



# MAGISTRATES COURT of TASMANIA

## CORONIAL DIVISION



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## Record of Investigation into Death (Without Inquest)

*Coroners Act 1995*  
*Coroners Rules 2006*  
*Rule 11*

I, Rod Chandler, Coroner, having investigated the death of Paul James Woolley

### **Find, pursuant to Section 28(1) of the Coroners Act 1995, that:**

- a) The identity of the deceased is Paul James Woolley;
- b) Mr Woolley was born in Hobart on 14 April 1966 and was aged 50 years;
- c) Mr Woolley died on 5 September 2016 at the Royal Hobart Hospital (RHH) in Hobart;  
and
- d) The cause of Mr Woolley's death was multiple pulmonary thromboemboli due to deep vein thrombus following surgery of the pharynx for obstructive sleep apnoea. Significant contributing factors were morbid obesity, multinodular goitre and heparin-induced thrombocytopenia (HITS).

### **Background**

Mr Woolley was married to Christine Anne Woolley and they resided at Glen Huon. They had four children, now all adults. Mr Woolley was employed as an operations manager by Ta Ann Tasmania, a timber processor.

Mr Woolley was a long-term sufferer of sleep apnoea and the records show the following history of this condition:

1. In 2001 Mr Woolley was assessed for sleep apnoea by respiratory surgeon, Dr Hugh Mestitz. A mandibular advancement device was recommended but Mrs Woolley reports that it was of little benefit. In 2014 Mr Woolley was still experiencing loud snoring and daytime tiredness. He had a sleep study on 25 June 2014 which showed severe obstructive sleep apnoea with cyclical obstruction, hypopnoeas and apnoeas with oxygen desaturations and arousals. He was recommended continuous positive airway pressure (CPAP) treatment and referred for specialist ENT review. A CPAP device is a form of positive airway pressure ventilator which applies mild air pressure on a continuous basis to keep the airways continuously open in people who are unable to breathe spontaneously on their own.
2. On 22 December 2014 Mr Woolley consulted surgeon, Dr Nusa Naiman. Dr Naiman has a speciality in otolaryngology, head and neck surgery. An examination at this time showed a deviated nasal septum, hypertrophic inferior turbinates, large tonsils, a posterior sitting elongated soft palate and a large tongue. Dr Naiman confirmed the diagnosis of severe obstructive sleep apnoea syndrome. She also diagnosed an

allergic rhinitis and a deviated nasal septum.

3. Mr Woolley had been using the CPAP device when he saw Dr Naiman and she advised him to continue with its use. She also discussed with him possible surgical treatment for his sleep apnoea and associated snoring. This involved a two-step approach. The first was septoplasty and reduction of the inferior turbinates to improve nasal patency. The second consisted of uvulopalatopharyngoplasty (UPPP), a procedure involving removal of the obstructing tissues of the soft palate, lateral pharyngeal walls and tonsils with the aim of widening the pharyngeal airway. Mr Woolley elected to proceed with the surgery option.
4. Mr Woolley underwent the first surgical procedure on 5 February 2015. The surgeon was Dr Naiman. The procedure was uneventful and Mr Woolley was discharged home the following day. Mrs Woolley reports that *“it helped a bit but not enough”* and her husband chose to go ahead with the second surgical stage. This was initially scheduled for mid-2015 but was postponed at Mr Woolley’s request. It was then set to take place at Calvary St John’s Hospital (Calvary) on 19 August 2016.

### **Circumstances Surrounding the Death**

It is necessary that I set out in detail the events surrounding Mr Woolley’s UPPP surgery including the post-operative care.

On 29 June 2016 Dr Naiman carried out a pre-surgery assessment. Mr Woolley reported that his previous surgery had resulted in better nasal patency and made use of the CPAP easier. However, he said that he was still symptomatic with ongoing daytime tiredness. An examination showed the same anatomical features recorded previously. Mr Woolley confirmed that he wished to proceed with the surgery and signed the relevant consent documentation. Dr Naiman’s record of this consultation includes this notation: *“CPAP would be required post-op.”* In a report to the coroner Dr Naiman expands on this topic saying: *“At his last preoperative consultation with me Mr Woolley was advised to bring his CPAP machine with him and to continue using it unless advised otherwise. I have not provided any specific instruction to the nursing staff.”*

On the day of the surgery, anaesthetist Dr Robert Paton carried out a pre-operative assessment. Dr Paton had been Mr Woolley’s anaesthetist for the septoplasty in 2015. Prior to that procedure he had noted that Mr Woolley was using a CPAP machine to manage his sleep apnoea. There had not been any anaesthetic issues, either during or after that procedure. The assessment on 19 August was straightforward and did not identify any issues of concern apart from Mr Woolley’s obesity (his post-mortem weight was 143.7 kg with a body mass index of 44.4 kg/ m<sup>2</sup>).

Mr Woolley’s surgery proceeded in the early afternoon of 19 August. It included a tonsillectomy. The surgery was uneventful and at 1.05pm he was taken to the recovery room where he remained stable apart from several episodes of desaturation. At 2.45pm Mr Woolley was returned to a ward. Nasal packs were removed beforehand. The post-operative orders given by Dr Naiman provided:

*“Report bleeding/respiratory distress,*

*Discharge 1/7 after review,*

*Medication as prescribed,*

*Follow up 2 weeks,*

*Remove nasal packs before going to the ward.”*

It needs to be noted that Dr Naiman’s orders were silent, both with respect to oxygen saturation monitoring and Mr Woolley’s use of his CPAP machine.

At 7.20pm Mr Woolley was administered 15mg of morphine. Registered nurse Elisha Morris recorded at 9.41pm: *“Patient recovering well. Observations stable. Afebrile. Eating and drinking adequate amounts. IVT (intravenous therapy) Continuing. Requiring regular analgesia - morphine had best effect. Nil visible ooze but very bruised and swollen. Cold items encouraged. Patient managing well. (Has not passed urine). Care as per pathway.”* I note here that a clinical pathway is a document which guides a patient’s nursing care. In this instance St John’s did not have in place a specific pathway for UPPP surgical patients and instead for such patients utilised its Tonsillectomy Pathway.

Nurse Morris’ shift ended at 10.30pm. Beforehand she handed over Mr Woolley’s care to registered nurse Michelle Blake. She says that she told Nurse Blake at this time that Mr Woolley was doing well and that he *“was the best UPPP patient we had seen in a while. His only issue was pain.”* At 1.15am on 20 August Mr Woolley was administered 10mg of oxycodone.

Nurse Blake says that thereafter she visually checked Mr Woolley at half hourly to hourly intervals. At some time between 2.00 to 3.00am she re-positioned him to his right side to assist with sleeping. She said that at this time he was making regular snoring sounds and after *“I moved him onto his side, he appeared to settle and sleep more peacefully...”* At 5.02am Nurse Blake noted: *“Patient slept lengthy periods. Oral analgesia apc. IVT continues. Ice/cold drinks encouraged. Noisy respiration while asleep.”* Nurse Blake also says that at about 5.30am she was at the nurse’s station attending to some paperwork when she detected a change in Mr Woolley’s audible respiration and *“I didn’t think I could hear him snoring anymore.”* She went to his room and noted that he had adjusted his bed and was sitting in an upright position. He acknowledged Nurse Blake when she entered the room. Nurse Blake assumed that Mr Woolley *“must have woken up and decided to have a drink or sit up and watch TV.”*

At around 6.15am, Nurse Blake entered Mr Woolley’s room in the course of her morning round. She said *“Good morning Paul...”* but did not get a response. There was no response either when she shook him. She immediately took his vital signs. His pulse was 85bpm and his oxygen saturation levels were 22%. His blood pressure was within normal parameters. A MET call was immediately made and medical staff promptly attended. Mr Woolley was intubated and administered adrenaline. When Ambulance Tasmania officers arrived they recorded Mr Woolley’s blood pressure at 107/69 mmHg, his pulse rate at 87 bpm and his

temperature at 33.5°C. His Glasgow Coma Score was 3/15. Mr Woolley was then transported to the RHH where he presented in its Emergency Department with an obvious diagnosis of post-respiratory arrest hypoxia. After initial examination and investigations Mr Woolley was admitted to the Intensive Care Unit (ICU).

In the ICU Mr Woolley's standard intensive care therapies were maintained including anticoagulation measures (administration of heparin began on 21 August with 5000 units subcutaneously three times a day). On 22 August he was alert to voice and was obeying commands. However, he was too irritable to be safely extubated. Over the following days he remained relatively stable. On 2 September a CT scan found a saddle embolism with a near-total occlusion of the right pulmonary artery. Intra-pulmonary artery thrombolysis was commenced with systemic continuous heparin replacing the intermittent heparin dose.

At 4.10am on 3 September a full blood examination was noted to show a low platelet count at 69/nL. At this point a diagnosis of heparin-induced thrombocytopenia (HITS) was considered by intensivist, Professor Andrew Turner. There was a later change to the coagulation after discussion with a haematologist. However, by this time the critical pulmonary embolism had already occurred.

A CT scan on 3 September showed that the saddle embolism had not broken down and thrombolysis was terminated. Mr Woolley remained critically ill with severe lung issues, cardiovascular instability, acute renal failure and oedema. On 4 September an ultrasound examination of the legs revealed bilateral deep venous thrombosis and the insertion of an inferior vena cava filter was contemplated. However, Mr Woolley's condition suddenly deteriorated on 5 September 2016 and he died.

### **Post-Mortem Report**

This was carried out by forensic pathologist, Dr Donald Ritchey. In his opinion the cause of Mr Woolley's death was multiple pulmonary thromboemboli due to deep vein thrombus following surgery of the pharynx for obstructive sleep apnoea. Significant contributing factors were morbid obesity, multinodular goitre and HITS.

### **Investigation**

This has been informed by:

1. Affidavits provided by Mrs Woolley.
2. Reports provided by Dr Naiman.
3. Reports provided by Dr Paton.
4. A report from Nurse Ms Alicia Morris.
5. A report from Nurse Ms Bernadette Jackson.
6. A report from Nurse Ms Michelle Blake.
7. Reports from Ms Leah Maglione, Director of Clinical Services at Calvary.
8. Documentation made available by Associate Professor Marcus Skinner.
9. Consideration of Mr Woolley's medical records held by Huon Valley Health Centre.
10. A review of Mr Woolley's records at Calvary carried out by research nurse, Ms L K Newman.

11. Report provided by Dr A J Bell in his capacity as a medical adviser to the coroner.

In his report Dr Bell expresses these opinions:

- That in Mr Woolley's case surgery was a reasonable option to treat his obstructive sleep apnoea.
- That the planning for the surgery and the surgery itself was of a good standard.
- The use of post-operative opioids for patients with obstructive sleep apnoea should be minimised as they can increase the incidence of oxygen desaturation and episodes of apnoea in such patients. However, in Mr Woolley's case the level of opiates administered, when considered in relationship to his size, is unlikely to have had any influence upon the outcome.
- That patients using CPAP therapy should be instructed to use CPAP immediately following UPPP surgery particularly because of an enhanced likelihood of sleep architecture disturbance during the first post-operative night and the likelihood that thereafter sleeping may not normalise for several more nights.
- That Mr Woolley's post-operative care required continuous pulse oximetry to monitor his oxygen saturation levels.
- Had Mr Woolley been using his CPAP post-surgery then in all likelihood the collapse of his airway would not have occurred and his resultant hypoxia avoided.
- That the care and treatment provided to Mr Woolley at the RHH was appropriate and of a good standard.
- That it was incorrect to use a tonsillectomy clinical pathway to guide Mr Woolley's post-operative care and instead a pathway specific to UPPP should have been in place.

As part of the investigation a copy of Dr Bell's report was provided to Dr Naiman, Dr Paton and to Calvary and each provided me with a helpful response. There are three principal issues which arise, namely the non-use of a CPAP machine; the failure to maintain oxygen saturation monitoring; and the absence of a UPPP clinical pathway. I will deal with each in turn.

### **Non-Use of a CPAP Machine**

It is clearly Dr Naiman's view that a patient who uses CPAP and undergoes UPPP should use the device following the procedure unless otherwise advised. She says that she gave this advice to Mr Woolley at the pre-surgery consultation and provided him with a copy of her UPPP post-operative instructions which replicates that advice. Further, she says that if a patient does not follow this advice or if any difficulty arises in the post-operative use of the device then nursing staff should either contact her or the anaesthetist. It is clear that Dr Paton agrees that Mr Woolley should have used the CPAP following his surgery. In his report Dr Paton says: *"I noted also that (Mr Woolley) used a CPAP machine and discussion would have occurred with (him) at his first operation with the need to continue to use that device post-operatively"* and: *"All patients on a CPAP machine are advised to use the CPAP machine post-operatively."*

There is a suggestion that Mr Woolley did not take his CPAP machine with him to St John's on 19 August 2016. This does not accord with the evidence from Mrs Woolley. In her statement she says: *"Paul did take his CPAP machine with him to St John's Hospital on the occasion of his second surgery... Although I didn't accompany Paul when he first presented for this surgery, I know that he took with him his bag of personal belongings and his CPAP machine, which was in its own quite large carry bag, together with a briefcase with some paperwork he wanted to attend to."* Mrs Woolley goes on to say: *"Following Paul's death our son Zane collected the CPAP machine from St John's Hospital at the request of the nursing staff and brought it home to me along with Paul's bag and briefcase."* I accept Mrs Woolley's evidence and find that her husband did take his CPAP machine to Calvary as directed by Dr Naiman.

The obvious question arises; why was Mr Woolley not using his CPAP machine on the night following his surgery when it was at the hospital and it was the expectation of both his surgeon and his anaesthetist that it would be used? The answer to this question is evident from the statements provided by the nursing staff.

As I have already noted, Nurse Morris assumed care for Mr Woolley when he arrived on the ward. She confirms that Mr Woolley did not use his CPAP. She says: *"In my experience patients undergoing UPPP surgery, whether they use their CPAP machines, will depend upon the instructions given by their surgeon."* She gives this explanation for the non-use of CPAP: *"During my time looking after UPPPs I've always had good support from the in charges on the ward and knew from asking these types of questions that CPAP was not routinely used in UPPP patients post-operatively. When first caring for a UPPP and being asked by the patient if they needed their CPAP, I asked a nurse in charge the reasoning why we would not use them and was told that CPAP causes too much pressure on the fragile area of the throat immediately post-surgery."*

Nurse Blake, who took over Mr Woolley's care from Nurse Morris, expresses a near identical view concerning CPAP use. She says: *"In my experience with patients undergoing UPPP surgery, whether they use their CPAP machines, will depend upon the instructions given by their surgeon. Dr Naiman did not give any instructions in the post-operative orders that Mr Woolley's CPAP machine was not to be used."* She says further: *"In my experience, in relation to airway operations, CPAP machines are not usually used because of the positive pressure that it creates on the airway, sutures and throat. If a patient has had surgery on the throat, I understand that the pressure on the airway may cause additional damage/bleeding and not assist healing."*

The foregoing clearly shows that despite the expectations of Drs Naiman and Paton, Mr Woolley was not using his CPAP because the nursing staff had not been directed to employ it and because of their understanding that a CPAP can cause harm to a patient in the immediate post-operative period. This circumstance, in my opinion, demonstrates these shortcomings surrounding Mr Woolley's care:

1. A failure on Dr Naiman's part to include in her post-operative orders a direction that Mr Woolley use his CPAP.

2. A mistaken assumption on the part of both Drs Naiman and Paton that nursing staff would ensure Mr Woolley's use of his CPAP without a written direction for him to do so.
3. A failure on the part of both Drs Naiman and Paton to ensure that Mr Woolley used his CPAP when both knew it was in his best interests to do so.
4. A mistaken belief on the part of both Nurses Morris and Blake that use of CPAP following UPPP may cause Mr Woolley harm and therefore was not to be employed.
5. A failure on the part of Calvary to ensure that its nursing staff was properly educated upon the requirement for CPAP use following UPPP surgery.

### **Non-Maintenance of Oxygen Saturation Monitoring**

The evidence on this subject shows that:

1. Neither Dr Naiman nor Dr Paton directed nursing staff to put in place continuous oxygen saturation monitoring for Mr Woolley.
2. Nurse Morris did not employ oxygen saturation monitoring for Mr Woolley. She says: *"I have not used oxygen saturation monitoring or seen it be used in any of the patients I have cared for, or have taken over care for following UPPP surgery."*
3. Nurse Blake says that at handover she asked Nurse Morris whether Mr Woolley was for oxygen saturation monitoring and was told *"that he was not."* Because of this advice and in the absence of a direction from the surgeon she did not utilise it.
4. Calvary had in place a Clinical Patient Observation (Vital Signs) - Adult Policy that provided, inter alia, that staff should at all times use their clinical judgement regarding the frequency of observations and that unstable patients may need continual observation and frequent monitoring until they are reviewed and stabilised.
5. Calvary acknowledges that in hindsight, the failure to use both continuous oxygen saturation monitoring and regular vital signs monitoring for Mr Woolley was a systems error and this has been addressed in an update of its Policy.

It is self-evident that if oxygen saturation monitoring had been put in place for Mr Woolley then it would have alarmed when his oxygen saturations fell to an unsafe level. This, one assumes, would have led to the immediate attendance by nursing staff who would have been able to address the situation and avoid life-threatening hypoxia by simply waking Mr Woolley and, if necessary, giving oxygen.

I accept Dr Bell's opinion that a proper standard of post-operative care for Mr Woolley required the use of continuous oxygen saturation monitoring, an opinion which is consistent with the outcome of Calvary's own review.

### **Absence of a UPPP Clinical Pathway**

I have already noted that Calvary did not have in place a Clinical Pathway for the management of UPPP patients and that it instead utilised for such patients its Tonsillectomy Pathway. I note Dr Paton's comment that *"a clinical pathway for an adult tonsillectomy is not ideal for a UPPP procedure."* I further note the advice received from Calvary that it accepts the need for a specific UPPP pathway and that it has developed such a pathway which has

been referred for endorsement by the relevant clinician sub-groups. I am advised that this pathway provides for the use of CPAP and for continuous oxygen saturation monitoring.

### **Calvary's Response**

As I have already alluded to, Calvary did, following Mr Woolley's death, initiate its own internal investigation and I am advised that it identified deficits in Mr Woolley's care and management consistent with the weaknesses exposed by Dr Bell in his report to me. Calvary is to be commended for undertaking this review. Clearly it has been thorough. It has led to 28 recommendations being made. It is not necessary for them to be set out by me. Instead it is sufficient for me to observe that if implemented they will significantly reduce the prospect of another death occurring in similar circumstances.

### **Findings, Comments and Recommendations**

I am satisfied, accepting the opinion of Dr Ritchey, that Mr Woolley's death was directly attributable to multiple pulmonary thromboemboli from a deep vein thrombosis. The thrombosis developed in the course of managing Mr Woolley's hypoxia which was a post-operative complication of his UPPP procedure. I am further satisfied that there were shortcomings in Mr Woolley's post-operative care at Calvary which led to his hypoxia. Most notable was, firstly, the failure to ensure that Mr Woolley used his CPAP and, secondly, the failure to utilise continuous oxygen saturation monitoring. In all likelihood, Mr Woolley's death would have been prevented if both or either of these steps had been taken during his post-operative phase.

I have acknowledged that Calvary has conducted its own review of the circumstances surrounding Mr Woolley's death and endorse the recommendations that have been made following that review. I am satisfied, as I have said, that if fully implemented those recommendations will reduce significantly the prospects of a similar tragedy as befell Mr Woolley.

I have decided not to hold a public inquest into this death because my investigation has sufficiently disclosed the identity of the deceased, the date, place, and cause of death, relevant circumstances concerning how his death occurred and the particulars needed to register his death under the *Births, Deaths and Marriages Registration Act 1995*. I do not consider that the holding of a public inquest would elicit any significant information further to that disclosed by the investigation conducted by me. The circumstances of the death do not require me to make any further comment or to make any recommendations.

I convey my sincere condolences to Mr Woolley's family and loved ones.

**Dated:** 24 January 2018 at Hobart in the State of Tasmania.

**Rod Chandler**  
**Coroner**