Safety at Sportsmed SA was a passive reactive process rather than a proactive process involving teamwork, training and mutual support.' [60]

9.11. In Dr Parkin's view, proper observations should have been made half hourly of Mr Ryan's conscious state and rescusability, respiratory rate and depth, pupil size as well as pulse, blood pressure, autonomic signs of hypercapnia, including sweating, peripheral vasoconstriction, pallor, coolness, and if at all possible, measurement of arterial PCO2 levels. Dr Parkin accepted that this last measurement would not be possible unless Mr Ryan was in an intensive care setting or possibly HDU.

9.12. As to the role played by the ambulance officers at Sportsmed, it was suggested by Dr Parkin that in Mr Ryan's situation, once he had been administered O2 via a mask, raising his arterial O2 level, critical hypoxia might develop if his O2 mask was suddenly removed in an attempt to intubate him or to move him. A prolonged attempt would in his view be hazardous. In the course of his evidence Dr Parkin accepted that this risk would be reduced somewhat if the paramedics pre oxygenated Mr Ryan before attempting intubation[61].

9.13. Dr Parkin emphasised that there is commonly in hospitals around the world an over reliance on 'soft' indicators such as rate of respirations and O2 sats. He stressed that even where O2 sats improve, this does not indicate that the problem has ended, but rather it is an indication that there is a problem which needed careful monitoring.

9.14. He maintained that the only reliable indicator of a developing respiratory depression is to measure end tidal CO2 measurement, which is not possible to measure once a patient has left recovery and is transferred to the ward[62].

9.15. Whilst Dr Parkin recognises that nurses are reluctant to wake sleeping patients, he insists that it should be done to check sedation score or mental state, notwithstanding that even these observations may be an unreliable indicator due to misinterpretation of observations. He elaborated as follows:

> 'Of course nobody wants to keep waking a patient up for this reason and so often nursing staff don't do that but the evidence is all around the world that if you don't do that a

[60] Exhibit C12
[61] Transcript, page 1425
[62] Transcript, pages 1412 and 1420

> percentage of patients go into profound ventilatory failure with the sort of consequences that we're looking at here.' [63]

9.16. Dr Parkin expressed the firm view that nurses should have contacted Dr South when Mr Ryan's IV line failed at 10:15pm, so that Dr South could have chosen to replace it. He remarked that if nurses were unclear about Dr South's intention concerning the duration of the PCA medication, they should have called him to discuss it rather than acting without instruction[64]. In that regard Dr Parkin expressed some disapproval of the wording of Dr South's order for IM/SC morphine in Mr Ryan's chart and considered that it may have given rise to confusion and misinterpretation amongst nurses[65].

9.17. It was acknowledged that nurses are reluctant to call doctors overnight for fear of getting an aggressive response. Dr Parkin stated that it is incumbent on doctors to engage with the nurses to ensure that they are called when there is a deterioration and also to adequately document instructions when a higher level of monitoring is called for[66].

9.18. This witness noted the list of steps which were specified in Mr Ryan's chart to be followed in the event of deterioration, yet when Mr Ryan did become deeply sedated, there was no IV route for administration of naloxone. Dr Parkin elaborated as follows:

> 'It was a breakdown in the safety system and then, of course, when he arrested, there wasn't a drip in to deal with the cardiac arrest and he was a very large man, difficult to move, difficult to ventilate, difficult to roll if he was vomiting. You know, we were heading for a tricky situation if he became critically hypoxic which, in the event, he did.' [67]

9.19. Dr Parkin was cross-examined about the extent to which his views about reinsertion of the IV line were expressed with the benefit of hindsight. In refuting this suggestion the witness maintained that because of his training and experience, his approach is to anticipate what might happen in these types of patients[68].

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[63] Transcript, page 1410
[64] Transcript, page 1423
[65] Transcript, page 1433
[66] Transcript, page 1440
[67] Transcript, page 1420
[68] Transcript, page 1431

9.20. I found Dr Parkin to be an eminently qualified witness who made a valuable contribution to the matters under consideration in the Inquest. I accept the opinions expressed and summarised above concerning Mr Ryan's management at Sportsmed. As to the regularity of observations required however, I find that something in the order of one hourly observations might have been adequate to detect Mr Ryan's deterioration in a timely manner.

10. Evidence of Dr Peter Thomas

10.1. This witness was called by counsel for Sportsmed to comment upon issues arising concerning the deaths of Mr Ryan and also Mrs Walton. Dr Thomas is an intensivist with impressive qualifications and experience[69]. He is currently the Director of the ICU at the Lyell McEwin Hospital. He was director of the RAH ICU for many years.

10.2. As far as Mr Ryan is concerned, Dr Thomas considered that he should have been regarded as a high risk for surgery due to his obesity and his high BMI, as well as his 'bull neck'. This witness considered the medical notes, affidavits of other witnesses and the opinion of Dr Parkin. In his view, Mr Ryan's surgery could have been performed at another hospital which had HDU and ICU facilities, rather than Sportsmed. According to this witness Mr Ryan should have been assessed preoperatively by a physician and also by the anaesthetist. In his view, Mr Ryan was appropriately admitted to Sportsmed for his surgery, but should have been in the HDU overnight, rather than being transferred from recovery to room 28 without increased monitoring. The following passage from the evidence summarises his reasoning:

> 'We have Dr South's opinion that he was very likely to be extremely difficult to intubate if there were any problems and certainly I would have wanted him in HDU overnight. The problem with patients with obesity is not so much in the first hour or two post-operatively but it's in the rest of the night and this is where obese patients often have problems even if they haven't had surgery. They have obstructive airways and stop breathing and so just to monitor somebody for a few hours like Mr Ryan in a high dependency unit I don't think is long enough. My opinion is he should have been there overnight.' [70]

10.3. I understood that the witness's reference to the few hours spent in HDU was in fact a reference to Mr Ryan's period in the recovery ward immediately following surgery, prior to being transferred to room 28. Dr Thomas accepted that even in the absence of

[69] Exhibits C38a and C38b
[70] Transcript, page 1597

onsite medical practitioners, skilled HDU nurses can provide a level of 'early warning' if deterioration occurs. Dr Thomas expected that in Mr Ryan's case, a nurse would have checked his sedation level between 2am and 4am. I accept this opinion and find that it is most likely that a suitably trained nurse who was monitoring Mr Ryan in a HDU would have detected a deterioration in his conscious state which would have enabled a timely call for assistance either from Dr South, or a much earlier retrieval to the RAH, in which case the outcome would most likely have been very different.

10.4. As to the possible reasons for Mr Ryan's deterioration, this witness pointed to his obesity as a contributing factor, with 'hypoventilation syndrome' leading to arrhythmia and arrest. Dr Thomas suggested that a narcotic overdose, contributed to by renal impairment, may also have been factors in his demise, complicated also by the side effects of capadex.

10.5. Dr Thomas emphasised the importance of nurses being alert to the signs of narcotic overdose and to the role of naloxone in reversing the situation.

10.6. According to this witness, patients should be given information when the venue for surgery is discussed which should include information about the capacity of the hospital to deal with problems if they emerge. In this way, patients are able to make informed decisions concerning risks, not just for the procedure itself, but for the post operative period as well.

11. Evidence of Associate Professor Pamela Macintyre

11.1. A documented opinion from Ms Macintyre was sought by counsel for Drs South and Cobain concerning the management of both Mr Ryan and Mrs Walton[71].

11.2. Dr Macintyre is Director of the Acute Pain Service and Senior Consultant Anaesthetist at the RAH. Her experience has mainly been in public hospitals.

11.3. One topic of contention in this Inquest is the degree to which undiagnosed sleep apnoea may feature in elevating the risk of post operative complications in obese patients who are prescribed opioid medications for pain relief. Dr Macintyre's view of the research on this topic is that the risk is quite low, whereas Dr Williams, who

[71] Exhibit C37

was called to express a view about the management of Mrs Walton in this Inquest, expresses a very different view. Having considered the evidence of all witness and these two in particular, I find the view expressed by Dr Williams on this topic to be more persuasive[72].

11.4. Notwithstanding Dr Macintyre's opinion about the estimated risks, she expressed a strong opinion that there is a concerning lack of knowledge in nurses and medical practitioners about the effects of opioids on a person's breathing and central nervous system. She believes that obese patients and other high risk patients who are given opioid medications should be monitored appropriately to ensure their safety.

11.5. According to Dr Macintyre nurses are often instructed to monitor respiratory rate, however the rate may be unchanged even in patients who have severe respiratory depression. In her view, the depressant effects of opioid medications are threefold. They depress consciousness, leading to increased sedation. They also depress the respiratory drive, leading to decreased depth and/or rate of respiration. And finally, they depress upper airway muscle tone, leading to upper airway obstruction, leading to snoring while sleeping.

11.6. Dr Macintyre insisted that the best clinical sign of respiratory depression is increasing sedation and the definitive diagnosis is to measure the PCO2 level, which is impractical to do in the hospital ward. According to Dr Macintyre, pulse oximetry which measures O2 levels, will not detect early onset of respiratory depression. Patients given increased or supplemental O2, may show O2 levels within normal limits even in the presence of very high PCO2 levels (which are not readily measurable).

11.7. The monitoring system utilised at Sportsmed in 2008 was said to be compromised in that there was no requirement to measure Mr Ryan's sedation score following administration of an injectable or oral opioid. It was observed that this situation was said to be typical in many small private hospitals[73]. Dr Macintyre was critical of the inclusion in the Sportsmed chart of the level 's' on the chart which indicates that a patient is 'naturally asleep'[74].

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[72] Transcript, page 1542

[73] I note that there was a change in the system by 2010, requiring this to be observed one hour following administration of an opioid

[74] Exhibit C6d

11.8. This is said to be open to interpretation, given the reluctance to wake a sleeping patient and the difficulty in detecting whether the patient is naturally asleep or suffering respiratory depression.

11.9. In Mr Ryan's situation, Dr Macintyre considered that he should have been woken at regular intervals to assess his sedation level and that it should have been assessed when his medication was given and one hour later. This witness expressed similar concerns to concerns expressed by Dr Parkin about the lack of monitoring between 2am and 6am, despite Mr Ryan's snoring and his low O2 level of 87% observed at 2am. In Dr Macintyre's view, this low level should have triggered a response to report the matter to a doctor who may have arranged for the administration of naloxone.

11.10. With some minor qualification, I accept the opinions expressed by Dr Macintyre which are generally consistent with those expressed by Dr Parkin and Dr Thomas.

12. Findings concerning the circumstances leading to the death of John William Ryan

12.1. Bearing in mind the available evidence and the helpful submissions of counsel, I make the following additional findings concerning the circumstances leading to Mr Ryan's death:

- Mr Ryan's admission to Sportsmed was compromised by a flawed pre admission process which resulted in him being deprived of a timely anaesthetic consult as well as the possibility of a medical consult which could have assessed his level of risk and suitability for admission to Sportsmed;

- This flawed process resulted in unacceptable pressure on Dr South which compromised his ability to cancel the surgery. It also meant that there was no opportunity to consider whether Mr Ryan suffered from sleep apnoea which would have been relevant to his risk profile in the post operative period;

- I accept that in recent years there has been an increased awareness of sleep apnoea, particularly in obese patients;

- Based upon Mr Ryan's morbid obesity and physical characteristics alone, he should have been assessed preoperatively as a higher risk patient who required monitoring in a HDU throughout the night following his surgery;

- The concerns expressed by Dr South to nurses and to Dr Patterson should have triggered an appropriate adjustment to Mr Ryan's proposed placement after his release from the recovery ward;

- The decision by nurses to remove Mr Ryan's failed intravenous line without consulting Dr South was inappropriate, but was consistent with past practices of nurses at Sportsmed;

- The absence of written directions or appropriate guidelines concerning what to do in the event of failure of the intravenous line, when to commence alternative opioid medications and what frequency of observations were required thereafter, meant that Mr Ryan was vulnerable to the judgment of relatively junior nurses who were caring for him;

- The nurses responsible for Mr Ryan's care overnight were understaffed and under supported which meant that he received cursory attention over a period of four hours, followed by a delayed and substandard response to his perilous condition at 6am;

- Mr Ryan's death could have been avoided if he had been monitored appropriately in a HDU overnight;

- Without a functioning HDU at Sportsmed, Mr Ryan should not have been admitted for his surgery;

- Admission to a hospital which had backup ICU/HDU capability should have been encouraged by his treating medical practitioners, bearing in mind that his morbid obesity would present additional challenges in the event of an emergency overnight at Sportsmed.

INQUEST INTO THE DEATH OF MRS PATRICIA DAWN WALTON

13. Outline of the sequence of events - Patricia Walton

13.1. Mrs Walton was 66 years old when she was admitted to Sportsmed for a left total hip replacement on 26 October 2010. Her surgery was performed by Dr Adrian Bauze.

13.2. Mrs Walton suffered an acute deterioration in the early hours of the sixth day after a total hip replacement. She was retrieved to the RAH at about 5am on 1 November 2010. Results of ECG and troponin levels at the RAH pointed to ischaemic changes in her heart, but which did not suggest a myocardial infarction. After being stabilised in ICU at the RAH, tests revealed that Mrs Walton had suffered irreversible brain damage. Ventilator support was withdrawn in consultation with her family at 3:45pm on 2 November 2010 and she passed away at 3:57pm.

13.3. When first consulted in May 2009 Mrs Walton was morbidly obese at 150 kilograms. The referring general practitioner, Dr Christopher Platis, had alerted Dr Bauze to Mrs Walton's co morbidities, including hypertension, sleep apnoea and various drug allergies.

13.4. Dr Bauze noted that at 150 kilograms the risks of technical problems in surgery and post operative complications were too high. He strongly urged Dr Platis to encourage Mrs Walton to drop about 30 kilograms to lessen the risks. In a review in October that year, Dr Bauze reiterated in a letter to Dr Platis that he would prefer that Mrs Walton was less than 100 kilograms before surgery.

13.5. By July 2010 Mrs Walton managed to drop her weight to about 127 kilograms and it seemed that she was unlikely to be able to lower it further. Dr Bauze reluctantly agreed to perform the surgery, despite his concerns about her weight, when Mrs Walton pressed him that her pain was such that she was willing to take her chances. The consent form completed by Mrs Walton indicated that there may have been a problem with anaesthetic in the past, but gave no details.

13.6. Dr Bauze requested a preoperative consult with an anaesthetist and also a physician. The system for seeking these referrals was simply ticking two boxes on the consent form. A referral note was sent to physician, Dr Bill Cobain, but did not alert Dr

Cobain to any problems. Due to some administrative error, the request for preoperative anaesthetic consult was not followed up.

13.7. Mrs Walton's daughter, who was an intensive care nurse at another hospital at the time, had concerns about her mother being operated on at Sportsmed where there was no intensive care backup. Sarah Walton was aware that her mother had a failed intubation in 2004 at North Eastern Hospital which meant cancellation of a planned gynaecological procedure. Following this incident a letter was prepared by the anaesthetist, Dr Jocelyne Slimani, for Mrs Walton to provide to doctors warning them of potential difficulties if she was to have another anaesthetic. Another letter was prepared at the request of Mrs Walton's daughter to the same effect in contemplation of her mother's hip replacement surgery. Senior visiting anaesthetic specialist, Susan Belperio from Modbury Hospital, strongly recommended that a 'timely pre anaesthetic consultation' be arranged before any future anaesthesia was undertaken. Dr Belperio recommended that Mrs Walton have her surgery in a hospital which had post operative HDU/ICU facilities. It was also noted that Mrs Walton had difficult venous access. Dr Bauze has since stated that he was not made aware of either letter until the day of surgery.

13.8. Dr Cobain was a specialist general physician whose expertise was sought by a number of surgeons at Sportsmed to provide preoperative assessments and to manage medical issues arising in their patients post operatively. Dr Cobain provided an on-call after hours service to the hospital, which saw him being contacted by nursing staff when problems arose with post operative patients. Dr Cobain first assessed Mrs Walton back in 2004, following the failed intubation and before her surgery was performed at St Andrews Hospital. At the request of Dr Bauze he conducted a preoperative medical evaluation of Mrs Walton on 23 September 2010 which was summarised in a concise document sent to Dr Bauze, with copies forwarded to the general practitioner, Dr Platis, the nurse manager of Sportsmed, Ms Zilm and also to an anaesthetic group practice where Dr Cobain mistakenly believed Mrs Walton's assigned anaesthetist was working. Dr Cobain's letter included a list of Mrs Walton's various medical issues including asthma, her medical history, current medications and known allergies, including adverse reactions to oxycontin and tramadol. Dr Cobain also noted the failed intubation attempt and underlined 'anaesthetic related complications'.

13.9. Dr Cobain included a reference to Mrs Walton's co morbidities, noting that her peri operative risks were increased 'because of BMI, adverse drug reactions, anaesthetic difficulties and sleep apnoea'. Dr Cobain ordered some preoperative investigations and offered to review Mrs Walton post operatively.

13.10. No view was expressed in Dr Cobain's letter about the appropriateness or otherwise of having Mrs Walton's surgery at Sportsmed. Dr Cobain has since maintained that he was unaware of the letter from Dr Belperio, but believed that it was appropriate for Mrs Walton to have her surgery at Sportsmed nevertheless.

13.11. Dr James Dennis was the nominated anaesthetist. An operation list forwarded to his rooms in the late afternoon before surgery contained no information which would give any hint of Mrs Walton's co morbidities, or any previous problems with anaesthesia. Because of the error made with Dr Cobain's letter, Dr Dennis did not have the benefit of his preoperative assessment in advance.

13.12. Mrs Walton was prepared for surgery on the morning of 26 October 2010. Her weight was recorded as 126.5 kilograms and BMI was calculated as 46.3. Dr Dennis was provided with a copy of Dr Belperio's letter as he was about to meet his patient. Dr Dennis raised concerns with Dr Bauze about the absence of a pre anaesthetic consult.

13.13. Dr Dennis familiarised himself with the various risk factors and the previous problems with intubation. He decided to perform a spinal block with a view to utilising a laryngeal mask airway in an emergency. He has since stated that he would have cancelled the surgery if his spinal analgesia did not work. The surgery and anaesthetic were completed without incident, notwithstanding the challenges posed by Mrs Walton's size and co morbidities.

13.14. During the post operative phase Mrs Walton was monitored by nursing staff, initially in recovery and then under high dependency observation. She was administered opioid medications and had regular full observations including 'pain score' and 'sedation score' recorded in the hospital notes at least until 8am the following morning. She remained under high dependency observation until moved to a room in the ward late that evening.

13.15. Improved protocols were in place at Sportsmed by this time to record nursing observations including sedation score and pain score an hour following administration of opioid medication. PCA analgesia was delivered during the first 24 hours post surgery. Oral oxycontin was administered thereafter on a regular basis.

13.16. Mrs Walton's blood pressure and pain proved very difficult to control throughout most of the post operative period. Because Mrs Walton had been prescribed opioid medications for many months before admission for pain control, she was regarded as 'opioid tolerant' which was one factor which needed to be handled with some care.

13.17. Her blood pressure fluctuated throughout her admission and was at times at dangerously high levels around 220 systolic. Dr Cobain's assistance was requested in relation to this problem after which he attended upon Mrs Walton each day, making adjustments to her medical management.

13.18. Mrs Walton continued to receive regular opioid medication for pain up to Saturday evening 30 October 2010, but with only 'patchy' relief. Entries in the medication chart record that Mrs Walton was given medication for constipation over several days which suggests that she may have been in additional discomfort.

13.19. The following morning, Sunday 31 October 2010, Mrs Walton was unwell. She was said to be light headed and drowsy with nausea and vomiting. At 10am Mrs Walton's oxygen saturation level (O2 sats) was recorded as 84% 'on air'.

13.20. Dr Cobain reviewed Mrs Walton at approximately 11am and decided to reduce her narcotic medication. He prescribed an antiemetic and noted that her blood pressure was still fluctuating. Dr Cobain instructed nurses to cease endone, tramal and panadeine forte. In hindsight, I find that this was a time from which Mrs Walton warranted a greater level of care, yet no further observations were recorded until 6pm.

13.21. At approximately 7:25pm, after walking some distance with her frame, Mrs Walton told a nurse that she felt some wheeziness and was very short of breath, with some chest tightness during her exercise[75]. When the matter was reported to the senior nurse she contacted Dr Cobain to request a telephone medication order. Mrs Walton was said to have explained that it was like symptoms of asthma which she had

[75] Exhibit C10a, page 27

experienced previously. She had overlooked bringing her asthma puffer into hospital and there was no medication ordered for the nurses to administer.

13.22. After discussing the matter with Dr Cobain, the senior nurse documented the episode as a complaint of wheeziness and shortness of breath on exertion, without complaint of chest pain[76]. The precise nature of the complaint conveyed to Dr Cobain about this incident was an issue in dispute during the Inquest. A telephone order was recorded for a ventolin nebuliser and seretide puffer. Dr Cobain also placed Mrs Walton on fluid restriction[77] and planned to review her the following morning. The nebuliser was said to have been administered 'with effect'.

13.23. At 9:30pm Mrs Walton was given oxycontin, 20mg[78]. At 10pm her O2 sats dropped again, this time to 88% on air, but improved with administration of O2 at two litres. Her systolic blood pressure reading had increased from 170 to 190[79].

13.24. A nursing note made in retrospect suggests that at about 2:30am Mrs Walton walked with her frame to the bathroom without complaint, but that upon her return she appeared short of breath[80]. Her blood pressure was recorded as $^{200}/_{55}$. The ventolin nebuliser was readministered once she was returned to bed.

13.25. From this time, nursing staff kept Mrs Walton under closer observation in her room, recording high blood pressure readings fluctuating between 200 and 210 systolic. At 3:15am Mrs Walton was noted to be short of breath but not wheezy and was given an oral dose of norvasc in accordance with Dr Cobain's telephone order[81].

13.26. By 3:40am Mrs Walton complained of feeling much worse with a heavy chest, but is said to have denied having chest pain. Her O2 sats dropped to 64%, then 50% at 3:50am. While another nurse was on the phone reporting her condition to Dr Cobain, Mrs Walton became sweaty and then lost consciousness. An ambulance was then called.

13.27. I refer in more detail to the efforts to resuscitate Mrs Walton later. Similar challenges arose for the paramedics arising from Mrs Walton's obesity to those arising with Mr

[76] Exhibit C10a, page 35
[77] Exhibit C10a, page 70
[78] Exhibit C10a, page 68
[79] Exhibit C10a, page 56
[80] Exhibit C10a, page 29
[81] Exhibit C10a, pages 55 and 68

Ryan and which contributed to a longer evacuation period. Mrs Walton suffered cardiac arrest at about 4:07am. Cardiac compressions, atropine, adrenaline and O2 was administered. Output was regained on a few occasions, however Mrs Walton was not stabilised until about 4:55am.

13.28. Attempts to introduce an IV cannula were initially unsuccessful, but was achieved at 4:27am. Despite the challenges, an ambulance officer was able to successfully intubate Mrs Walton before her evacuation to the RAH.

13.29. The ambulance left Sportsmed at 5:05am and reached the RAH within minutes. ECG recordings during attempted resuscitation and subsequent troponin levels indicate that Mrs Walton had experienced a cardiac ischaemic episode at Sportsmed, but without progressing to myocardial infarction. Mrs Walton developed irreversible hypoxic changes to the brain despite ICU management at the RAH. Ventilator support was withdrawn at 3:57pm on 2 November 2010.

14. Evidence of Dr John Gilbert

14.1. At autopsy Dr Gilbert confirmed the suspected cause of death as hypoxic ischaemic encephalopathy[82]. The more comprehensive cause of death was expressed as 'hypoxic-ischaemic encephalopathy due to cardiac arrest due to ischaemic and hypertensive heart disease, post left total hip replacement'. There was no evidence at autopsy of pulmonary embolus. The heart was enlarged with left ventricular hypertrophy and dilation. The most significant finding at autopsy was the presence of severe triple vessel coronary artery disease. There was also evidence of changes to the left ventricular myocardium consistent with previous (but not recent) myocardial infarction. Dr Gilbert also noted pulmonary oedema and bilateral pleural effusions, said to be early indications of acute respiratory distress syndrome.

14.2. At Forensic Science SA Mrs Walton's weight was recorded as 135 kilograms which gave a BMI of 49, however the weight recorded at Sportsmed and in Dr Cobain's notes is 126 kilograms[83]. As in Mr Ryan's case, this discrepancy has not been resolved, however I take into account Dr Gilbert's suggestion that the scales at Forensic Science are reliable because they are regularly tested. Alternatively, the increase in weight may be attributed to the administration of fluids during her

[82] Exhibit C2b
[83] Exhibits C9a and C10, page 17

admission at Sportsmed and/or the RAH. I note that Dr Cobain suggested that Mrs Walton be weighed daily commencing 1 November 2010 however, by this time, she had been transferred by ambulance to the RAH.

15. Evidence of Dr Adrian Bauze

15.1. Dr Bauze is the orthopaedic surgeon who performed a left total hip replacement on Mrs Walton, aged 66 years, at Sportsmed on 26 October 2010.

15.2. An affidavit from this witness, together with various attachments, sets out the sequence of events[84]. Mrs Walton initially consulted Dr Bauze on 5 May 2009 concerning her painful arthritic left hip. At that time Mrs Walton weighed 150 kilograms.

15.3. A referral letter from her general practitioner, Dr Christopher Platis, dated 15.April 2009, lists various medical conditions in Mrs Walton's history, including hypertension, wheezing and sleep apnoea, managed with Continuous Positive Airway Pressure (CPAP). Dr Bauze was not prepared to operate on Mrs Walton until she had lost weight. He regarded her as a high risk candidate for surgery at that time. Mrs Walton was taking a number of regular medications including panadeine forte and she was said to be allergic to penicillins and sulphonamides.

15.4. In a letter to Dr Platis dated 5 May 2009, Dr Bauze expressed his concerns as follows:

> 'I have explained to Patricia that she is too heavy for a hip replacement. The risks of technical problems with the surgery, infection, DVT and cardio-respiratory complications are simply too high. I strongly recommended that she lose weight. I have recommended she discuss all options for losing weight with you, including laparoscopic banding surgery.'

15.5. In the same letter Dr Bauze indicated that from 21 May 2009 he was moving his private practice from North Adelaide to Sportsmed at Stepney, and would also consult at Sportsmed Blackwood and Goodwood.

15.6. In a follow up consult five months later, Mrs Walton had managed to drop her weight to 135 kilograms, but her BMI was estimated at 49.5. The hip had deteriorated with increasing pain which was being managed with an opioid medication, MS contin. In

[84] Exhibits C8a and C8b

his letter to Dr Platis dated 1 October 2009, Dr Bauze expressed his review as follows:

> 'I have explained that she is still in the extremely high risk category for hip replacement surgery and I would prefer her to achieve a weight of under 100 kg at least. This would give her a body mass index of 37 which is still high but much safer than her current weight.' [85]

15.7. In April the following year Mrs Walton's weight had dropped marginally to 125 kilograms and Dr Bauze is said to have discussed the 'higher risk of complications' if the surgery was performed at that weight. This time Dr Bauze indicated in his letter to Dr Platis that the plan was to try to continue reducing weight, but probably to plan surgery after a three month review. In July 2010 a decision was made to perform the surgery in October 2010. Mrs Walton was said to be keen to have the surgery. She had not been able to reduce her weight any further and her pain was severe and ongoing[86].

15.8. I note that between April and July 2010 Dr Bauze was included in Sportsmed letterhead as one of ten named surgeons in the orthopaedic division of Sportsmed. According to Dr Bauze, in 2010, his only regular surgical lists were at Sportsmed, although he occasionally operated at Memorial or Wakefield Street Hospitals, but had no regular lists there[87]. He was said to have some capacity to operate at the Lyell McEwin Hospital[88].

15.9. In a fresh referral to Dr Bauze from Dr Platis dated 20 October 2010, it is noted that Mrs Walton was being prescribed oxycontin SR tablets 20mg twice daily as well as panadeine forte. The known allergies list now included tramadol[89].

15.10. A major issue arising in this Inquest is whether Mrs Walton should have been assessed as inappropriate for surgery at Sportsmed due to the limitations of the care available in the event of complications. The risks were said to be twofold in that there was said to be an elevated risk during the anaesthetic and surgery itself, but also an elevated risk of a number of complications in the post operative phase, bearing in mind that Mrs Walton was a person with a number of challenging co morbidities.

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[85] Exhibit C8, page 17
[86] Exhibit C8a, page 19
[87] Transcript, page 690
[88] Transcript, page 760
[89] Exhibit C8, page 24

15.11. According to Dr Bauze, during his final preoperative consult he outlined the potential risks of surgery, including death, and that Mrs Walton remarked that she would rather be dead than to continue with her pain. Whilst I find that Dr Bauze discussed relevant risks with his patient, he may not have spoken to her about whether it was prudent to have the surgery performed in Sportsmed or some other hospital. Dr Bauze indicated that he relied upon either the anaesthetist, or in Mrs Walton's case, the pre admission consultant, Dr William Cobain, to express a view about that. He maintained that if either of them had suggested that the surgery be performed elsewhere, he would follow that advice.

15.12. The consent form for the planned surgery signed back on 29 July 2010 contains a disclosure statement in very small print at the base of the form which, if read by Mrs Walton, disclosed that her surgeon was a shareholder in Sportsmed and that he may benefit financially from having Mrs Walton's 'treatment and care' provided there. Other disclosures referred to possible financial advantages flowing from the supply of discounted prostheses.

15.13. The Medical Board of Australia Code of Conduct Parts 6 and 8 outline the responsibilities of medical practitioners to ensure that they implement practices which minimise risk to patients, and also that practitioners disclose any relevant conflict of interest[90]. I am concerned that the decision to proceed at Sportsmed was influenced by the close professional and financial association with that facility. Whilst there was disclosure of Dr Bauze's financial interest in fine print on the consent form, in my view it was inadequate in the circumstances.

15.14. Dr Bauze requested that Mrs Walton have a pre anaesthetic consult as well as a consult with physician, Dr William Cobain. The relevant patient information sheet provided to Mrs Walton contains a paragraph devoted exclusively to the preoperative consultation service provided by Dr Cobain at Sportsmed and which includes a statement that 'Dr Cobain will ensure that you are fit and healthy enough to have the surgery'[91].

15.15. The documents utilised by Dr Bauze at Sportsmed for consent and pre admission procedures included boxes which were ticked if the surgeon requested preoperative assessments by anaesthetists, physicians or other practitioners. According to Dr

[90] Exhibit C40
[91] Exhibit C8a, page 31

Bauze, he ticked the boxes for a preoperative consult by an anaesthetist and also from a physician, Dr Cobain, which was said to be routine for all patients having a total hip replacement[92]. He explained that the anaesthetic consult was requested because of information which he had received about Mrs Walton having a problem with a previous anaesthetic, although he was unsure how he became aware of this[93]. At that time he said that he relied upon his personal assistant to make the necessary arrangements. The only consult which was undertaken however was with Dr Cobain. Dr Bauze was unable to explain why the anaesthetic consult was overlooked, but noted that he rarely received letters from anaesthetists who conducted these consults. Dr Bauze explained that he no longer relies on the ticked box. He now dictates a letter requesting the consult, but leaves it to his personal assistant to fill in the anaesthetist's name and details[94]. Dr Bauze added that when he has concerns about a patient, he now writes a more comprehensive note to Dr Cobain in his referral. It is self evident that the system used by Dr Bauze for preoperative consults in 2010 was flawed.

15.16. Dr Bauze explained that he received a letter from Dr Cobain summarising his opinion about Mrs Walton and that because there was no suggestion that the surgery should be performed elsewhere, he assumed that Dr Cobain considered that it was safe to proceed at Sportsmed. Dr Cobain offered to manage Mrs Walton post operatively if required[95]. Having reviewed the letter to which Dr Bauze refers, it is plain that the topic is simply not mentioned and in my view it should have been mentioned. I find that because Mrs Walton was appropriately regarded as a high risk patient, the surgeon should have specifically sought Dr Cobain's view about whether it was prudent to have the surgery performed at Sportsmed or some other hospital where there were more comprehensive facilities and medical backup.

15.17. Whilst Dr Bauze insisted in evidence that financial considerations did not influence his decision to operate on Mrs Walton at Sportsmed, I find that the setup of his practice at Sportsmed in July 2010, gave rise to an unspoken expectation that his patients would have their procedures there, unless another physician or anaesthetist raised a concern[96]. Given that some of those medical practitioners were also working

[92] Transcript, page 707
[93] Transcript, page 763
[94] Transcript, pages 679-685
[95] Transcript, page 707
[96] Transcript, page 737

in tandem with the surgeon, and were to some extent reliant upon the referral work, there needed to be a robust system in place in which patients were given objective information about the risks when consenting to surgery at Sportsmed. I find that there was no such system in place and that remains the case to this day.

15.18. Evidence was led from Mrs Walton's daughter, Sarah Walton, about a conversation which she had with Dr Bauze after her mother's surgery was planned, in which she allegedly raised her concerns about the surgery being performed at Sportsmed. When questioned in evidence about this, Dr Bauze maintained that he had no recollection of any such conversation and thought that if there had been such a conversation, he would have made a note about that[97]. Dr Bauze said that if a serious concern was raised, he would perform the surgery elsewhere, although he conceded that it was difficult for him to operate on private patients at the Lyell McEwin Hospital at that time[98].

15.19. According to Dr Bauze, there was no system in place which alerted him to the fact that his requested pre anaesthetic consult had not been conducted before the day of surgery.

15.20. On 20 October 2010 an operation list was faxed from Sportsmed to Dr Dennis and Dr Tziavrangos, who were regular anaesthetists for Dr Bauze at the time, in which Mrs Walton was listed for her total hip replacement. Although there was provision to include information under the heading 'alerts', no information was provided which might have alerted the anaesthetists to any relevant risks[99].

15.21. A late change in the operating list was faxed to the anaesthetists at 4pm on 25 October 2010, the day before the planned surgery, which meant that Mrs Walton would have her surgery earlier than planned and which meant that Dr Tziavrangos would no longer be anaesthetizing Mrs Walton.

15.22. It is clear that this type of late change to the list would have frustrated the intention of a pre anaesthetic consult which might have been carried out by a different anaesthetist had the request not been overlooked. Dr Bauze indicated that these days, where there

[97] Transcript, pages 673 and 761
[98] Transcript, page 760
[99] Transcript, page 692

have been preoperative assessments by his anaesthetists, the list is not altered[100]. I understood that there remain some difficulties in this area.

15.23. On the day of Mrs Walton's surgery Dr Bauze said that he discovered from Dr Dennis that there were letters concerning Mrs Walton from Dr Slimani and Dr Belperio pointing to anaesthetic difficulties for Mrs Walton. He said that he also learned that the pre anaesthetic consult had not been conducted. Dr Bauze said that he told Dr Dennis that if he regarded the risks too great for the surgery to proceed, it could be cancelled and performed elsewhere. According to Dr Bauze, Dr Dennis agreed to proceed as planned. I explore this topic in more detail when considering the evidence from Dr Dennis.

15.24. Plainly, it was inappropriate for Dr Dennis to be placed in this position, in circumstances in which Mrs Walton had been prepared for surgery and was moments away from being taken into the operating theatre. Notwithstanding this pressure, a successful spinal anaesthetic was administered and the surgery proceeded without incident. Having considered all of the available evidence, I find that it would be simplistic to suggest that because Mrs Walton managed to survive her surgical procedure uneventfully, the decision to operate at Sportsmed was justified. I refer in more detail to this argument when the opinions of expert witnesses are explored.

15.25. Mrs Walton was allocated to the HDU for the first period of post operative care. I detail her progress mainly through other witnesses, given that Dr Bauze had minimal involvement in her post operative care. The operation record completed by Dr Bauze has no detail about the procedure. The post operative orders were specified as 'routine'[101]. Having considered the opinions expressed by Dr Peter Thomas, to which I refer shortly, I find that those post operative orders were inadequate[102]. I find it surprising that despite expressing earlier concerns to Mr Walton's general practitioner about her post operative risk profile, Dr Bauze would consider that routine observations were sufficient.

[100] Transcript, page 705
[101] Exhibit C10a, page 42
[102] Transcript, page 1565

16. Evidence of Sarah Walton

16.1. Ms Walton outlined her concerns about how her mother was dealt with preoperatively and also post operatively at Sportsmed. This witness is a well qualified registered nurse who works in the critical care unit at Modbury Hospital. This witness has impressive qualifications and experience in intensive care nursing. In her affidavit Ms Walton stated that when her mother's surgery was first discussed with Dr Bauze, it was set to take place at the Lyell McEwin Hospital, where he worked, but that once Dr Bauze moved to Sportsmed, he was no longer able to perform the surgery at the Lyell McEwin Hospital. Ms Walton explained that she wanted it to be in a hospital like the Lyell McEwin Hospital which had an ICU because of concerns raised with her by Dr Sue Belperio, senior visiting anaesthetist at Modbury Hospital. Dr Belperio had experience with her mother previously and had written a cautionary letter for her mother to take to medical appointments[103]. The letter, which is undated, is addressed 'to whom it may concern' as follows:

> 'I have been asked to write to you by Patricia's daughter, who is a nurse at Modbury Hospital. I have been Patricia's anaesthetist on a number of occasions at Modbury and she has a number of anaesthetic and medical issues which may well dictate the choice of location for her upcoming joint replacement surgery.
>
> From the medical point of view, she should be in a location with a HDU/ICU facility for her post operative care, given that she is morbidly obese with a BMI of 49. She has associated obstructive sleep apnoea on CPAP, hypertension, bladder carcinoma, breast cancer in the past, and arthritis.
>
> If I were her anaesthetist, I would be aiming for regional anaesthesia in the form of a spinal anaesthetic. I have successfully achieved spinal anaesthesia for her on several occasions here, despite difficulty with identifying landmarks. It is therefore possible that a spinal may prove technically challenging. If she were then forced into a general anaesthetic, she has a past history of being unable to be intubated at North Eastern Community Hospital. We have always predicted at Modbury, that should she require intubation, it would certainly be difficult, and that we would require ready availability of such specialised difficult intubation equipment as a CMac or a glidescope and not all private hospitals have these. I have also successfully used a supreme size 3 LMA for her latest cystoscopy, although this would most likely be inappropriate for joint replacement anaesthesia. In addition, Patricia does have difficult venous access.
>
> I would strongly recommend that you organise a timely pre anaesthetic consultation with whoever is likely to be involved with her anaesthetic. I would be happy to be contacted should any of the points that I have raised require further clarification.'

[103] Exhibit C20

16.2. I note that this letter has made its way into Mrs Walton's Sportsmed medical records as well as Dr Cobain's records, however they do not appear to be included in Dr Bauze's records[104]. I assume however, that Mrs Walton may have shown him the letter or made a remark about it, given what Dr Bauze said prompted him to request a pre anaesthetic consult. If Dr Bauze had read that letter or was made aware of the contents when planning Mrs Walton's surgery, the deficiencies in his preoperative practice would be very concerning.

16.3. Sarah Walton said that she telephoned someone at Sportsmed to inquire about the nature of the facilities at the hospital in the event of an emergency and was assured that there was a very good nurse-led HDU facility. Ms Walton understood that meant that there would be highly skilled nurses in a HDU setting who would call in doctors when needed[105]. When Dr Bauze was made aware of her inquiry, he is said to have phoned her and told her that if he did not think that Sportsmed was suitable, he would not be doing the surgery there[106]. According to Ms Walton she told Dr Bauze that she believed her mother should be operated on in a facility where there were doctors overnight[107]. Whilst this witness conceded that she was no longer able to recall the exact nature of the conversations which she had with Dr Bauze, I find that she did convey her concerns with Dr Bauze about the nature of the facilities available in the event of an emergency at Sportsmed and Dr Bauze attempted to reassure her that the facilities were adequate. I find that Sarah Walton was an intelligent, well qualified close relative of Mrs Walton, who raised legitimate and serious concerns about the choice of hospital. The way in which Dr Bauze responded tends to suggest that his attachment to Sportsmed may have compromised his objectivity. Ms Walton said that notwithstanding her concerns, her mother seemed content and trusted her doctor.

16.4. According to Ms Walton, when she visited her mother in the HDU following surgery at Sportsmed, her mother was in 'agony' and that the nursing response was unsatisfactory. She recalled that the nurses were understaffed and rushing about, struggling to cope with the demands upon them[108]. Evidence from a senior nurse at Sportsmed has indicated that the HDU at Sportsmed has one nurse for four patients[109].

[104] Exhibit C10, page 11 and Exhibit C9a, page 11
[105] Transcript, page 431
[106] Transcript, page 456
[107] Transcript, page 451
[108] Transcript, page 444
[109] Transcript, page 601

16.5. On subsequent days when in the ward, Ms Walton maintained that the nurses still seemed very busy. When asked about the nature of her mother's asthma, she indicated that it was a mild form of asthma which to her knowledge was limited to the use of 'reliever' medications[110].

16.6. Whilst this witness was not called as an expert, I accept that she was capable of giving credible evidence about how an experienced, well qualified registered nurse might be expected to respond when faced with a post operative patient with her mother's known co morbidities, complaining of shortness of breath. Ms Walton said that she would take a full set of observations, perform an ECG, arrange for blood to be taken and call a doctor[111]. I bear in mind that this evidence may have been influenced by the benefit of hindsight.

17. Evidence of Dr James Dennis

17.1. In an affidavit prepared for this Inquest, Dr Dennis outlined his qualification as an anaesthetist obtained in 2005 and subsequent qualification and interest in cardiothoracic anaesthesia[112]. Whilst Dr Dennis was not as experienced as some other specialist anaesthetists who have appeared in this Inquest, he was an impressive witness nevertheless.

17.2. According to Dr Dennis, in 2010, he and Dr Tziavrangos shared an operation list performed by Dr Bauze at Sportsmed. This meant that Dr Dennis performed the anaesthetics for operations until about 12:30pm and then he handed over to Dr Tziavrangos while he went to another hospital. He explained that he received a faxed operation list from Sportsmed the afternoon before Mrs Walton's surgery. There were no alerts included on the list regarding Mrs Walton.

17.3. He said that on the following morning at Sportsmed someone handed him a letter from Dr Belperio as he was about to meet Mrs Walton who was prepared for surgery. In deciding how to proceed, Dr Dennis said that he took into account the letter, a history from Mrs Walton and information in her medical notes concerning her co morbidities[113]. He conceded in evidence that he did not obtain a history of asthma from Mrs Walton which was overlooked, partly because it was not directly relevant to

[110] Transcript, page 440
[111] Transcript, page 441
[112] Exhibit C26
[113] Exhibit C10a, page 38

the anaesthetic. Ultimately, Dr Dennis achieved a successful spinal block with a second attempt, using a long needle. His backup plan in case of emergency was to use a laryngeal mask airway. I accept that Dr Dennis performed his anaesthetic competently notwithstanding the challenges with Mrs Walton's large size and the absence of landmarks[114]. It appears that on the day of surgery, Mrs Walton's BMI was recorded as 46.3[115]

17.4. In evidence Dr Dennis said that he was surprised that he was not provided with a copy of Dr Belperio's letter earlier, and was not requested to conduct a pre anaesthetic consult. He said that it was not ideal having to accommodate Mrs Walton's issues in limited time whilst the patient was anxious about the surgery. Dr Dennis indicated that he would have preferred time to follow up some of the medical issues with other specialists before the surgery and to discuss alternative anaesthetics with the patient[116]. He said that he discussed his concerns with Dr Bauze in the tea room before surgery and indicated that Mrs Walton would need to be in the HDU. Dr Dennis thought that there was no point complaining about the situation at that time[117]. In response to questions about a letter generated by Dr Cobain following a preoperative consult with Mrs Walton, Dr Dennis said that if he had received this letter in advance of the surgery, he would have arranged to conduct a pre anaesthetic consult. Dr Dennis said that he would have invited a family member to attend as well, to discuss the anaesthetic and the risks of having the procedure cancelled[118].

17.5. Dr Dennis stated that he did not have a concern about administering the anaesthetic at Sportsmed, however he had a backup plan to cancel the surgery if the spinal block failed.

17.6. Because Dr Bauze added an extra patient to his operating list, Mrs Walton's surgery was delayed which meant that Dr Dennis had to hand her over during surgery to Dr Tziavrangos at 12:30pm after finalising instructions to the nurses for post operative orders. Dr Dennis said that he was aware that Mrs Walton was tolerant to opiates when ordering her post operative analgesia, the details of which were set out in the PCA documentation in the medical notes. Fentanyl was administered via a PCA infusion to supplement the 20mg oxycontin which Mrs Walton continued to receive

[114] Exhibit C26
[115] Exhibit C10a, page 17
[116] Transcript, page 890
[117] Transcript, page 856
[118] Transcript, page 859

twice daily. Because of the problems with IV lines, Dr Dennis said that he inserted two of them as a precaution. According to the drug infusion chart, the PCA continued for about 22 hours, until 1pm on 27 October 2010[119].

17.7. According to Dr Dennis, his involvement with Mrs Walton tapered off after 24 hours which he said was normal, given his role as the anaesthetist. He acknowledged that he made a telephone order for tramadol for pain relief, which he conceded he would not have made had the nurses informed him that Mrs Walton did not tolerate that drug.

17.8. Mrs Walton's observations were recorded on a chart, said to be introduced at Sportsmed in 2010, which required a patient who was receiving opioid medication to be observed when the drug was given and again one hour later. The record includes recordings of pain score, sedation score and respiration rate. I note that on the last entry on this page, which was on 30 October 2010, and some three hours after morphine was administered, the observations were delayed. The respiration rate is noted to be 18, but there is no entry for pain or a sedation score. The word 'asleep' has been written across both columns[120]. This entry tends to suggest that the nurses caring for Mrs Walton failed to appreciate the relevant risks of this type of medication in these circumstances, where the patient was obese, suffered sleep apnoea and had a painful operation. Whilst in Mrs Walton's case it became clear that she was not suffering from the degree of respiratory depression which developed in Mr Ryan, the lack of awareness is a concern[121].

17.9. According to Dr Dennis, the risk of respiratory depression in Mrs Walton was exacerbated by the opioid pain relief which she was receiving. When commenting on opinions expressed in a report by Dr Williams on this topic, Dr Dennis agreed that by the fifth post operative day Mrs Walton had received a lot of opiates considering her co morbidities and that this contributed to the risk of poor pain control and increased opioid related side effects[122]. Dr Dennis believed that achieving pain control would have been challenging.

17.10. Dr Dennis was asked about how he might have responded to information by telephone from a nurse on day six that Mrs Walton was complaining of 'chest tightness',

[119] Exhibit C10a, page 76
[120] Exhibit C10a, page 61
[121] Transcript, page 822
[122] Transcript, page 837

bearing in mind her co morbidities and the fact that she described it as feeling like an asthma attack. This witness said that he would have been thinking 'cardiac', despite what she said about it feeling like asthma and having no history of angina[123].

18. Evidence of Dr William Cobain

18.1. Dr Cobain is a specialist general physician with many years experience who has worked at the RAH from 1988 until 2000. Since that time he has worked in private practice and has been a member of a number of committees at St Andrews Hospital[124].

18.2. A significant proportion of his work concerns preoperative consults for surgeons operating at Sportsmed and elsewhere. Dr Cobain has developed a regular presence at Sportsmed and is relied upon by surgeons to manage post operative medical issues including supervision of pain control. In this regard Dr Cobain has made himself available on-call for Sportsmed after hours, given that there are no medical practitioners on site overnight.

18.3. According to Dr Cobain he was first consulted in relation to Mrs Walton in March 2004 before a planned surgical procedure at St Andrews Hospital. He was advised that Mrs Walton had been diagnosed with sleep apnoea which was being managed by Dr Ral Antic. Dr Cobain was provided with a copy of a letter from Dr Jocelyne Slimani from specialist anaesthetic services, as follows:

> 'Mrs Patricia Walton presented to North Eastern Community Hospital - Campbelltown - for a hysteroscopy and cystoscopy on the 20/1/04 and had a failed intubation.
>
> A rapid sequence induction with cricoid pressure using thiopentone with suxamethonium was used. Mouth opening was more limited as compared with preoperative assessment and laryngoscopy showed a grade 3 larynx.
>
> Due to rapid desaturation, a laryngeal mask was inserted after two attempts at intubation.
>
> Her saturation remains around 90% while breathing sevoflurane in 100% oxygen and returned to 97% on cessation of anaesthetic gas.
>
> The procedure was abandoned as it was considered not safe to proceed.
>
> Mask ventilation was difficult despite insertion of a Guedel airway and nasopharyngeal airway.
>
> I hope that this letter will be of some help should the patient present for another operation in the near future.'

[123] Transcript, page 844
[124] Exhibit C9b

18.4. Dr Cobain ordered a number of blood screens, a chest X-ray, which revealed a slightly enlarged heart, ECG and echocardiogram, both of which were unremarkable. Mrs Walton's recorded weight was 142 kilograms[125]. Dr Cobain sent a letter outlining the results of his assessment to Dr D Catt, care of the ICU at the RAH.

18.5. One month before the planned hip replacement at Sportsmed in 2010, Dr Cobain assessed Mrs Walton again following a referral from Dr Bauze[126]. According to Dr Cobain, whilst he had the benefit of his earlier assessment, he was not provided with a copy of Dr Belperio's letter at the time of his consult. Had he received this letter, Dr Cobain stated that he would have ensured that arrangements were made for a pre anaesthetic consult.

18.6. Dr Cobain summarised his assessment in a letter sent to Dr Bauze, with copies to the nurse manager, Ms Zilm of Sportsmed, general practitioner Dr Platis and to 'Adelaide Anaesthetic Services'. This last recipient was named in error[127]. The letter should have been sent to the practice where the anaesthetists who worked with Dr Bauze practised, which was called 'Specialist Anaesthetic Services'[128]. I find that because Dr Cobain knew about previous anaesthetic issues with Mrs Walton, he should have suggested that an anaesthetic consult be organised.

18.7. In Dr Cobain's letter, which was an amended and updated version of his earlier letter to Dr Catt, Mrs Walton's medical co morbidities and peri and post operative risks were summarised as follows:

> '1. Medical co morbidities include increased BMI, ex-smoker, adverse drug reactions, herbal supplement use, anaesthetic related difficulties, asthma, allergic rhinitis, urinary tract infections, TCC bladder, hypertension, psoriasis, sleep apnoea and breast cancer.
>
> 2. Peri-operative medical risks increased because of BMI, adverse drug reactions, anaesthetic difficulties and sleep apnoea.
>
> 3. VTE risks increased because of BMI and theoretically her bladder and breast cancer.'

[125] Exhibit C9a, pages 7, 21 and 37
[126] Exhibit C9a, page 6
[127] Exhibit C9a, page 25
[128] Exhibit C26a

Whilst Mrs Walton's weight was not specified in the letter, Dr Cobain indicated that her BMI was >40. Dr Cobain concluded the letter as follows:

> '4. Relevant investigations are requested.
>
> 5. She will cease herbal supplements 10 days preoperatively.
>
> 6. I am happy to review her post-operatively at your discretion.'

18.8. According to Dr Cobain, when he assessed Mrs Walton she was unaccompanied and he was not made aware of any concerns anyone had about the facilities at Sportsmed in the event of an emergency. I am unable to find whether Dr Cobain had a discussion about the suitability of Sportsmed for her surgery given her past history and failed intubation. In my view, because he was very familiar with Sportsmed, he should have alerted Mrs Walton to how her medical issues might be managed in the event of an emergency after hours.

18.9. I accept that whilst the decision for surgery at Sportsmed was not one to be made by Dr Cobain, it was implicit in the request for preoperative assessment that he would consider that question in any event and convey his views about that to the referring surgeon. Because Mrs Walton was regarded as a higher risk patient with many known co morbidities, I find that this important question needed to be specifically addressed and documented by the surgeon and the physician.

18.10. I do not detail the nature of preoperative investigations ordered by Dr Cobain. I accept that they were appropriate, bearing in mind Mrs Walton's known co morbidities at that time. I find that on the basis of the available information and the status of relevant guidelines, no further cardiac investigation was warranted at that time.

18.11. Once Mrs Walton had her surgery, Dr Cobain's assistance was sought regarding management of her high blood pressure around 11pm on 27 October 2010. He gave a telephone order for novasc 5mg to be administered one hourly if Mrs Walton's systolic blood pressure reading was over 200[129]. Dr Cobain stated that when blood

[129] Transcript, page 911

pressure is driven up by pain it is very difficult to manage with anti-hypertensive drugs. He described the challenge as follows:

> 'We need to use pain relieving drugs. That's what we are struggling with, along with not wanting to interfere negatively with her breathing function.' [130]

18.12. If Dr Cobain was alert to the challenges posed by Mrs Walton's co morbidities, it is difficult to understand why he was, and remains, resistant to the opinions which favoured admission to a hospital which could have managed these issues more effectively.

18.13. Dr Cobain reviewed Mrs Walton at Sportsmed at 7:30am the following morning. He decided to investigate the question of cardiac ischaemia by ordering an ECG and blood screen for biochemistry and troponins. The medical notes indicate that the troponin levels were within normal limits, however there is no evidence in the notes that the request for an ECG was carried out[131]. Given the nature of Dr Cobain's handwriting, I suspect that there may have been a problem with interpretation of his notes[132].

18.14. According to Dr Cobain he saw Mrs Walton each day to review her blood pressure and related issues which included her pain management. There was said to be an improvement in both of these issues on Friday 29 October 2010. On the following day Mrs Walton's blood pressure was said to be 'labile', but according to Dr Cobain this was not worrying. In light of evidence from other witnesses on this topic, I find that the high blood pressure should have caused more concern than it did. Adjustments were made to frusemide and zanidip medications and the nurses were instructed to 'encourage analgesia'[133].

18.15. On the following day, 31 October 2010, Dr Cobain assessed Mrs Walton at 11am. He noted that she was suffering from troublesome nausea and that her blood pressure was fluctuating. He decided to give an antiemetic for nausea and to reduce her narcotics[134]. Mrs Walton's O2 sats were recorded as 84% on air at 10am, improving to 97% with administration of two litres of oxygen[135]. The medical records indicate

[130] Exhibit C9, page 7
[131] Transcript, page 927
[132] Exhibit C9d
[133] Transcript, page 921
[134] Transcript, page 921
[135] Exhibit C10a, page 56

that PRN[136] orders for morphine and oxycodone were ceased on 30 October 2010, however the regular twice daily order for oxycontin 20mg remained in place and was administered at 8am and at 9:30pm on 31 October 2010. Whilst this topic appears to have been overlooked in evidence, I assume that the latter order was maintained to avoid issues with sudden withdrawal of opiates[137].

18.16. Having heard evidence from other expert witnesses, I find that when Dr Cobain assessed Mrs Walton at 11am, it would have been prudent to recognise that Mrs Walton's hypertension and pain management required a higher level of treatment and monitoring than what was available at Sportsmed. I find that a timely transfer to another hospital with better medical and nursing support may have resulted in a better outcome for Mrs Walton.

18.17. Dr Cobain acknowledged that at about 7:30pm that evening he was contacted by a nurse who reported an issue with Mrs Walton. He relied upon the entry in the medical notes which he believed contained the information he was given, which was that Mrs Walton had complained of wheeziness and shortness of breath on exertion, but that there was no complaint of chest pain. He added that he was told that Mrs Walton's observations were normal and that the description given was that it felt exactly like an asthma attack[138].

18.18. Having considered all of the evidence on this topic, I find it likely that the nurse rang Dr Cobain, not for the purpose of having him exercise his judgment about how to handle the matter, but more in the form of a request for an order for medication to manage symptoms which the nurse believed were related to asthma. One can understand how this assumption might have been made given Mrs Walton's history of mild asthma. Given that none of the nurses were concerned about Mrs Walton's condition, it seems likely that if there had been an order written in Mrs Walton's notes for asthma medication, Dr Cobain may not have been notified at 7:30pm to discuss the matter.

18.19. When questioned about whether he had been informed during this phone call that Mrs Walton had complained of 'chest tightness', Dr Cobain indicated that he had no recollection of being told that. He said that if he was told about a complaint of chest

[136] As required
[137] Exhibit C10a, pages 60 and 68
[138] Transcript, page 926

tightness, he would have considered other differential diagnoses including a cardiac cause, however he indicated that he would not automatically order an ECG and troponins at that time of night and at that stage of her admission[139].

18.20. It was conceded however, that there was no mechanism for Dr Cobain to read an ECG remotely and so unless he had significant concerns which would cause him to come back to the hospital, it would have had to wait until morning[140].

18.21. During his evidence, Dr Cobain seemed a little uncertain about what information was conveyed to him by phone at 7:30pm, which is not surprising given the passage of time. He stated that he was on-call 24 hours a day, seven days a week and was called daily by staff at Sportsmed and by doctors elsewhere. He emphasised that the nurses at Sportsmed were expected to report any significant deterioration in a patient to him. According to Dr Cobain, where there are concerns with a patient necessitating a medical transfer, he would act upon that and has done so 'frequently'[141].

18.22. When asked if he considered obtaining the details of the symptoms directly from Mrs Walton over the phone to clear up any possible ambiguity, Dr Cobain indicated that it was not his practice to speak directly to patients in that way[142].

18.23. He said that as a result of information provided to him by the 'experienced' nurse, he prescribed ventolin and seratide for Mrs Walton[143]. It seems clear that Dr Cobain did not regard Mrs Walton's situation at 7:30pm as requiring his attendance because the nurse was not concerned about her.

18.24. Having considered the evidence on this topic I find that Dr Cobain was not informed by the Ms Leonard that Mrs Walton's symptoms included 'chest tightness'. However, his instructions to the nurse during that call around 7:30pm that Mrs Walton was to commence fluid restriction and daily weighing, indicates that Dr Cobain was considering a cardiac cause for her symptoms in any event.

18.25. Dr Cobain referred to medical literature about assessing high risk obese patients preoperatively with more certainty. According to Dr Cobain, an abstract in 'Circulation' in July 2009 concerned the major increase in obesity in the USA with

[139] Transcript, pages 927, 929, 930 and 963
[140] Transcript, page 937
[141] Exhibit C9
[142] Transcript, page 974
[143] Transcript, page 926

increased risk of co morbid conditions. The article suggests that physical examination and ECG often underestimate cardiac dysfunction in obese patients. A scientific advisory group was said to be established to provide cardiologists, surgeons, anaesthetists and others with recommendations for 'preoperative cardiovascular evaluation, intraoperative and peri operative management and post operative cardiovascular care of this increasingly prevalent patient population'. Dr Cobain understood that the final paper is yet to be published[144].

18.26. Dr Cobain was asked to comment upon some of the opinions expressed by Drs Williams, Hockley and Thomas who analysed the way in which Mrs Walton was managed at Sportsmed. Dr Cobain rejected the opinion expressed by Dr Hockley that Mrs Walton's death was preventable at Sportsmed. He also disagreed with Dr Williams' opinion that Mrs Walton should have been operated on in a hospital with ICU backup facilities. Dr Cobain maintained that her risks were not so high as to require surgery to be performed elsewhere[145]. Dr Cobain argued that ICU backup was unnecessary and that Mrs Walton's demise was unpredictable because her triple vessel disease was unknown[146].

18.27. He considered that there were many patients who have similar types of risks and that if they are managed with 'experienced surgical, medical and nursing care, the majority by far have no life threatening post operative complications'[147]. In that regard Dr Cobain had high praise for the nurses at Sportsmed whom he described as 'very, very competent'[148]. In evidence he added that he considered the nurses to be 'very very experienced' and that the phone calls from them were 'sensible', 'balanced' and 'proportional to what is happening'[149]. Having considered the evidence from a number of witnesses, including some of those nurses, I find that Dr Cobain's assessment of the nurses at Sportsmed was flattering, but quite unrealistic.

18.28. Given the risks inherent in administering narcotics to Mrs Walton, and the suggested link between post operative pain, hypertension and acute coronary syndrome, it was the view of at least two experts that a ketamine infusion might have been worth considering to manage her pain. Dr Cobain disagreed with this suggestion and

[144] Exhibit C9g and Transcript, page 1001
[145] Exhibit C9
[146] Transcript, page 974
[147] Transcript, page 1543
[148] Exhibit C9
[149] Transcript, page 937

maintained that in his experience, ketamine is rarely used and, if it had been used, it would not have altered the outcome. Having considered all of the evidence on this topic, I find that a more advanced pain management strategy was called for to manage Mrs Walton's ongoing pain than was available at Sportsmed under Dr Cobain's supervision as a visiting physician. I am persuaded that, contrary to Dr Cobain's view about ketamine, the drug has a useful role to play as a non-opioid medication, however its administration required IV access and skilled supervision, which was not available at Sportsmed.

18.29. Overall, I found Dr Cobain to be a very experienced and diligent physician, and yet at the same time he appeared unreasonably reluctant to concede that the delivery of care model used at Sportsmed for medical management of complex post operative patients was potentially unreliable and inadequate. In my view it is incumbent upon physicians who offer their services in these small private hospitals to recognise the limitations of care and support available and to ensure that they communicate their views about this well in advance to patients, referring surgeons (or general practitioners) and preferably to any intended anaesthetist.

19. Nursing care of Mrs Walton

19.1. Evidence of Registered Nurse Kate Totaro

Ms Totaro spoke of her involvement in Mrs Walton's care on 31 October 2010 during the morning shift[150].

19.2. Mrs Walton was said to have felt light headed and tired after walking to the shower, which Ms Totaro thought was unusual given that Mrs Walton was due for discharge the following day. This nurse described Mrs Walton as being very drowsy during the day. Ms Totaro said Mrs Walton's daughter expressed concern about her mother. The endone, tramal and panadeine forte were stopped by Dr Cobain and nurses were instructed to manage Mrs Walton's pain with panadeine or panadol instead[151].

[150] Exhibit C21 and Transcript, page 458
[151] Exhibit C10a, page 27

19.3. Registered Nurse Marie Hambling

Registered Nurse Hambling looked after Mrs Walton during the afternoon shift on 31 October 2010 until 10:30pm. Because of the post operative requirement that patients be encouraged to exercise on a regular basis, Mrs Walton's nasal specs used to supply additional oxygen were removed at about 7:30pm to enable her to walk with a frame along the corridor. According to this witness, while she supervised the walk Mrs Walton became very short of breath and complained of 'chest tightness'[152].

19.4. Whilst not being recorded in the notes, Ms Hambling stated in her affidavit that she recalled Mrs Walton describing the sensation as feeling like she was having an asthma attack[153]. The full entry in Mrs Walton's notes is as follows:

> '1. Nausea settled, minimal diet taken. Tolerating fluids.
> 2. Medications given as ordered.
> 3. Pain controlled with oral analgesia.
> 4. Dressing dry.
> 5. Remains hypertensive, afebrile. Became very short of breath whilst ambulating with some chest-tightness. Dr Cobain notified commenced on ventolin, seretide 1.5L fluid restriction and daily weigh. Remains on 2L O2 via nasal specs as desaturating on air.
> 6. Voiding in toilet bowels open today.
> 7. Skin intact, TEDS in situ.
> 8. Ambulated ½ length of corridor with frame. Exercises not attended this pm as feeling very "flat and tired". Sat out for 1 hour.
> 9. Patient very sleepy and flat today.
> 10. Please do ECG in am.
> 11. Not for D/C as yet.' [154]

19.5. Nurse Hambling said that she notified the hospital coordinator, registered nurse Helen Leonard after Mrs Walton's reaction to her walk along the corridor. After Ms Leonard had called Dr Cobain about it she was instructed to administer a ventolin nebuliser to Mrs Walton. After administering the ventolin, Ms Hambling said that she left Mrs Walton resting in bed while she attended other patients and when she returned Mrs Walton said that she was feeling much better.

[152] Exhibit C23, Exhibit C10, page 27 and Transcript, page 551
[153] Exhibit C23
[154] Exhibit C10a, page 27

19.6. Mrs Walton's blood pressure reading at 6pm was recorded as $^{170}/_{70}$. At 10pm the reading had increased to $^{190}/_{70}$ with O2 sats at 88% on air, but improving to 100% with administration of O2.

19.7. From the medication records it seems likely that this nurse, supervised by Ms Leonard, administered 20mg of oxycontin to Mrs Walton at 9:30pm, but unfortunately the topic was not explored during her evidence. This witness struggled during her evidence to elaborate beyond the matters covered in her affidavit, however I find that her note recorded at 9:45pm which described Mrs Walton's complaint to her, and which includes the expression 'chest tightness', was made at a time when it was still fresh in her mind and therefore is likely to be accurate.

19.8. Evidence of Registered Nurse Helen Leonard

Whilst this witness explained that she was working as the hospital coordinator during the same afternoon shift as Ms Hambling, I formed the view that her level of qualification and experience was relatively limited and was not much different to that of Ms Hambling. According to Ms Leonard, she was informed by Ms Hambling that Mrs Walton was unwell with shortness of breath and 'wheeziness'. Ms Leonard stated that she spoke to Mrs Walton about it and was told that it felt like she was having an asthma attack. In evidence, she conceded that should could not remember hearing Mrs Walton wheeze. A set of observations were said to be taken by Ms Leonard, but were not recorded in the notes. I find that if a doctor had been available at the hospital, he or she would have been able to examine Mrs Walton to confirm the accuracy of this diagnosis.

19.9. This witness claims that when she spoke to Mrs Walton she denied having jaw or chest pain. Because there was no medication ordered for her asthma and Mrs Walton had not brought her puffer medication into hospital with her, Ms Leonard said that she called Dr Cobain to obtain a telephone order for ventolin.

19.10. The entry in Mrs Walton's notes at 7:25pm made by Ms Leonard is as follows:

> 'Patient c/o "wheeziness" and "SOBOE", nil complaints of chest pain – all observations within normal limits. Pt states that it "feels exactly like an asthma attack". Dr Cobain notified – for ventolin neb 5mg 6/24 except whilst asleep, seretide BD 2 puffs. Pt to commence on 1.5 L fluid restriction. For weight measurements tonite (sic) – daily. Dr Cobain will R/V tomorrow mane.' [155]

[155] Exhibit C10a, page 35

19.11. Ms Leonard seemed quite vague about significant aspects of the events which occurred that evening and therefore I find that some of her evidence is potentially unreliable. She was unable to recall what she reported to Dr Cobain, but stated that she would have answered Dr Cobain's questions if asked about chest pain or chest tightness. She conceded that Ms Hambling might have told her that Mrs Walton complained of 'chest tightness', but was unable to recall.

19.12. Having regard to Ms Hambling's entry in the notes that Mrs Walton was 'very short of breath whilst ambulating, with some chest tightness' I find that this information should have been obtained by Ms Leonard and conveyed to Dr Cobain.

19.13. According to Ms Leonard, if she had been requested to do an ECG, she would have been capable of doing that, however she would not be able to interpret the results. Evidence from the various witnesses associated with Sportsmed indicates that there was no way of transmitting an ECG reading to Dr Cobain after hours and that remains the situation.

19.14. Ms Leonard said that she looked in on Mrs Walton later and thought that she seemed comfortable. I find that because of her inexperience, Ms Leonard did not approach the situation with sufficient caution.

19.15. Ms Leonard said that she saw no need to increase observations of Mrs Walton from the routine four hourly observations after 7:30pm. No doubt Ms Leonard did the best she could within the limits of her capacity. A more astute nurse might have recognised that even though Mrs Walton thought she was having an asthma attack, she should have been examined by a doctor to make a thorough assessment of the situation, especially when one considers that a complaint of shortness of breath may indicate a number of post operative complications including pulmonary embolus as well as an ischaemic event.

19.16. It is especially important that nurses are capable of taking this type of initiative where there are no medical officers on site. Doctors who receive information from nurses after hours by telephone need to be alert to the potential shortcomings of the information being conveyed to them when determining whether they can defer further investigation until the morning. I am confident that if Ms Leonard indicated to Dr Cobain at 7:30pm that she was worried about Mrs Walton and wanted him to assess her, Dr Cobain would have come to the hospital.

19.17. Evidence of Enrolled Nurse Patricia Maloney

Ms Maloney took over responsibility for nursing care of Mrs Walton from Ms Hambling for the overnight shift. Because she was an enrolled nurse, rather than a registered nurse, I am not confident that she would have understood the significance of Ms Hambling's entry in the notes about Mrs Walton's complaint of 'chest tightness' earlier that evening.

19.18. There were said to be only three nurses on duty at the hospital that evening. According to Ms Maloney's affidavit, Mrs Walton rang her bell at about 2:55am for help to go to the bathroom. There is an inconsistency between the timing of this incident and notes made by Ms Conroy, who puts this incident at 2:30am.

19.19. Ms Maloney said that after returning from the bathroom Mrs Walton seemed a bit short of breath. Ms Maloney said that she administered a ventolin nebuliser again at 3:15am in accordance with Dr Cobain's telephone order at 7:30pm. This witness had a very poor recollection of events concerning Mrs Walton's deterioration and was not able to elaborate with any degree of certainty[156].

19.20. Evidence was received from other witnesses concerning revised systems implemented by Sportsmed management, whereby enrolled nurses are now 'buddied' with registered nurses. All patients are said to have a registered nurse either caring for them, or an enrolled nurse like Ms Maloney caring for them, but under supervision of a registered nurse. I refer to other changes at Sportsmed later in these Findings.

19.21. Evidence of Registered Nurse Julie Conroy

This nurse was the night coordinator for the night shift on 31 October 2010 at Sportsmed between 10pm and the following morning. She was the most senior person available at Sportsmed in the event of an emergency overnight. She confirmed that there were three nurses on duty and she had four patients of her own to care for[157].

19.22. This witness was alerted to a problem with Mrs Walton being short of breath at 2:30am after going to the toilet. According to Ms Conroy, between 2:30am and 3:15am, Mrs Walton told her that she felt better, however when checking her at 3:15am, she said that she felt much worse and that her chest felt 'heavy'. The blood pressure was documented at $^{220}/_{90}$ and O2 sats 98% after Ms Conroy replaced the

[156] Exhibit C28 and Transcript, page 1008
[157] Transcript, page 601

nasal specs with a face mask running at ten litres. Ms Conroy recorded in the notes 'short of breath (not wheezy) ventolin given and norvasc 5mg at 3:15am'. According to Ms Conroy, she removed the oxygen while administering the ventolin to Mrs Walton. I assume that the administration of ventolin took at least several minutes[158].

19.23. One might have expected Ms Conroy to suspect that if there was shortness of breath, without wheezing and a complaint of a heavy chest, Mrs Walton's symptoms were very concerning and required urgent medical intervention. I find that whilst Ms Conroy was very attentive to Mrs Walton, she failed to recognise the urgency of the situation. Ms Conroy recorded observations again at 3:40am, when the blood pressure was $^{200}/_{100}$, O2 sats were down to 64% and respiration rate 26 per minute[159].

19.24. According to the medical notes, Ms Conroy telephoned Dr Cobain ten minutes later at 3:50am and, while on the phone, Mrs Walton's condition deteriorated dramatically. When she went back to her, the O2 sats were said to be 50% on ten litres. Ms Conroy said that she then organised for the ambulance to be called. Ms Maloney was attending other patients upstairs when Mrs Walton collapsed, however Ms Edwards had been asked to observe Mrs Walton while Ms Conroy was phoning Dr Cobain. Ms Conroy commenced hand ventilation with a bag and mask because Mrs Walton was said to have stopped breathing[160].

19.25. When the ambulance officers asked for Mrs Walton's history, someone is said to have mentioned that she reported chest pain at 2:30am. When questioned about this, Ms Conroy denied giving that history[161]. Ms Conroy also stated that very soon after arriving, intubation was attempted by one of the paramedics and that it took several attempts, taking between 20 and 30 minutes to achieve[162]. I return to this topic when considering the evidence of ambulance officers.

19.26. This witness was questioned about the nature of training and skill level of nurses at Sportsmed at that time. Ms Conroy strongly defended the expertise of nurses at Sportsmed. She maintained that Mrs Walton was fortunate with the nurses who were on duty, emphasising that most of their senior nurses were on duty that evening[163]. I bear in mind that Mrs Walton was being cared for by enrolled nurse Ms Maloney

[158] Exhibit C10a, pages 55 and 68 and Transcript, page 607-618
[159] Exhibit C10a, page 55
[160] Transcript, pages 611 and 641
[161] Transcript, page 622
[162] Transcript, pages 616 and 632
[163] Transcript, page 660

overnight, who in my view could not have been regarded as a senior nurse. I find that, contrary to Ms Conroy's testimony, the nurses were ill-equipped to deal with the challenges posed by Mrs Walton's deteriorating condition that evening. My finding on this topic is informed by evidence which I have heard and accept from several of the expert witnesses who have contributed to this Inquest.

19.27. I find that because there was no proper assessment made by a medical officer earlier in the evening, the significance of Mrs Walton's gradual deterioration was unrecognized from about 7:30pm onwards. This meant that three nurses with limited skill and relevant experience were required to deal with a collapsed morbidly obese patient, who needed urgent resuscitation and transfer to the RAH. Whilst I accept that one could not predict that Mrs Walton would suffer a cardiac ischaemic event during her post operative phase at Sportsmed, it was entirely predictable that because of her known co morbidities, she would have challenging and potentially complex medical issues to manage. If not managed appropriately, there was always the risk that she would deteriorate. It was also clear that in the event of an emergency, she would be difficult to resuscitate. The paramedics who have given evidence in this Inquest have explained the various problems regularly encountered with resuscitation of obese patients, particularly when attempting to insert an IV line, intubating, ventilating the patient and also when attempting to move the patient. The expert witnesses have also emphasised these problems posed by morbidly obese patients.

19.28. I refer to evidence from expert witnesses shortly on the topic of advances in patient management which involve early identification and management of the deteriorating patient, and how this might have altered the outcome for Mrs Walton, had she been managed post operatively in another hospital.

20. South Australian Ambulance Service attendance upon Mrs Walton

20.1. Evidence of Amelia Brazil

Ms Brazil was asked to prepare an affidavit in April 2013[164] concerning her attendance at Sportsmed to assist with Mrs Walton's resuscitation. I proceed on the basis that Ms Brazil relied heavily upon her notes of what occurred that day, given the passage of time. I am satisfied that because the notes were made when the facts were fresh in her memory after handover of Mrs Walton at the RAH, that they are a reliable

[164] Exhibit C35

account of what took place[165]. In forming this view I also bear in mind the nature of this witness's evidence and her capacity to give detailed and credible explanations for her actions.

20.2. Ms Brazil has a diploma in Paramedics and has been a paramedic for 13 years. She has undertaken further studies in intensive care paramedics which qualified her to perform intubation only one week before the call out to resuscitate Mrs Walton. The nature of the training undertaken was detailed by this witness and appeared to be of high quality and intensity[166].

20.3. According to Ms Brazil she arrived at Sportsmed at 3:57am with her co-worker Jonny Chien in response to a call received at 3:52am. The information initially conveyed from Sportsmed was said to be that the patient was 'conscious and breathing'. When she asked for a history from the nurses, Ms Brazil said that she was told that at 2:30am Mrs Walton complained of shortness of breath and chest pain.

20.4. Ms Brazil said that when they first saw Mrs Walton she called for a second ambulance and crew which she said was necessary to be able to move Mrs Walton because of her size. Mrs Walton was unresponsive and had mottled peripheries and unrecordable O2 sats. The pulse rate was 35-45 per minute and weak. Ms Brazil took over ventilation from a nurse, inserted an oropharyngeal airway and continued ventilating until the pulse improved to 65 within two minutes. According to Ms Brazil, she did not encounter any gagging when doing this. She instructed Mr Chien to put defibrillation pads in place in anticipation of cardiac arrest.

20.5. According to Ms Brazil she knew that it would be very difficult to achieve adequate ventilation in Mrs Walton unless she was able to put the airway in as well as doing a 'good jaw lift'. This witness explained that Mrs Walton's obesity and 'bull neck' made it difficult to get a good seal when ventilating with a mask. From the available records, it can be estimated that at least ten minutes passed between Mrs Walton's sudden drop in O2 (when the ambulance was called) to the time when Ms Brazil established quality ventilation again with the use of an airway. It is not possible to estimate the degree of hypoxia which might have been suffered during this period, however I find that the nurses at Sportsmed struggled to deal with the situation during this critical phase.

[165] Exhibit C10
[166] Exhibit C35

20.6. The ambulance record indicates that the second crew arrived at 4:05am. Mrs Walton became asystolic shortly after they arrived, requiring cardiac compressions. A 12 lead ECG was recorded once Mrs Walton's pulse returned which showed ST depression in the inferior leads, indicating ischaemia to that part of the heart. Unfortunately Mrs Walton arrested a number of times. One of the crew did compressions and another assisted Ms Brazil with the airway. Mr Chien was unable to achieve IV access because of Mrs Walton's obesity. Eventually, Mr Pritchard from the second crew was able to find a vein at 4:27am. When IV access had been achieved, adrenalin and atropine were administered[167].

20.7. This witness explained in detail how she prepared to intubate Mrs Walton. It is not necessary to repeat it here. Ms Brazil was unable to clarify whether she managed to intubate Mrs Walton before or after the first cardiac arrest. The ambulance record did not assist in that regard. She conceded that Mr Pritchard helped prepare the procedure by adjusting the height of the bed, removing the bed head and using a BURP technique to assist Ms Brazil obtain a view of the vocal cords. Ultimately, Ms Brazil said that she did not have any trouble intubating Mrs Walton which surprised her, given Mrs Walton's size and physical features.

20.8. Ms Brazil rejected the suggestion that she achieved intubation only after multiple attempts and that it took between 20 and 30 minutes. Having heard all the evidence on this topic, I accept Ms Brazil's version without hesitation. She was a very impressive witness. I find that Ms Conroy's account is unreliable and consider that she may have confused the careful preparation to intubate as actual attempts to intubate. She may also be thinking of the prolonged efforts of Mr Chien and then Mr Pritchard to achieve IV access.

20.9. One issue raised in the various opinions expressed about the resuscitation efforts was whether it was necessary to intubate Mrs Walton prior to transfer to the RAH. Transfer of very ill patients like Mrs Walton is said to be very dangerous. One of the potential problems is the risk of vomiting and aspiration which was said to be significant and unmanageable when the patient is moving from the bed to the stretcher and also en route to the RAH. I find that Ms Brazil and some of the other paramedics who were witnesses during the Inquest gave credible explanations for attempting to intubate prior to transfer. I bear in mind the risks relating to sudden deprivation of

[167] Exhibit C10b, page 43

oxygen during prolonged attempts. I find that the decision to intubate Mrs Walton and attempt to stabilise her before transferring her to the RAH was appropriate in the circumstances.

20.10. Mrs Walton's cardiac output was said to be regained three times at Sportsmed, but only for about one minute before she re-arrested. Transferring Mrs Walton to the ambulance stretcher was said to be difficult because of her size and the constraints of the small hospital room. After a slide was used to move her onto the stretcher, Mrs Walton was transferred to the RAH where she arrived at 5:07am.

20.11. Evidence of Giles Pritchard

This witness also assisted the Inquest and gave an account of events generally consistent with Ms Brazil, to whom he is now married. He was also an impressive witness. He explained the difficulty inserting an IV cannula into Mrs Walton and that he had to 'dig around' for a while because he could not see a vein[168].

21. Evidence of Dr Daryl Williams

21.1. Dr Williams was called by counsel assisting to review the circumstances leading to Mrs Walton's death and express opinions concerning her peri operative management in particular. Dr Williams is an honorary professor at the University of Melbourne and is currently the Director of Anaesthesia and Pain Management at the Royal Melbourne Hospital (RMH). He is also the Divisional Director of Surgery, Peri operative, Trauma and Surgical Oncology. Dr Williams has published extensively on a range of topics concerned with anaesthesia, including two publications with relevance to this Inquest, namely 'Preoperative assessment for obstructive sleep apnoea and the prediction of postoperative respiratory obstruction and hypoxaemia' published in 2008 and 'Post-operative assessment of analgesia and respiratory events in patients with symptoms of for (sic) obstructive sleep', published in 2009. Dr Williams has also written a chapter in 'Textbook of Surgery' on 'Anaesthesia and pain relief'[169].

21.2. This witness expressed a number of views after reviewing the medical records, affidavits of other witnesses and transcripts of evidence. I was impressed with the expertise of this witness and the comprehensive manner in which he expressed his

[168] Transcript, page 1333
[169] Exhibit C27a

opinions. I am mindful that, unlike some of the other expert witnesses, Dr Williams also had relevant experience in small hospitals when he worked as an anaesthetist with orthopaedic surgeons between 2002 and 2008.

21.3. Likely cause of Mrs Walton's collapse

Whilst conceding that the particular cause of Mrs Walton's deterioration was uncertain, Dr Williams expressed a view that one explanation was acute diastolic heart failure and pulmonary oedema in the context of a history of uncontrolled hypertension, exacerbated by pain and surgical stress response[170]. A link with opioids was said to be another possible explanation[171].

21.4. Sportsmed's response to Mrs Walton's deterioration

Dr Williams agreed with Dr Cobain's decision to reduce Mrs Walton's narcotics due to her problem with nausea and tiredness on day six, however he considered that due to Mrs Walton's risk of significant peri operative complications, there should have been an upgrade to her level of nursing care and monitoring at that time. The deterioration from 1330 earlier in the day, with lower O2 sats of 84%, increased pain, sedation and nausea and high blood pressure, also warranted a higher level of treatment and investigation[172].

21.5. According to Dr Williams, when nurses were informed of a complaint of chest tightness, wheeziness and shortness of breath on exertion at 7:30pm, this should have alerted staff to the potential for a cardiac as well as respiratory cause and for further investigation to be instigated. Dr Williams considered that he would expect a clinical response which would contemplate a cardiac cause or pulmonary embolus, and which would include examination of Mrs Walton's respiratory or cardiovascular systems and investigations including ECG, urgent cardiac enzymes and chest X-ray[173].

21.6. The appropriateness of Dr Cobain's response when called at 7:30pm depended upon what he knew about Mrs Walton's condition, according to Dr Williams. In his view, if Dr Cobain was told that there was a complaint of chest tightness, shortness of breath on exertion and desaturation, a cardiac cause or pulmonary embolus should have come to mind and investigations thought of. Whilst asthma was one possible

[170] Transcript, pages 1474 and 1529
[171] Transcript, page 1489
[172] Transcript, pages 1520 and 1527
[173] Transcript, page 1518

explanation, in Dr Williams' view it did not explain her sedation and 85% O2 sats earlier in the day[174].

21.7. Rather than waiting until 3:52am, Dr Williams argued that Mrs Walton should have been transferred to the RAH at the time of her episode at 7:30pm[175]. He maintained that nurses in hospitals like Sportsmed should feel empowered to make this type of decision if the patient is sick enough[176]. Unfortunately, this view presupposes that the nurses have the capacity to recognise just how sick a patient is. Dr Williams stated that if Mrs Walton did go on to have an ischaemic event following transfer earlier in the evening, she could have been managed with nitrates, aspirin and possibly urgent catherisation and angiography[177].

21.8. Dr Williams considered that Mrs Walton might have had a better outcome if there had been better pain control using non-opioid analgesics, such as ketamine, cardiac investigation of chest tightness, earlier escalation of care following recognition that Mrs Walton was a deteriorating patient and finally a faster response time when she did collapse. It was noted that a further episode of shortness of breath on exertion occurred at 2:30am and then a complaint of heavy chest at 3:15am, yet the ambulance was not called until 3:49am. Dr Williams emphasised the importance for staff to be able to anticipate risks appropriately and not wait until the last moment to call an ambulance.

21.9. <u>Decision to administer the anaesthetic at Sportsmed</u>

According to Dr Williams, Dr Dennis was placed in a difficult situation having to assess Mrs Walton's risks for her procedure at Sportsmed in light of her history and without the benefit of a timely preoperative consult. In his view it would have been hard for Dr Dennis to decline to proceed with the anaesthetic, knowing that Mrs Walton had been assessed by Dr Cobain and had apparently met the hospital admission criteria.

21.10. Dr Williams said that he would have been incredibly uncomfortable doing the anaesthetic at Sportsmed with her known risks and history and, if he had been the anaesthetist, he would have aborted the surgery and arranged to have it done in a

[174] Transcript, page 1551
[175] Transcript, page 1527
[176] Transcript, page 1528
[177] Transcript, page 1530

bigger hospital with facilities which could cater for the risks, following a preoperative assessment.

21.11. The decision to proceed with the procedure at Sportsmed was in his view understandable, but unwise. The fact that Dr Dennis managed to perform a successful spinal anaesthetic does not indicate that it was the correct decision to proceed at Sportsmed. Anaesthetists are said to be always concerned when they know that a patient has had troubled anaesthetics in the past, especially when done by very experienced anaesthetists as in this case[178].

21.12. Pain management strategy

Dr Williams was critical of Mrs Walton's pain management strategy and noted the association in some medical literature between poor analgesia in the peri operative period and myocardial stress which might effect 'myocardial demand-supply balance'.

21.13. According to Dr Williams, it is estimated that between 30% to 40% of myocardial ischaemia is 'silent' in the post operative period because of surgical pain elsewhere, which would suggest that nurses ought to be alert to any presentation in higher risk patients post operatively which might be explained by ischaemia[179].

21.14. Opioid tolerant patients such as Mrs Walton are said to require higher opioid requirements than opioid naïve patients and yet opioid tolerant patients are said to vary as to dosage requirements, tendency to nausea, vomiting and respiratory depression. In such circumstances Dr Williams argued that this type of patient needs to be given an explanation preoperatively about why good pain relief with opioids may be more difficult.

21.15. In his view the large number of medications administered in an attempt to manage Mrs Walton's pain by the fifth post operative day was a concern. The absence of recorded sedation scores after 7:20pm was also said to be a concern, particularly the entry at 10:40pm, where a nurse has written 'asleep'[180].

21.16. According to Dr Williams, Mrs Walton should have had her surgery in a hospital with ICU facilities. If that had occurred, he considered that she may not have occupied a

[178] Transcript, pages 1480, 1505 and 1506
[179] Transcript, page 1552
[180] Exhibit C10a, page 61

bed in ICU on the fifth or sixth post operative day, however she needed an acute pain management team with credentialed staff providing advanced pain management. He suggested that after day three or four, Mrs Walton may not have needed their management any longer[181].

21.17. In Mrs Walton's case it was observed that she received mainly opioid analgesics with 'the consequent risk of poor pain control and increased opioid related side effects including the potential of sedation, respiratory depression, airway obstruction, central apnoeas and nausea and vomiting.' In Dr Williams' opinion, there should have been better use of non-opioid analgesics such as ketamine. Dr Williams maintained that, contrary to an opinion expressed by Dr McIntyre, ketamine has a useful role to play in pain relief in safe low doses, but that it needs to be given intravenously and therefore needs to be administered in a hospital which can manage this[182].

21.18. <u>Decision to admit Mrs Walton to Sportsmed</u>

Dr Williams considered that Mrs Walton was at 'high risk of peri operative morbidity and mortality'. He was firmly of the view that Mrs Walton should not have been admitted to Sportsmed with her known co morbidities, which included obstructive sleep apnoea, requiring CPAP, morbid obesity, hypertension, opioid tolerance, multiple adverse drug reactions, increased venous thromboembolism risk, difficult IV access and increased risk of wound infection related to obesity.

21.19. According to Dr Williams, obese patients are said to commonly have left ventricular hypertrophy. This finding at post mortem in Mrs Walton is thought to have played a role in Mrs Walton's collapse[183].

21.20. As to Dr Cobain's preoperative assessment, Dr Williams expressed concern that the suitability of Sportsmed for Mrs Walton's surgery was not addressed in Dr Cobain's letter to Dr Bauze. In his view, this issue should have been included in Dr Bauze's referral to Dr Cobain[184].

21.21. A pre anaesthetic assessment was needed also, according to Dr Williams, not only to assess the risk of the anaesthesia, but to assess the 'whole surgical pathway'[185].

[181] Transcript, page 1478
[182] Transcript, page 1481
[183] Transcript, page 1474
[184] Transcript, page 1538
[185] Transcript, page 1506

21.22. Dr Williams described the advantage of having a medically led medical emergency team in bigger hospitals to enable early escalation of care for a deteriorating patient and faster response time.

21.23. Morbidly obese patients in particular are said to present a number of well recognised risks and challenges for staff. Because of the increase in obesity in the community generally, Dr Williams noted that there are many obese patients admitted for surgery in institutions which do not have ICU backup. Private hospitals like Sportsmed are known to utilise internal physicians like Dr Cobain for support when needed, however in public hospitals a team of physicians, intensivists and others are relied on because of the increased specialisation and complexity of medicine[186].

21.24. According to Dr Williams, Mrs Walton had a 'known difficult airway with a previous failed intubation and difficult bag-mask ventilation'. She was considered at moderate risk of deep vein thrombosis (DVT) and pulmonary embolus. He considered that managing her airway would be difficult in the event of an episode requiring urgent intubation or assisted ventilation, yet in the absence of appropriately trained medical staff to handle such a situation at Sportsmed, Mrs Walton would be reliant upon staff calling an ambulance to evacuate her to an acute public hospital. Dr Williams considered that whilst this risk was identified, those caring for Mrs Walton thought it unlikely to materialise.

21.25. Dr Williams explained that patients with sleep apnoea have a higher risk of arrhythmia, pulmonary hypertension and left ventricular hypertrophy. In that sense Mrs Walton was said to be at general risk of cardiac disease. Her hypertension was said to be a problem because of its effect on the vascular system.

21.26. Reference was made by Dr Williams to medical literature which describes the raised risks for patients with obstructive sleep apnoea (OSA), not only for the anaesthetic challenges, but also concerning the 'entire peri operative period'. The literature was summarized as follows:

> 'These patients remain at risk in the peri operative period due to acute disordered sleep disturbance, opioid induced peripheral and central apnoeas, and the acute stress response to surgery. [187]

[186] Transcript, page 1482
[187] Studies in 1985, 1990 and 2009

> In 2001, a study performed by Gupta reported a significantly higher incidence of serious postoperative complications (including unplanned ICU admissions, re-intubations, and cardiac events) and longer hospital stays after joint replacement surgery in patients with OSA compared with matched controls).
>
> Systematic reviews on OSA have recommended minimising opioid doses in the peri operative period.[188]
>
> Most guidelines also recommend monitoring in a high dependency unit or intensive care unit especially if the patient is CPAP requiring and likely to require significant opioids in the post operative period.'

21.27. I accept Dr Williams' view that the complexity of Mrs Walton's post operative management should have been anticipated. I find that her known co morbidities extended beyond the ability of Sportsmed to meet the potential post operative problems such as the need for respiratory support, complex pain management therapies and increased risk of peri operative cardiac events. I accept the opinions expressed by Dr Williams concerning the decision to admit Mrs Walton to Sportsmed, the predictable risks during surgery and throughout the post operative phase as well as the management of Mrs Walton at Sportsmed leading to her cardiac arrest.

22. Evidence of Dr Simon Hockley

22.1. This witness was called by counsel for Dr Dennis and the Walton family. Dr Hockley qualified as an Intensivist in 2006. He has a background as a paramedic and an ICU nurse. He currently shares his time working at a public hospital in New South Wales and Wakefield Street Hospital in South Australia[189]. Much of what Dr Hockley covered in his report and his evidence is consistent with the opinions expressed by other expert witnesses in the Inquest, but with a difference in emphasis on some topics.

22.2. Dr Hockley maintained that Mrs Walton's death was preventable in the sense that she should have been hospitalised in a facility with ICU backup, bearing in mind her medical history and co morbidities. However, he regarded the nursing staff at Sportsmed as performing within the limits of their ability.

22.3. Dr Hockley considered that it was not evident that Mrs Walton's co morbidities would exceed the capacity of Sportsmed. Having heard from other witnesses I am not prepared to accept this particular view. Dr Hockley touched upon the relative

[188] Gross et al, 2006, Chung et al, 2008
[189] Exhibit C39c

increase in post surgical risks for obese patients with or without sleep apnoea, bearing in mind the degree of obesity and the nature of the surgery. Peripheral limb surgery is said to be a lower risk, yet the risk of airway obstruction and hypoxia increases when sedating drugs and opioids are administered[190].

22.4. Dr Hockley pointed to the lack of any process at Sportsmed to identify an acutely deteriorating patient as well as lack of appropriate on site medical support as contributing factors to the outcome. In his view, to call 000 was to provide the same level of care as a patient in the community, and is inconsistent with best hospital practice. I endorse this observation.

22.5. As to the cause of Mrs Walton's deterioration, this witness agreed with the assessment of Dr Williams, that the autopsy findings, the history given leading to her collapse and the elevated cardiac biomarker TnT (0.24mmol/L) supports the conclusion that Mrs Walton developed acute heart failure, leading to acute respiratory failure.

22.6. In his view, by 3:15am, with the systolic blood pressure at 220, and falling O2 sats with increased O2 flow, this pointed to a significant hypoxic event. Dr Hockley stated that once Mrs Walton went into acute heart failure, leading to cardiac arrest, her outcome was likely to be very poor.

22.7. According to Dr Hockley, hospitals need systems to alert them to high risk patients[191]. In his view Mrs Walton was at higher risk than the 'normal' patient and by 2:30am she was deteriorating and needed on site medical evaluation. He considered that her pain, hypertension and fluid overload may have triggered the hypoxic episode.

22.8. Dr Hockley considered that it was not uncommon for patients with heart failure to present with symptoms like asthma. Given Mrs Walton's past history of wheeziness it was assumed, not unreasonably in his view, that it was indeed asthma[192].

22.9. However, Dr Hockley observed that Mrs Walton did not have a history of airways disease or severe asthma in her past and her presentation was also consistent with possible fluid overload, a surgical stress response and hypertension[193]. Dr Hockley remarked that the time taken from this episode at 2:30am, to when the ambulance was

[190] Transcript, page 1692
[191] Transcript, page 1594
[192] Transcript, pages 1649-1650
[193] Transcript, page 1652

called, was too long. In his view, if Mrs Walton had been in a hospital with skilled medical coverage, she would have been promptly attended and interventions would have occurred, resulting in a better outcome[194]. He said that some nurses get very stressed and do not deal with emergencies very well and so it is important to ensure that if the patient is judged to be at potential higher risk, they are in an environment where an efficient, well-trained emergency team is available to intervene at short notice.

22.10. Dr Hockley speculated that when Dr Cobain was notified at 7:30pm by a nurse about what was thought to be asthma, there was no indication of any concern by the nurse and so it was not surprising that Dr Cobain did not think it necessary to re attend the hospital to examine Mrs Walton[195]. There were indications, according to this witness, that Dr Cobain considered the possibility of fluid overload as a possible cause, hence the order for fluid restriction and daily weighing[196].

22.11. In cross-examination this witness stated that Mrs Walton's collapse was going to happen, regardless of which hospital she was in[197]. I have reservations about this opinion in light of the opinions expressed by Dr Williams, which I find more persuasive. Whilst it is clear that Mrs Walton's undiagnosed triple vessel disease was likely to have caused an ischaemic event requiring intervention at some stage, the trigger for that event is more difficult to predict. The fact that it occurred in a hospital should in my view have lead to a better outcome than if it had occurred at home.

22.12. This witness was a keen advocate of the introduction of early warning charts in hospitals to alert staff to deteriorating patients. Where certain features are observed in a patient, depending on the circumstances specified in the chart, it might trigger a medical emergency team call (MET). One such chart called 'ADDS' (adult deterioration detection system) was introduced into evidence, said to be similar to the RADAR chart explored elsewhere in evidence[198]. Dr Hockley conceded that he has been working with staff at Sportsmed and advising them on improvements to their systems including preoperative screening of patients. He agreed that the systems and charts utilised by various hospitals need to be tailored to the nature of the facility, including whether there are medical practitioners on site. He placed great emphasis

[194] Exhibit C39
[195] Transcript, page 1651
[196] Transcript, page 1652
[197] Transcript, page 1682
[198] Exhibit C30b and Transcript, page 1623

not only on these charts which rely on an accumulated score, according to observations and events, but also upon the 'intuition' of nurses. In other words, he said that if nurses are concerned about a patient, he would trust their intuition. The medical emergency teams are said to be in place in public hospitals and some of the larger private hospitals.

22.13. Dr Hockley also outlined links which some small hospitals, such as Burnside Hospital, has with offsite intensive care specialists as a backup resource. He agreed with other witnesses that it was not feasible to have on site skilled medical practitioners and medical emergency teams in small hospitals like Sportsmed[199].

22.14. Having considered the evidence on this topic I welcome any improvement in systems and charts designed to detect a deteriorating patient in any hospital. Whether small hospitals which are staffed only by nurses are able to deliver better outcomes for patients with these charts is difficult to predict. Much will depend upon the quality of the nurses, which is something which medical practitioners will find difficult to determine. In Mrs Walton's case, Dr Cobain was called at 7:30pm, by a nurse whom he regarded as very experienced. A critical opportunity to review the patient was lost here. Whether an early warning chart would have altered the outcome is questionable. The results flowing from early warning charts at Sportsmed and other small private hospitals in my view will also depend upon how readily off-site medical practitioners are prepared to review the 'deteriorating' patient after hours, particularly in the middle of the night.

23. Evidence of Dr Peter Thomas

23.1. This witness was called by counsel for Sportsmed. Dr Thomas is currently the Director of the ICU at the Lyell McEwin Hospital. He was formerly the Director of the Royal Adelaide Hospital, ICU for many years. Additionally, he has worked in the ICUs at Calvary, Wakefield Street and St Andrews Hospitals. I will summarise the views expressed, which in large part mirror those expressed by Dr Williams and Dr Hockley.

[199] Transcript, page 1657

23.2. In his view Mrs Walton died following cardiac arrest after developing cardiac syndrome. The acute heart failure was said to be precipitated by myocardial ischaemia as a consequence of uncontrolled hypertension and ongoing pain[200].

23.3. According to Dr Thomas, Mrs Walton should have been regarded as a high risk patient who should have had her surgery in a hospital with HDU and ICU facilities with dedicated consultant cover and in-house medical staff, which is said to be available in six private hospitals in Adelaide. Dr Thomas considered that Mrs Walton had numerous identifiable co-morbidities which required close post operative monitoring and that she definitely should not have had her surgery at Sportsmed. He referred to the availability of medical emergency teams in these higher level private hospitals and public hospitals which are able to review deteriorating patients[201].

23.4. In his view, unless hospitals have these higher level facilities, they should ensure that only low-risk patients are managed there. This witness also pointed to flaws in the preoperative process which saw Mrs Walton admitted and the absence of a preoperative anaesthetic assessment. Dr Thomas agreed with other expert witnesses who acknowledged that Dr Dennis was placed in a very difficult situation at Sportsmed[202]. Dr Thomas was questioned about whether the risk of a failed intubation might have been exaggerated given that the ambulance officer was able to successfully intubate Mrs Walton. He maintained that the issue with her difficult airway was a 'real' issue and was not negated by that emergency intubation. I accept Dr Thomas's explanation for this opinion, but do not repeat it.

23.5. According to Dr Thomas, Mrs Walton's known hypertension and non-opiate naïve status posed predictable difficulties for her post operative management, which could have been managed better in a higher grade hospital, using an arterial line, IV hypertensive drugs and management of pain by in-house medical staff in an ICU/HDU environment. He said that Mrs Walton's obesity and past history of adverse drug reactions further complicated her potential post operative management[203].

23.6. Dr Thomas maintained that the key issue was to minimise the risk of an acute coronary syndrome, leading to acute heart failure which can be precipitated by poorly

[200] Transcript, pages 1565 and 1592
[201] Exhibit C38
[202] Transcript, page 1580
[203] Exhibit C38

controlled hypertension and ongoing post operative pain. The slightly elevated troponin level was said to be consistent with a cardiac ischaemic event[204]. In evidence, Dr Thomas elaborated about what he regarded as Mrs Walton's extraordinarily dangerous blood pressure levels prior to her collapse and the benefit of being able to manage that with an arterial line.

23.7. In his view, a ketamine infusion should have been used to manage Mrs Walton's pain. He conceded that this type of pain management was not available at Sportsmed and that Mrs Walton no doubt trusted that her doctors would proceed in her best interests. Dr Thomas expressed the view that Dr Cobain is a well respected medical practitioner who was qualified to manage Mrs Walton's hypertension, but perhaps not her pain[205]. When questioned about Dr Cobain's connection with Sportsmed, Dr Thomas remarked that he seemed to be a 'one man band on duty 24/7' and that perhaps in that sense he had an 'interest' in Sportsmed[206].

23.8. This witness expressed the view that when surgeons who have a primary focus on operating at Sportsmed seek a preoperative assessment from a specialist, they should specifically ask whether surgery at Sportsmed is appropriate. Additionally, he considered that patients should be given information about the proposed institution for surgery which includes the capacity to deal with problems if they emerge[207].

23.9. Dr Thomas acknowledged that once Mrs Walton suffered the acute coronary syndrome and then cardiac arrest, the outcome would be very poor, even when occurring in a bigger hospital. In my view, this emphasises the point about the need for early detection and prevention, which is related to choosing the appropriate hospital for the surgery.

23.10. In cross-examination Dr Thomas agreed with the proposition that because of Mrs Walton's unknown cardiac disease that she was 'a disaster waiting to happen'[208]. I do not regard this concession as one which enables me to conclude that Mrs Walton's death was inevitable in the week following her surgery, regardless of where she had been hospitalised. Dr Thomas emphasised that the key issue for Mrs Walton was to

[204] Transcript, page 1614
[205] Transcript, page 1599
[206] Transcript, page 1603
[207] Transcript, pages 1578 and 1586
[208] Transcript, page 1583

minimise the risk of an acute coronary syndrome, leading to acute heart failure which can be precipitated by hypertension and post operative pain[209].

23.11. I found Dr Thomas to be an impressive witness who, together with Dr Williams and Dr Hockley, made a valuable contribution to the issues canvassed during the Inquest.

24. Witnesses concerned with management at Sportsmed

24.1. Evidence of Suzanne Murray

Suzanne Murray has been the Director of Nursing at Sportsmed since November 2010.

24.2. Ms Murray described Sportsmed as a 45 bed facility with four HDU beds with either a 1:1 or 1:2 nurse to patient ratio and which provides constant ECG monitoring[210]. I note that this is inconsistent with the observations from Sarah Walton back in October 2010 that her mother did not have cardiac monitoring while in the HDU[211].

24.3. In addition to the overnight admissions, Sportsmed is said to have a 16 'chair' day surgery unit.

24.4. Ms Murray outlined improvements in the pre admission procedures at Sportsmed said to be designed to identify high risk patients and to try to identify patients who may have undiagnosed sleep apnoea[212].

24.5. Patients with a BMI over 35 are now routinely required to have preoperative assessments by an anaesthetist, or physician, or both. This witness explained the newly created role of pre admission coordinator. According to this witness, a limit of 150 kilograms is the weight above which patients are ineligible for surgery at Sportsmed. This witness confirmed that hospital nurse coordinators were no longer allocated a patient load during overnight shifts.

24.6. According to this witness an emergency warning chart is being devised to assist staff to determine when a patient's observations indicate that they need a medical review[213].

[209] Exhibit C38
[210] Transcript, page 1131
[211] Transcript, page 444
[212] Exhibit C14
[213] Exhibit C14a, C14b and Transcript, page 1103

This witness also explained current versions of various protocols and other charts and changes at Sportsmed, which I do not intend to elaborate upon, but bear in mind[214].

24.7. Ms Murray referred to improvements in training of nursing staff in airway management and also to changes in the way they conduct nursing handovers. Whilst these steps and changes to the pre admission process are welcome improvements, I have some concern about how the changes will be implemented and whether the nurses have sufficient skill to do what is required with the newly devised charts. There comes a point when there is no substitute for an informed, astute nurse. According to Ms Murray, she was not aware of any complaints about inadequate staffing on overnight shifts. In light of some of the evidence in this Inquest, her ignorance about ongoing staffing issues is a concern.

24.8. There is also a concern about how patients are advised of the limitations in the facilities and staffing at Sportsmed before surgery is planned, given that Ms Murray stated that she would not expect the pre admission coordinator to tell patients about that[215].

24.9. Evidence of Alan Morrison

Alan Morrison is the Chief Executive Officer of Sportsmed. This witness emphasised that of the 8,000 procedures performed there in a year, only a handful of patients have had to be transferred to the RAH. Not surprisingly, he explained that it would not be viable to employ medical practitioners to be on site overnight and it would not be feasible to establish an ICU at Sportsmed because no health insurer would fund it. Mr Morrison's remarks confirm the view expressed by Dr Thomas that it would be too expensive for small private hospitals to run an ICU and that they are difficult to staff.

24.10. Mr Morrison said that the hospital previously relied only on Dr Cobain as the on-call doctor for Sportsmed, but that they now call upon an additional two doctors[216].

24.11. Mr Morrison said that he was unaware of any concern expressed about nurses being understaffed[217].

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[214] Exhibit C6f and Exhibit C13c
[215] Transcript, page 1150
[216] Transcript, page 1160
[217] Transcript, page 1169

24.12. Evidence of Alison Zilm

Alison Zilm is the Clinical Manager at Sportsmed. Her work is administrative in nature and involves developing policies for the hospital. This witness appeared to have quite limited clinical experience as a nurse, yet holds a senior role in the organisation, acting as a mentor to junior nurses. Ms Zilm's affidavits and evidence covered much of the same ground as other witnesses concerning the changes to the pre admission process and alert systems, including charts and policies used for monitoring patients receiving opioids and those with diagnosed sleep apnoea, the latter policy being generated in March 2013. I note that the improved chart for observing 'sedation score' includes the option to insert an 'S' to indicate 'normally asleep, easy to rouse', which has been criticised by experts in this Inquest. I understand that there is a proposed revision to remove this option and to require patients to be woken.

24.13. Ms Zilm is said to be working on a document called MEWS (Modified Emergency Warning System) for the identification of a deteriorating patient. The document is said to be based upon one utilised by SA Health which is called RADAR (Rapid Detection and Response)[218].

24.14. Many other Sportsmed documents were introduced through this witness concerning various policies, protocols and procedures developed at Sportsmed, at various times since 2006[219]. Many of these documents set out guideline standards of nursing and medical practice required at Sportsmed. I am mindful that the value of such documents is limited by the extent to which doctors and nurses are familiar with them as well as their capacity to implement them. I bear in mind evidence from this witness about compulsory 'self directed learning packages' for nurses at Sportsmed and training given to the hospital coordinators[220]. Evidence was led about a requirement in which at least one nurse on each shift is now trained in the insertion of an IV line, however that does not seem to be reflected in current policy documents.

24.15. I note that in a document revised in 2009 called 'Admission Policy', there is a list of the information which is to be provided to the patient, either verbally and/or in

[218] Exhibits C6a, C6c, C6d, C6f and C6g
[219] Exhibit C13c
[220] Transcript, pages 1376-1379

brochure format. Information about whether Sportsmed is the appropriate facility for the surgery and the limitations concerning staffing overnight does not appear to feature as a topic here. In my view it should be specifically included, both verbally and in writing[221]. In the same document the following is stated concerning admission of 'bariatric/obese patients':

> 'Due to limitations on equipment, patients who weigh over 150 kgs on the day of surgery will be scheduled for surgery at a hospital which has the resources to deal with bariatric patients.' [222]

24.16. One would hope that with the improvements to pre admission procedure that there would never be a case when such a patient presented for admission on the day of surgery and had to be re-scheduled for this reason. It should be avoided wherever possible by careful planning well in advance of surgery. I note Ms Zilm's evidence concerning the scales used at Sportsmed and which are said to be calibrated annually[223].

24.17. During cross-examination this witness conceded that the pre admission coordinator would not normally be expected to check up before admission to ensure that any preoperative assessment appointments had been attended. In my view, the coordinator is well placed to check this detail in advance of surgery and to ensure that a copy of the report is obtained and provided to the surgeon to enable a change of plan if necessary[224].

24.18. I also note that since the deaths of Mr Ryan and Mrs Walton, the pre-admission form used at Sportsmed has been modified to include additional information designed to screen for patients with various potential co morbidities, including sleep apnoea. However, it appears that the tick box method has been retained for preoperative anaesthetic or physician assessment[225].

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[221] Exhibit 13b, page 37
[222] Exhibit C13b, page 44
[223] Transcript, page 1372
[224] Transcript, page 1390
[225] Transcript, page 1119

25. Findings concerning the circumstances leading to the death of Patricia Dawn Walton

25.1. Bearing in mind the available evidence and the helpful submissions of counsel, I make the following additional findings concerning the circumstances leading to Mrs Walton's death:

- Mrs Walton should never have been admitted for her surgery at a hospital like Sportsmed;
- With her known co-morbidities and past medical history, Mrs Walton should have been advised to have her surgery in a hospital which had a higher level of backup including an accredited HDU and ICU;
- If Dr Bauze did not have admitting rights in a hospital with these facilities, he should have recommended that Mrs Walton be operated on by a surgeon who did;
- Mrs Walton's admission to Sportsmed was also compromised by a flawed pre-admission process which resulted in her being deprived of a timely anaesthetic consult and hence another opportunity to arrange for surgery elsewhere;
- Dr Bauze was alerted to concerns that Sportsmed might be an inappropriate hospital for the surgery by Mrs Walton's daughter who was an intensive care nurse and was familiar with problems encountered with her mother during previous anaesthesia;
- The issue concerning whether Sportsmed was suitable should have been specifically raised with Mrs Walton by Dr Bauze and also in his preoperative referral to Dr Cobain;
- Dr Cobain did not bring enough independent consideration to bear upon the question concerning whether Mrs Walton's surgery should take place at Sportsmed when he carried out his preoperative assessment and when documenting his consult in the letter sent to Dr Bauze;

- The absence of pre anaesthetic consult created the situation in which the anaesthetist was placed under unacceptable pressure to decide whether to proceed immediately as planned or to abort the surgery;

- The decision to proceed at Sportsmed, made under pressure, was understandable, but unwise;

- Without the capacity of specialist pain management strategies and more effective control of Mrs Walton's hypertension, Mrs Walton's condition gradually deteriorated towards the latter part of her post operative period;

- The absence of suitably trained on site medical practitioners and skilled nurses at Sportsmed meant that Mrs Walton's deteriorating condition, which emerged from about 10am on the fifth post operative day, was not properly managed;

- Mrs Walton's ongoing chronic and severe pain, together with her challenging hypertension, morbid obesity and sleep apnoea meant that she was vulnerable to peri operative cardiac events, leaving aside the presence of triple vessel disease, which was at that time, undiagnosed;

- When Mrs Walton complained of chest tightness on exertion at 7:30pm, this should have prompted an investigation for a cardiac cause, notwithstanding the comment that it felt like asthma;

- Had nurses been better equipped and supported to assess the situation, arrangements could have been made to transfer Mrs Walton to another facility in a timely fashion;

- If Mrs Walton was evacuated to the RAH earlier in the evening to investigate her symptoms, she could have been aggressively treated to stabilise the situation;

- I find it likely that Mrs Walton's collapse in the early hours of 1 November 2010, and her subsequent death, could have been prevented if she was managed post operatively in a more appropriate hospital.

26. Recommendations

26.1. Pursuant to Section 25(2) of the Coroners 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 events that were the subject of the Inquest. I therefore make the following recommendations:

1) That the Minister for Health, the Australian Commission on Safety and Quality in Health Care and the Australian Council on Healthcare Standards, consider as a requirement of accreditation that small private hospitals like Sportsmed which have no on-site medical practitioners overnight, and no ICU backup, develop robust pre-admission processes in which higher risk patients are screened to ensure that they are not accepted for overnight admission unless they have been assessed as suitable for that facility by a medical specialist or anaesthetist, well in advance of the planned admission date;

2) That the Medical Board of Australia, the Australian Medical Association, the Australian Medical Council, the Australian College of Nursing and Australian Nursing Schools attempt to raise awareness amongst medical practitioners and nurses about the inherent risks of post operative respiratory depression occurring in obese patients in particular, who may or may not have a diagnosis of sleep apnoea and who are receiving, or have received, opioid analgesia;

3) That the Medical Board of Australia consider formulating a code of conduct which stipulates that medical practitioners who practise preferentially in a facility in which they have a financial interest, should disclose that fact to the patient appropriately and specifically raise the issue concerning suitability of that facility with other specialists to whom they refer the patient for pre-admission assessment;

4) That the Australian and New Zealand College of Anaesthetists (South Australian branch) consider reaching an understanding with the Royal Australasian College of Surgeons (South Australian branch) and the Australian Society of Orthopaedic Surgeons to streamline the process by which higher risk patients are referred for pre anaesthetic assessment and to avoid last minute changes to operating lists where this would result in a different anaesthetist taking over immediately before surgery;

5) In the interests of patient safety, that Board Members and Chief Executive Officers of hospitals with staff and facilities similar to, or less than those at Sportsmed, consider implementing policies whereby those hospitals decline to admit higher risk patients to their facilities.

Key Words: Surgery; Hospital/Medical Treatment; Sleep Apnoea

In witness whereof the said Coroner has hereunto set and subscribed her hand and Seal the 14th day of February, 2014.

Deputy State Coroner