



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 Nicolle Clare Hingston

Find that:

- (a) The identity of the deceased is Nicolle Clare Hingston;
- (b) Nicolle was born in Burnie on 8 January 2000 and was aged 14 years;
- (c) Nicolle died at the North West Regional Hospital (NWRH) in Burnie on 9 August 2014;
- (d) The cause of Nicolle's death was cardiorespiratory arrest resulting from end-stage pulmonary hypertension and cor pulmonale secondary to congenital heart disease (ventricular septal defect).

Background

Nicolle was a secondary student. She resided with her parents and sister in Penguin. She had a complex cardiac history as evidenced by this chronology:

- At aged 6 months Nicolle was diagnosed with ventricular septal defect, colloquially known as a 'hole in the heart'. She was referred to consultant cardiologist, Dr Brian Edis at the Royal Children's Hospital (RCH) in Melbourne, who confirmed the diagnosis but noted the absence of any evidence of heart failure. Thereafter she was reviewed every 6 months, initially by Dr Edis and then by paediatric cardiologist, Dr L Fong, also from the RCH.
- In October 2001, when Nicolle was aged 21 months, testing showed that she had developed pulmonary hypertension with right ventricular hypertrophy. One month later she underwent the surgical closure of her ventricular septal defect at the RCH. Her post-operative course was complicated by significant pulmonary hypertension.
- Following her surgery Nicolle was reviewed on a 6 monthly basis by consultant cardiologists up to March 2007. At about this time there was an incident at school when Nicolle collapsed whilst training for Little Athletics. She was seen by Professor Dan Penny, Director of Cardiology at the RCH, who recognised that she was becoming symptomatic with decreasing exercise performance and episodes of

fainting. Testing at the RCH confirmed significant pulmonary hypertension and she was placed on bosentan and Warfarin.

- The 6 monthly specialist reviews continued over the following years. During this time Nicolle participated in a 12-month clinical trial of bosentan which required her to take the medication thrice daily. According to her parents Nicolle did not appear to benefit from this trial.
- In early 2014 it was noted that Nicolle was becoming lethargic. There was a deterioration in her exercise tolerance and her general wellbeing. She was prescribed Sildenafil which seemed to be beneficial. She was also given iron supplements in recognition of the commencement of menstruation.
- Nicolle's father David reports that around 4 and 5 August Nicolle was menstruating and had *"very heavy bleeding."* In accordance with earlier medical advice her Warfarin was stopped.

Circumstances Surrounding the Death

At about 4.00am on 7 August Nicolle began to have difficulties breathing. She complained to her father that she had *"a very tight chest."* Mr Hingston called for an ambulance. However, by the time it arrived Nicolle's symptoms had abated, and her breathing had returned to normal. She was reluctant to go to hospital and the ambulance left. However, at about 7.00am Nicolle collapsed when she was walking to the car with her father and sister. Mr Hingston says that *"she lost consciousness for a minute or so."* He then drove her to the NWRH where she was admitted to the Paediatric Unit. She was assessed to be significantly anaemic with haemoglobin of 52. However, her vital signs were stable and she did not have any signs of significant cardiorespiratory compromise. She was transfused two units of packed red blood cells with no deterioration in her cardiorespiratory signs. Nicolle stayed in hospital overnight. Mr Hingston says that the next day *"she started to look better"* but that she *"was still menstruating heavily.....as my wife was taking her to the bathroom regularly."*

At the NWRH Nicolle's care was overseen by Consultant Paediatrician, Dr Bert Shugg. He was concerned by Nicolle's anaemic state and was unsure of its cause. He did not think it could be explained by her menstrual blood loss. Dr Shugg raised with interstate specialist, Associate Professor Michael Cheung, whether it may be attributable to the bosentan but he did not believe this to be likely. In the afternoon of 8 August Mr and Mrs Hingston were advised that they could take Nicolle home.

August 9 was a Saturday. Nicolle got up to go to the toilet but complained of still feeling tired. She went back to bed and Mrs Hingston then gave her breakfast-in-bed. This was at about 9.00am. Sometime between 11.00 and 11.30am Nicolle started having breathing difficulties. She again complained of a tight chest. Mr Hingston called the ambulance. At the moment it arrived Nicolle stopped breathing. The paramedics immediately began CPR. A second ambulance arrived to assist. Nicolle was then conveyed to the NWRH with CPR being continued en route. The ambulance arrived at the Emergency Department at

12.50pm. Attempts to revive Nicolle were unsuccessful. She was declared deceased at 1.04pm.

Post-Mortem Examination

This was carried out by pathologist, Dr Terry Brain. In his opinion the cause of Nicolle's death was cardiorespiratory arrest resulting from end-stage pulmonary hypertension and cor pulmonale secondary to congenital heart disease (ventricular septal defect).

Investigation

This has been informed by:

1. An affidavit obtained from Mr Hingston.
2. A report provided by Mr Dominic Morgan, Chief Executive Officer of Ambulance Tasmania, along with Patient Care Reports of Ambulance Tasmania.
3. A report from Dr Shugg.
4. A review of Nicolle's records at the NWRH carried out by Research Nurse, Ms L K Newman.
5. A report upon Nicolle's medical care and management compiled by Dr A J Bell, medical adviser to the coroner.
6. Meetings to monitor the investigation attended by myself, Ms Newman, Dr Bell and Forensic Pathologists, Dr Christopher Lawrence and Dr Donald Ritchey.

In his report Dr Bell includes this advice:

- That in his opinion Nicolle's sudden death appears to be related to continued blood loss and under transfusion in a patient with significant pulmonary hypertension.
- That Nicolle's treatment on 7 August with transfusion was appropriate. Before her discharge on that day Nicolle's vital signs appeared to be stable and her haemoglobin level had been increased to 71 g/L. However, a blood test done on 9 August showed a haemoglobin level of 58 g/L suggesting continuing blood loss.
- That patients with pulmonary hypertension who experience arrest rarely survive.
- That he agrees with the post-death assessment made by Dr Shugg and expressed in these terms: *"In the retrospective analysis of Nicolle's admission to the NWRH I consider that it may have been appropriate to transfuse her to a higher haemoglobin level as the volume of menstrual blood loss was under revealed but the risks of transfusion were understood by the medical staff and Nicolle's parents."*

- That also with the benefit of hindsight it may have been prudent to have kept Nicolle in hospital for a second night to monitor her blood loss and haemoglobin level.
- That in his opinion the level of care provided by the NWRH was of a good standard.

Findings, Comments and Recommendations

I accept Dr Brain's opinion upon the cause of death.

It is apparent that Nicolle's menstruation and consequential blood loss adversely impacted upon her underlying and pre-existing pulmonary hypertension. It is apparent too, as Dr Shugg has since acknowledged, that the extent and continuation of Nicolle's blood loss was not fully appreciated when she presented at the NWRH on 7 August 2014. In the result she was under-treated during this admission and perhaps prematurely discharged. However, this is an assessment made with the benefit of hindsight and does not cause me to be critical of the hospital care provided to Nicolle. Rather, I accept the opinion of Dr Bell that overall the level of care provided at the NWRH was of an acceptable standard.

Nicolle's death has been a tragic event and I extend my sincere condolences to her family and loved ones for their loss.

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, cause of death, relevant circumstances concerning how her death occurred, and the particulars needed to register her 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.

Dated: 17 November 2016 at Hobart in the State of Tasmania.

Rod Chandler
Coroner