



MAGISTRATES COURT of TASMANIA

CORONIAL DIVISION



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 Lucien Henri

Find That:

- (a) The identity of the deceased is Paul Lucien Henri;
- (b) Mr Henri was born in Hobart on 5 August 1935 and was aged 78 years;
- (c) Mr Henri died at the Royal Hobart Hospital ('RHH') in Hobart on 15 October 2013; and
- (d) The cause of Mr Henri's death was cerebral infarction and hypoxic brain damage due to the combined effects of ischaemic heart disease, aspiration pneumonia, Parkinson's disease and obstructive sleep apnoea.

Background:

Mr Henri was married to Shirley Marie Henri. They had two children. He was an auditor and had been employed for 38 years by the Hydro Electric Commission, retiring at age 55 years. His medical history included chronic obstructive pulmonary disease, myocardial infarction, depression, Parkinson's disease, hypertension, back, neck and shoulder pain and obstructive sleep apnoea. For some years Mrs Henri had helped care for her husband at home.

Circumstances Surrounding the Death:

On 9 September 2013 Mr Henri was admitted to the Huon Eldercare Nursing Home ('the Home') whilst his wife had surgery. At this time Mr Henri's principal health issues related to his lack of mobility arising from his Parkinson's disease and neck and shoulder pain. He was taking Tramadol for analgesia as well as regular Panadol Osteo. His care was being overseen by Dr John Riley of the Huon Valley Health Centre. On 23 September Dr Riley increased Mr Henri's Tramadol dose because of his persistent pain.

On 24 September 2013 Mr Henri was reviewed by Professor Peppard, a consultant neurologist who specialises in Parkinson's disease. He considered Mr Henri to be suffering from anxiety related to his changed residential situation and the apparent inability of his wife to take him home. Professor Peppard prescribed quetiapine. A subsequent review of Mr Henri's drug chart shows that this drug was given in the correct dosage from the evening of 24 September until his discharge. Professor Peppard did not change Mr Henri's Madopar dosage. The nursing notes record that Dr Riley advised that the quetiapine was to be ceased immediately for over-sedation or other observed side effects. However, it seems that Mr Henri remained active over the next few days with no evidence of a sedation difficulty.

On 1 October 2013 Dr Riley decided to cease the Tramadol and trial Mr Henri on MS Contin (10mg, 3 times a day). MS Contin is a time released formulation of morphine sulphate usually taken to manage chronic pain. Dr Riley recorded in the notes that whilst Mr Henri was staying at the Home this was a "*great place for a trial. He has CPAP for his OSA (obstructive sleep apnoea) so a bit of night time sedation would not be worrisome.*" (Dr Riley has since advised that it was not his belief that the use of a CPAP machine would mitigate against the risk of night-time over sedation. Rather it was his view that the MS Contin may cause a general drowsiness which may worsen the sleep apnoea for which Mr Henri was equipped with a CPAP device.)

From 1 October to 5 October there are no medical notes within the Home records and only minimal nursing notes. The observation chart provides minimal information only. It indicates that Mr Henri's blood pressure remained low, as did his oxygen saturation on room air.

On 5 October Mr Henri was noted to be sedated. His oxygen saturations were 89% on room air and his blood pressure was 90/52mmHg. When given supplemental oxygen via nasal prongs Mr Henri became more easily roused. He received his morning dose of MS Contin. Later in the day the nursing notes indicate that Dr Riley was notified that Mr Henri's blood pressure was low and his oxygen saturations had dropped to 76% (on oxygen). His blood pressure was 78/56mmHg. Dr Riley directed that Mr Henri's MS Contin be ceased and that he commence oral antibiotics and his CPAP. The nursing notes indicate that difficulties were experienced by the nursing staff when trying to fit the CPAP mask, although it appears that this was eventually achieved. Early on 6 October Dr Riley was again contacted by nursing staff that were concerned by Mr Henri's condition. At this time his blood pressure was recorded at 90/52mmHg and the oxygen saturation was 76% on CPAP. Chest auscultation revealed moist crackles. A decision was taken to call an ambulance.

In the Emergency Department of the RHH Mr Henri was noted to be very unwell. He had an unrecordable blood pressure, his heart rate was 130bpm and he was unresponsive. Blood tests indicated that he was in acute renal failure. His limbs were noted to be extremely tremulous. A metaraminol infusion was commenced

along with intra-venous antibiotics. Mr Henri was then noted to be much more alert with an increased blood pressure. At this time a possible diagnosis was made of opiate related sedation. He was admitted to the Intensive Care Unit.

In the following days there was some improvement in Mr Henri's condition. By 10 October he was considered sufficiently recovered for transfer to a Ward. However, the following day he was noted to be more drowsy and confused. He was febrile and blood tests showed a sodium level of 154 and a mild respiratory alkalosis. A chest x-ray showed right sided basal atelectasis with a small effusion. A family meeting was held and the goals of care for Mr Henri were discussed. It was decided that if he deteriorated further then palliative care would be considered.

Mr Henri continued to slowly deteriorate over the following days. On 13 October, after consultation with family members, a decision was taken to initiate palliative care. This was maintained until Mr Henri's death at 5.05 am on 15 October 2013.

Investigation:

A post-mortem examination was carried out by State Forensic Pathologist, Dr Christopher Lawrence. In Dr Lawrence's opinion the cause of Mr Henri's death was cerebral infarction and hypoxic brain damage due to the combined effects of ischaemic heart disease, aspiration pneumonia, Parkinson's disease and obstructive sleep apnoea. I accept this opinion.

In his report Dr Lawrence makes this comment: *"Clinically hypoxic injury secondary to opioid use for chronic pain on the background of obstructive sleep apnoea was thought to be a possible contributing factor to the death but this cannot be explained by toxicology."* Dr Lawrence goes on to explain, *"Unfortunately it does not appear that any toxicology has been done during the admission (to the RHH) and the bloods from admission appear to have already been discarded, so it is not possible to establish at this stage what the blood levels of the opiates were."*

The investigation has also included the following:

- (a) Consideration of an affidavit provided by Mrs Henri.
- (b) Consideration of a statement obtained from Ms Sally Hodder, Mr Henri's daughter.
- (c) A review of Mr Henri's records at the RHH and at the Home undertaken by Clinical Nurse Specialist, Ms Libby Newman.
- (d) Consideration of a report provided by Dr Riley.
- (e) Consideration of correspondence received from Dr Riley's solicitors.
- (f) Consideration of a report provided by the Home.

- (g) Consideration of reports provided by Dr A J Bell, as medical adviser to the Coroner.
- (h) A meeting attended by myself as Coroner, Dr Bell, Forensic Pathologists, Dr Lawrence and Dr Donald Ritchey, and Ms Newman where a full review of the circumstances surrounding Mr Henri's death and its investigation was considered.

The focus of this coronial investigation was upon the medical care received by Mr Henri whilst resident at the Home and its supervision by Dr Riley, most particularly with respect to the safe management of his medication. Upon these matters Dr Bell has expressed these opinions:

- Older adults generally have an increased pharmacodynamic sensitivity to morphine and initial doses are generally decreased from those recommended for younger patients. A reasonable approach is to decrease the 'usual' dose by 50% given at the same intervals and slowly titrate up until effective.
- The usual dose of morphine, in any form, is 30mg per day in divided doses. In this case the initial dose provided to Mr Henri was 30mg per day. A more prudent approach would have been to initiate the dose at 15mg per day.
- It seems that Dr Riley considered the dosage of morphine prescribed for Mr Henri to be appropriate on the basis that he was not opiate naïve, presumably because he considered the drug Tramadol to be an opiate. However, clinical studies suggest that clinically significant cross tolerance between Tramadol and morphine does not occur.
- The safe approach to starting morphine on a patient chronically taking Tramadol is to start at the recommended dose for the patient and consider that patient opiate naïve.
- The addition of morphine to quetiapine may have exacerbated the effects of the morphine.
- The normal ventilator response of the central nervous system to hypercapnia and hypoxemia is diminished with age and may lead to an exaggerated respiratory depressant of opioids. Patients may also be at risk of clinically significant respiratory depression when opioids are titrated rapidly, are administered in the setting of sleep apnoea syndrome or some other serious cardiopulmonary comorbidity that limits ventilator reserve or when the opioid is combined with a sedative/hypnotic. The cautious selection of the initial dose and conservative incremental dose titration limits the risk of respiratory depression.
- The records from the Home indicate a practice of carrying out clinical observations on a daily basis, usually around 10am. They further indicate that

no changes were made to this practice even after quetiapine and later morphine were added to Mr Henri's medication regime.

- That CPAP is not a form of mechanical ventilation and is not useful for the treatment of respiratory depression due to morphine. Rather, the role of CPAP is to provide positive pressure inside the airway to keep it open when there is airway obstruction during sleep. CPAP does not protect against sedation induced hypoventilation and hypoxia.
- The level of renal function assessed at the time Mr Henri presented at the RHH indicates at least a 4 day course of renal injury related to hypotension.

I accept these opinions.

Findings, Comments and Recommendations:

As advised by Dr Lawrence, the RHH did not retain a sample of Mr Henri's blood taken at the time of his presentation to the Emergency Department and hence it has not been possible to establish, by toxicology testing, the level of opiates in his blood at that time. This circumstance prevents me from making a positive finding that opioid overdose either caused or contributed to Mr Henri's death. Nevertheless, there are some aspects related to Mr Henri's drug management over the days preceding his hospitalisation which are concerning and upon which I should comment. They are:

- The decision by Dr Riley to administer morphine with a starting dose of 30mg per day when Mr Henri was elderly and opiate naïve. In my view, based upon the opinion of Dr Bell, a more appropriate course would have been to use a starting dose of 15mg.
- Dr Riley's expectation that the nursing staff at the Home would closely monitor Mr Henri after he was commenced on morphine. It seems this expectation was not realised as the Home records indicate that it did not alter its previous observation regime and only made clinical observations on a daily basis.

It is clear that the management of Mr Henri's pain presented a very real difficulty for Dr Riley and the Home's staff. With the benefit of hindsight it may have been prudent to have involved a pain-management specialist in his care.

For the reason explained, the absence of any ante-mortem blood samples has hindered this investigation. This leads me to **recommend** that all hospitals in this State investigate and, if reasonably practical, adopt protocols to ensure the identification of those patients who present with a possible drug-related illness and the retention of a sample of their blood, either until their discharge or, in the case of death, for provision to the State Forensic Pathologist or his assignee.

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* 1999. 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.

I conclude this matter by conveying my sincere condolences to Mr Henri's family and loved ones.

Dated the 12th day of November 2015 at Hobart in the State of Tasmania.

Rod Chandler
Coroner