MAGISTRATES COURT *of* TASMANIA

CORONIAL DIVISION

RECORD OF INVESTIGATION INTO DEATH (WITHOUT INQUEST)
Coroners Act 1995 (Sections 28-29)
Coroners Rules 2006 (Rule 11)

I, Rod Chandler, Coroner, having investigated the death of Margaret Wynne Newett

Find that:

a) The identity of the deceased is Margaret Wynne Newett;

b) Mrs Newett was born in Queenstown on 27 January 1936 and was aged 77 years;

c) Mrs Newett died at the North West Regional Hospital (NWRH) in Burnie on 5 January 2014; and

d) The cause of Mrs Newett's death was the combined effects of ischaemic heart disease and calcific aortic valve sclerosis.

Background

Mrs Newett resided at 14 Fysh Street in Queenstown. She was a widow, her husband Milton having died in January 2013. They had four children. Mrs Newett's medical history included a splenectomy in 1995 and hypertension.

Circumstances Surrounding the Death

In mid-2011 Mrs Newett attended her doctor in Queenstown for a medical assessment required for the renewal of her driving licence. On examination, a systolic cardiac murmur was detected and Mrs Newett was referred to cardiologist, Dr D in Burnie. Dr D saw Mrs Newett on 29 June 2011. In his view Mrs Newett was suffering from moderate aortic stenosis which was asymptomatic. He recommended medical therapy and further review if she became symptomatic or if her doctor thought it warranted.

In mid-2013 Mrs Newett was again medically assessed for the purposes of her driving licence. On this occasion her doctor noted that she had two years previously been diagnosed with aortic stenosis. The notes went on to state; "*Does not have any dizzy spells/blackouts. No consult in past two years with any symptoms relating to dizziness/blackouts. BP 140/80*."

It seems that Mrs Newett did not report or demonstrate any symptoms or signs of aortic stenosis until 30 December 2013. On this day she collapsed in a Queenstown supermarket. She was attended by officers from Ambulance Tasmania. She had been apparently unconscious for several minutes. There was no associated chest pain or breathlessness. She had become

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incontinent during the collapse. She was taken by ambulance to the West Coast District Hospital (WCDH). On examination an aortic stenosis murmur was noted. Vital signs and neurological examination were normal. An ECG was taken which was abnormal. Advice was then sought by telephone from the cardiology unit at the Launceston General Hospital (LGH). Contact was made with cardiology registrar, Dr Ramanathan Parameswaram. He asked to see the ECG and a digital copy was provided. His interpretation of the ECG was: "*Sinus rhythm, Heart rate 81/min Left bundle branch block with secondary ST-T changes.*" The notes at the WCDH also include this entry; "*Discussed with Dr Ran(?) at LGH. He advised against getting Troponins done, advised to be referred for echo on outpatient basis…"*

Mrs Newett remained in the WCDH for 24 hours for observation. She remained stable and pain free. Her clinical observations were within normal limits. When discharged the plan was for her to see her general practitioner and to arrange a referral for a carotid Doppler scan and an echocardiogram.

On 2 January 2014 Mrs Newett attended General Practitioner Dr Vincent Jain. Her recent syncope (faint) was noted along with her moderate aortic stenosis. He suggested; "*that Mrs Newett should not drive and that she be again reviewed by Dr D*." A letter of referral was prepared.

On 3 January Mrs Newett's son Scott telephoned Dr D's rooms to enquire whether he had received a referral from Dr Jain and whether an appointment had been made for his mother. Mr Newett in fact spoke to Dr D in person who advised him that he would be on leave until 1 April 2014 and thus would not be able to see Mrs Newett prior to this date. Subsequent to this members of Mrs Newett's family made contact with the Cardiac Centre at the Calvary Hospital in Hobart and arranged an appointment for Mrs Newett to see Cardiologist, Dr Andrew Black on 8 January 2014.

On 4 January 2014 Mrs Newett was travelling in a motor vehicle with family members when she became unconscious. An ambulance was called and she was conveyed to the NWRH. At the hospital Mrs Newett's ECG was unchanged. The blood troponin level was elevated indicating myocardial damage. Mrs Newett was treated for acute myocardial infarction with aspirin, clopidogrel and therapeutic heparin. The noted plan was for the hospital to liaise with the cardio-thoracic unit at the Royal Hobart Hospital the following morning.

At 3:50am on 5 January Mrs Newett was transferred to the NWRHs High Dependency Unit following a further syncope episode. At this time the ECG record showed left bundle branch block with severe ischaemic changes. She was severely hypotensive. Thereafter, Mrs Newett developed rapid atrial fibrillation and suffered a cardiac arrest. Resuscitation efforts were maintained for about 25 minutes but Mrs Newett could not be revived. Her death was recorded at 4:54am on 5 January 2014.

Post Mortem Examination

This was carried out by State Forensic Pathologist, Dr Christopher Lawrence. Dr Lawrence has recorded that the "*autopsy reveals calcific aortic valve sclerosis with moderate aortic stenosis. There is also severe ischaemic heart disease with 80% narrowing of the left anterior descending coronary artery with haemorrhage into a plaque.*" In his opinion Mrs Newett died from the combined effects of ischaemic heart disease and calcific aortic valve sclerosis.

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

Investigation

This has included the following:

1. A review of Mrs Newett's records at the Queenstown General Practice, the WCDH and the NWRH undertaken by research nurse, Ms Libby Newman.

2. The obtaining of affidavits from Christopher Newett and Scott Newett, both sons of the deceased.

3. Consideration of a report provided by Dr D.

4. Consideration of a report provided by Dr Parameswaram.

5. Compilation of a report upon Mrs Newett's medical and hospital care made by Dr A J Bell as medical adviser to the Coroner.

6. A meeting attended by myself, Dr Bell, Ms Newman, Dr Lawrence and Forensic Pathologist, Dr Donald Ritchey to review the investigation.

In his report Dr Bell provides this advice and opinion:

- The most common presenting symptoms for aortic stenosis are decreased exercise tolerance, exertional dizziness and exertional angina. However, some patients can be asymptomatic for a prolonged period. Heart failure, syncope and angina are all 'classic' symptoms reflecting the end-stage of the disease.

- Serial transthoracic echocardiogram (TTE) play an integral role in the longitudinal management of patients with aortic stenosis and the frequency of routine follow up studies is determined by the severity of the disease. When Mrs Newett saw Dr D in June 2011 she was diagnosed with moderate asymptomatic aortic stenosis. The 2006 American College of Cardiology/American Heart Association guidelines recommend that a patient with this diagnois receive a follow-up TTE every 1-2 years.

- It was unrealistic to expect the medical staff at the WCDH to be able to fully interpret the ECG taken on 30 December 2013 and it was good practice for advice to be sought from the LGH's cardiology unit.

- Dr Parameswaram's interpretation of the ECG was not complete. Dr Bell opines; *"In the leads V5 and V6 in LBBB the T wave should be in the opposite direction from the QRS complex. The T waves were upright. This is called pseudonormalization of the T wave. This suggests there is a secondary problem, and this is not just LBBB. The most likely issue is ischaemia and/or infarction of the heart tissue. The sign is not diagnostic but suggestive."*

- Mrs Newett required a blood test on 30 December to determine her troponin level. It is most likely that the test would have shown an increased troponin level indicative of some heart damage. The test could have been done at the WCDH and involves a five minute process.

- Mrs Newett's syncope, her previous diagnosis of aortic stenosis, the ECG and a likely elevated troponin level required her immediate transfer to the Royal Hobart Hospital (RHH) on 30 December 2013 for treatment in its cardiac unit.

- Had Mrs Newett been transferred to the RHH it is likely that she would have been assessed for possible aortic valve replacement and coronary artery angioplasty or grafting. The prospects of survival are excellent during the prolonged asymptomatic phase but decline rapidly after the development of symptoms. Aortic valve replacement prevents this rapid downhill course.

Findings, Comments and Recommendations

The evidence clearly shows that Mrs Newett was diagnosed with moderate aortic stenosis in mid-2011. It is my understanding that this condition is progressive but the rate of progression is variable. It is for this reason that it requires monitoring, most particularly with the aid of TTE, which enables the identification of a deteriorating patient who will benefit from surgery before end-stage symptoms appear.

It is evident that the seriousness of Mrs Newett's condition was not fully recognised post its diagnosis and in the result opportunities were lost to possibly avoid her regrettable death.

Firstly, it seems clear that no steps were taken for Mrs Newett to have a follow-up TTE within 2 years of her diagnosis contrary to the guidelines identified by Dr Bell. Given the findings upon autopsy it is likely that a TTE would have revealed a worsening of Mrs Newett's aortic stenosis and been a prompt for further investigation and possible surgery.

Secondly, I accept that Mrs Newett's syncope on 30 December 2013 was, as advised by Dr Bell, a sign of end-stage aortic stenosis with or without coronary artery disease. Its occurrence, in the context of Mrs Neweitt's earlier diagnosis, required Mrs Newett's immediate referral to a hospital properly resourced to evaluate her condition and to implement appropriate treatment. The cardiology unit at the RHH was the most suitable venue. I am satisfied that this did not occur largely because of the telephone advice provided by Dr Parameswaram. That advice was less than optimal for several reasons. Firstly, I accept Dr Bell's opinion that Dr Parameswaram should have advised that Mrs Newett's troponin level be tested. It's likely that the test would have been positive reinforcing the need for an urgent response to Mrs Newett's situation. Secondly, I accept Dr Bell's criticism of Dr Parameswaram's interpretation of the ECG. Again, a more fullsome interpretation should have helped to make clear the seriousness of Mrs Newett's situation. Irrespective of these matters it is my view that Dr Parameswaram, as a cardiology registrar, should have known that a syncope occurring in the presence of diagnosed aortic stenosis indicated a serious situation which mandated a referral to a hospital such as the RHH.

The third lost opportunity was on 2 January 2014 when Mrs Newett attended Dr Jain. His decision made on that day to refer Mrs Newett back to Dr D on a date to be determined was not an appropriate course to take in the light of the seriousness of Mrs Newett's condition. However, I do recognise that Dr Jain was, in all probability, influenced in this decision by the advice received from Dr Parameswaram 3 days previously.

In the result, I have come to the view that Mrs Newett's death may have been avoided if those persons involved in her medical care had recognised the seriousness of her condition and responded in a more urgent and pro-active manner. Her tragic death should serve as a reminder

that aortic stenosis is a life threatening condition which requires careful monitoring and an urgent response to clear signs of its progression.

The communication between the WCDH and Dr Parameswaram leads me to **recommend** that the LGH give consideration to adopting protocols around its telephone advice to outlying health facilities. Those protocols should include:

- A requirement to keep a written record of the communication.
- A requirement for a consultant to be informed of the advice at the first opportunity in those instances where the advice has not been provided by a consultant.
- A requirement that ECGs be reported upon by a consultant.

It is my understanding that the more remote parts of Tasmania such as the West Coast are serviced by short-stay medical practitioners. In the result patients often do not see the same doctor twice. This makes very difficult the management of chronic progressive diseases such as aortic stenosis. This in turn leads me to **recommend** that the State's health authority gives consideration to adopting a practice whereby all patients diagnosed with moderate to severe aortic stenosis are referred to the cardiology unit at the RHH for an annual review of their condition.

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. The circumstances of the death do not require me to make any further comment or to make any further recommendations.

I extend my sincere condolences to Mrs Newett's family and loved ones.

Dated: 21 day of April 2016 at Hobart in the State of Tasmania.

Rod Chandler
CORONER