

MAGISTRATES COURT of TASMANIA

CORONIAL DIVISION

Record of Investigation into Death (Without Inquest)

Coroners Act 1995 Coroners Rules 2006 Rule 11

I, Robert Webster, Coroner, having investigated the death of Anne Helen Pedler

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

- a) The identity of the deceased is Anne Helen Pedler (Mrs Pedler);
- b) Mrs Pedler died while "ramped"¹ at the Launceston General Hospital (LGH) for a period of almost 8 hours;
- c) Mrs Pedler's cause of death was multiple pulmonary thromboemboli and deep vein thrombus; and
- d) Mrs Pedler died on 6 August 2022 at Launceston, Tasmania.

Introduction

In making the above findings I have had regard to the evidence gained in the comprehensive investigation into Mrs Pedler's death. The evidence includes:

- Police Report of Death for the Coroner;
- Tasmania Health Service (THS) Death Report to Coroner;
- Affidavits as to identity;
- Report of the forensic pathologist Dr Donald Ritchey;
- Email received from Mrs Pedler's daughter, Stella Jennings;
- Electronic patient care record obtained from Ambulance Tasmania (AT);
- Records obtained from Mrs Pedler's general practitioner;
- Root Cause Analysis (RCA) report of the THS;
- Report of the coronial medical consultant Dr Anthony Bell MD FRACP FCICM; and

¹ Being ramped or ramping occurs when a person is taken to hospital by ambulance but cannot be admitted to the emergency department because it is full and there are no beds available. In these circumstances the patient might remain in the ambulance until a bed becomes available.

 Response to Dr Bell's report from the Executive Director, Medical Services, THS North West and the Acting Executive Director, Medical Services, THS North, Clinical Associate Professor Kathleen Atkinson.

Background

Mrs Pedler was 71 years of age (date of birth 13 February 1951), married and retired at the date of her death. Mrs Pedler was raised on a farm in rural Victoria which contributed to her lifelong love of animals. She had a supportive and close-knit family. Her grandparents were actively involved in her upbringing a trait she continued when she herself became a grandmother. Her father, who she was very close to, passed away when Mrs Pedler was just 13 years of age. This is something from which she never fully recovered.

Mrs Pedler met her husband, Michael, when they were in their early 20s. They married in 1973. At the time Mrs Pedler worked as a book keeper and Mr Pedler worked in an abattoir. They had a daughter, Stella, who was born in 1976. From that point Mrs Pedler remained at home to look after her daughter while Mr Pedler took on a second job. Once Stella commenced school Mrs Pedler used her cooking talents, friendly personality and account keeping skills to open a cafe, in partnership with a friend, in Fairfield a suburb of Melbourne. Unfortunately, soon thereafter, Mrs Pedler became very ill with pneumonia and was hospitalised for 3 months. On her discharge she was advised to move to a hot, dry climate and so the family moved to Mildura.

Because she wanted to use her cooking skills and work with children she obtained a position as the canteen manager at a local high school where she remained the rest of her working life. She enjoyed her work and was well liked by students and staff. Over the years she completely revamped the school menu replacing most processed, pre-packaged foods with home-made meals. She also introduced a program which provided free breakfasts to students who were unable to have breakfast prior to coming to school.

When Mrs Pedler was 55 years of age she suffered a severe workplace injury which resulted in torn knee tendons and the early onset of arthritis. She received a significant amount of treatment including knee replacement surgery but in time it became evident she would no longer be able to stand on her feet all day at work. At that time her first grandson was born and so Mr and Mrs Pedler moved into a granny flat at the rear of her daughter's home. From that point Mr and Mrs Pedler were present to assist their daughter and son-in-law with their first grandson and their second grandson who was born 3 years later. They were also of course

present for the landmark moments in the lives of both grandsons. When her daughter and sonin-law decided to move their family to Tasmania 3 years ago Mr and Mrs Pedler did not hesitate to move as well.

Circumstances Leading to Death

On 5 August 2022 paramedics were called to Mrs Pedler's home in Kings Meadows as she was suffering from shortness of breath. At around midday on that day Mrs Pedler had taken a dose of cannabinoid oil which was prescribed by her general practitioner for severe left knee osteoarthritis. Mr Pedler says his wife had been suffering from shortness of breath progressively for the past week along with severe leg pain. The leg pain had also been aggressive and her leg had continued to swell hence causing a greater level of pain. Mrs Pedler then became nauseous and started vomiting so Mr Pedler called an ambulance.

Mrs Pedler was transported to the LGH and medically reviewed. An electrocardiogram was performed, reviewed and abnormalities were documented. Additional history was obtained and clinical examination found unchanged vital signs. A pulmonary embolism was considered to be the diagnosis. Pathology tests were run and a CT scan of the pulmonary arteries was requested but not performed. At approximately 8:30am on 6 August 2022 and while still ramped and under the care of AT Mrs Pedler suffered a cardiopulmonary arrest and could not be revived.

Investigation

The THS death report to the Coroner indicates the cause of death is unknown however the possibility is raised of a massive pulmonary embolism. This document notes the history in respect of a shortness of breath which had progressed over the last week together with leg pain. The report goes on to say "[m]ajor access block issue. Patient stayed under shared ambulance + hospital care for over 7 hours, due to lack of beds in the emergency department. No concern about actual treatment given."

Dr Ritchey conducted a post-mortem examination on 9 August 2022. He noted Mrs Pedler was short of breath for a week with severe leg pain. She suddenly died awaiting a CT pulmonary angiogram (CTPA) which is a CT that looks for blood clots in the lungs. This condition is also known as pulmonary embolism. The autopsy revealed multiple small pulmonary thromboemboli (bloodclots) and artherosclerotic coronary vascular disease. After conducting his examination, considering medical records, photographs and other documents Dr Ritchey says Mrs Pedler died of multiple pulmonary thromboemboli. These are blood clots which can suddenly block arteries that supply blood to the lungs. The blood clot can form elsewhere in the body such as in the deep veins of the legs, pelvis, abdomen or in a heart and travel to the lungs. I accept Dr Ritchey's opinion.

The records of Mrs Pedler's general practitioner reveal she underwent a right knee replacement in 2018 and had suffered from obesity. Her medication was cannabis oil, Moduretic and Nexium. Despite the knee replacement and subsequent physiotherapy treatment she suffered from continual pain in the right knee. Mrs Pedler also suffered from left knee pain but did not wish to have any surgery given the poor surgical outcome with the right knee.

The records of AT indicate the call to assist Mrs Pedler was received at 11:36pm on 5 August 2022 and the ambulance was at her home 15 minutes later. She was loaded into the ambulance at 12:30am and she arrived at the LGH at 12:45am on 6 August 2022. AT personnel conducted a vital signs survey at 11:57pm on 5 August 2022, and at 12:15am, 12:30am and 12:45am on 6 August 2022. Further records indicate observations by AT personnel in respect of Mrs Pedler were recorded at 1:45am, 2:30am, 3:15am, 4:15am, 5:30am, 6:20am, 7:20am and 7:40am on 6 August 2022.

The records of AT and the LGH indicate Mrs Pedler gave a history of a dry cough for one week with occasional episodes of shortness of breath. At 10:30pm on 5 August 2022 she stood up and had a sudden onset of shortness of breath, nausea and vomiting. She felt dizzy and fatigued. On examination she was alert, tachycardic (120 BPM), hypotensive (blood pressure 70 to 80 mmHg systolic) and tachypnoeic² respiratory rate of 24 to 30 BPM³. The oxygen saturation was 88% on ambient air⁴, afebrile⁵ and the chest was clear on auscultation⁶. Treatment was with an antiemetic⁷, oxygen and intravenous fluid. Mrs Pedler walked a short distance to the stretcher before becoming nauseated, pale and dizzy. She arrived at the emergency department of the LGH at 12:45am on 6 August 2022. She was medically reviewed at 1:30am. An electrocardiogram (ECG)⁸ taken at that time shows sinus tachycardia⁹, an

⁵ Not feverish.

² Abnormally rapid and shallow breathing.

³ 12-20 breaths per minute (BPM) is considered normal.

⁴ A healthy oxygen saturation level ranges between 95% and 100%. It is often suggested medical attention should be sought if a person's oxygen saturation level is 92% or lower.

⁶ Listening for sounds from the heart, lungs or other organs typically through the use of a stethoscope.

⁷ A drug which prevents vomiting.

⁸ This test records the electrical signals from the heart which can be used to check for different heart conditions.

⁹ An irregular cardiac rhythm in which the heart beats faster than normal.

incomplete right bundle branch block¹⁰ and SIQ3T3 which is the signal on an ECG consistent with pulmonary embolism. The ECG was reviewed and abnormalities documented¹¹.

Additional history was obtained. There was no chest pain, no calf pain and no change in leg swelling. There was left knee pain for I month which was limiting mobility. Mrs Pedler usually had bilateral leg oedema or swelling. Clinical examination found unchanged vital signs. There was no diaphoresis; that is excessive sweating due to a secondary condition. Heart sounds were normal with an added diastolic murmur not further characterised. There was decreased breath sound in the right upper lobe (of the lung). Both calves were non-tender but the legs were swollen. The case was discussed with the medical officer in charge and a working diagnosis was made of pulmonary embolism.

There was microcytic anaemia¹² and an elevated neutrophil count with hypersegmentation. Mrs Pedler's liver enzymes were elevated and her albumin was low. There was an acute kidney injury and hypokalaemia¹³. The C reactive protein was not suggestive of bacterial infection. The blood lactate was 4.4 mmol/L. A normal reading is less than 2.2 mmol/L, whereas a reading over 2.2 mmol/L indicates circulatory failure. The blood glucose was elevated. A CT scan of the pulmonary arteries was requested overnight but was not performed. At 8:30am Mrs Pedler was still "ramped" when she suffered a cardiopulmonary arterist.

The important passages from the RCA are as follows:

It was noted Mrs Pedler remained in the care of ambulance paramedics due to no beds being available. "Although the RCA team identified that communication between clinicians involved in the patient's care was good, with the patient's working diagnosis of a pulmonary embolus being made known to all clinicians involved in the patient's care, it was identified that the roles and responsibilities of the various clinicians in this shared care situation are not known by new medical staff in the department, due to lack of provision of this information during orientation". It was recommended there be a review of the ED orientation program for new medical staff to include roles and responsibilities of clinicians for patients in transfer of care delay.

¹⁰ A right bundle branch block is a problem with the right bundle branch that keeps a heart's electrical signal from moving at the same time as the left bundle branch; a bundle branch being the pathway along which electrical impulses travel to make the heart beat.

¹¹ See page 26 of the LGH records.

¹² This condition occurs when a person's red blood cells are smaller than usual because they do not have enough haemoglobin.

¹³ Low potassium levels.

- "The absence of a previous health record for the patient added to the unknown complexity of the patient's condition and contributed to a delay in diagnosis and treatment. Previous history or diagnostics were not available to provide a baseline for the patient resulting in a significant delay in ordering the diagnostic computing tomography pulmonary angiogram (CTPA), due to awaiting blood results to become available that were required to inform the electronic radiology request; and ultimately empirical anticoagulation not being initiated in the absence of a definitive diagnosis."
- "Although the pathology request was marked urgent and the bloods were withdrawn and sent to pathology without delay, a follow-up phone call alerting the on-call pathologist to the urgency of these results did not occur. Consequently, the results did not become available until hours later. The RCA team was informed that although a 24-hour pathology service does not operate at the hospital, staff are often present due to workload requirements. This does not however negate the need to call via the hospital switchboard to notify the urgent test requirements. The RCA team identified the process of calling pathology out of hours for conducting urgent testing is not well known by staff, is not written in a guiding document, nor forms part of a new medical staff orientation to the emergency department. The RCA team recommends the process for calling pathologists for urgent testing, both within and out of hours, be documented in a protocol or guideline and be included in new medical staff orientation to the emergency department."
- "An urgent CTPA was determined necessary to provide a definitive diagnosis for the patient and as such form part of the initial medical plan. The RCA team identified a significant delay in ordering this scan due to waiting for urgent blood results to be returned, and unfamiliarity of the electronic ordering system (TrakED) by medical staff. As a result of this delay, the scan was not ordered until 03:41 hours, by which time a radiographer was not on site to receive the request. A phone call alerting of the urgent request was not made until 07:13 hours due to this requirement not being known to medical staff involved. An agreement was made at this time to wait until the commencement of the daily shift radiographer, however shortly after this, the patient deteriorated significantly and died without the scan being performed. The RCA team identified there is not a 24-hour radiology service at the hospital, nor is there sufficient information provided during orientation to the emergency department for new medical staff relating to ordering of radiological tests out of hours. The RCA team recommend considering the feasibility of 24 hour on-site medical imaging practitioners at the hospital, and the emergency department to review medical staff orientation to include key work processes such as how to request urgent diagnostic tests out of hours."

- "The RCA team found that while the medical staff involved in the care of the patient were skilled, concerns were raised about the adequacy of orientation received upon commencement relating to key work processes. The RCA team recommend a review of medical staff orientation to the emergency department to include key work processes such as how to request urgent diagnostic tests out of hours."
- "The RCA team identified from staff interviews and relevant shift reports, that the emergency department at the time of, and leading up to, the patient's presentation, was busy with high numbers of consumers within the department. Although the escalation criteria for calling the on-call emergency department consultant for support or advice overnight was not activated during the time the patient was present, information the RCA team received is indicative that this should have occurred. The RCA team recommend emergency department staff responsible for calling the on-call consultant when escalation criteria are met, such as registrars, locum medical staff, Associate Nurse Unit Managers, receive refresher education on these requirements."
- "Medical imaging staff receive requests from the emergency department that are generated by the electronic system TrakED in a hard copy that is printed from a single printer located within the medical imaging department. After hours when medical imaging staff are not present in the department, the printer is not checked for requests and hence staff are only alerted to urgent requests via a phone call. There is currently no way for imaging staff to see all requests electronically which can result in staff being required to attend the hospital on multiple occasions during their on-call period, contributing to fatigue. The RCA team identified that medical imaging staff do not have access to TrakED to visualise all medical imaging requests for patients within the emergency department, which could assist to minimise the number of call-ins out of hours. The RCA team recommended read-only access to TrakED is provided to all medical imaging staff to assist with workflow and to ensure all requests are actioned in a timely manner."
- "The RCA team were unable to identify a protocol or guideline in place relating to requesting of urgent pathology testing for the hospital. The absence of a guiding document, along with inadequate staff orientation to the department, resulted in medical staff involved in the patient's care being unaware of the requirement to find the on-call pathologist for urgent testing after hours and contributed to the delay for the patient receiving the appropriate treatment. The RCA team recommends a protocol or guideline be developed by the pathology department that outlines requesting processes, both within and out of hours, for urgent and non-urgent pathology testing."

- "The RCA team identified an after-hours medical imaging request protocol exists for the hospital, however the detail provided is insufficient for clinical guidance. The differing referral methods, paper-based or electronic, and follow-up requirements for requesting urgent diagnostic radiological tests, are not included within this document. The RCA team recommend this inclusion.
- "The emergency department during the time the patient was present, was at capacity, with a high acuity load. The RCA team were informed that over 3 shifts the number of people within the department went from 57 at 15:00 hours, to 55 at 21:30 hours, to 42 at 07:30 hours. There were patients in transfer of care delay for all these shifts. Bed availability within the hospital was minimal despite the utilisation of flex capacity, and all purchased beds at the private hospital were occupied. Medical staffing on the night shift, covering the predominant period the patient was in the emergency department, was adequate with nil deficits. Meanwhile the nursing cohort within the emergency department was deficient by 5 staff. The RCA team identified this nursing deficiency to have contributed to workload pressures and a delay in some tasks being completed for the patient, including initiation of intravenous therapy."
- "Staff report the patient could communicate without assistance, evidenced by her interactions
 with staff and her family over the phone. As a result of her ability to communicate well, the
 patient's family were not contacted by staff during the night, until her rapid deterioration in the
 morning. Relying on the patient to transfer information to her family may have potentially
 resulted in information regarding the seriousness of her condition not being portrayed as such.
 The RCA team has not made any recommendations in relation to this"
- "On investigation, the RCA team found that the patient died from multiple pulmonary thromboemboli that was potentially survivable if empirical anticoagulation treatment had been initiated in the emergency department. A delay in diagnostic testing, contributed to by a lack of patient health records containing relevant past medical history, and knowledge of the process for requesting urgent diagnostics, was a significant factor affecting the management of this patient".
- "The RCA team determined the root cause of the patient's death to be:

Initiation of empirical treatment did not occur due to delay in diagnostic testing, contributed to by unknown patient history and lack of knowledge of organising urgent diagnostic scans."

Dr Anthony Bell, the coronial medical consultant, has examined the medical care provided at the LGH emergency department. He considered all the records mentioned above. He also provided some background information with respect to acute pulmonary embolism (PE) which he says is a form of venous thromboembolism (VTE) which is common and sometimes fatal. The clinical presentation of PE is variable and often non-specific which makes its diagnosis challenging. He says the evaluation of patients with suspected PE should be efficient so that patients can be diagnosed and therapy administered quickly to reduce the associated morbidity and mortality. Dr Bell reports the failure to diagnose PE is a serious management error since 30% of untreated patients die, while only 8% succumb with effective therapy and most of those occur in the first 24 hours after presentation.

Dr Bell says PE has a wide variety of presenting features which range from no symptoms to shock or sudden death. The most common presenting symptom is dyspnoea¹⁴ followed by chest pain (classically pleuritic but often dull) and a cough. However, many patients, including those with large PE, have mild or non-specific symptoms or are asymptomatic.

Some patients have a delayed presentation over days or even weeks. One prospective study reported patients with a delayed presentation beyond one week tended to have larger, more centrally located PE compare with patients who present within 7 days (41% versus 2%). Symptoms and signs of PE may also evolve over time such that patients who initially present with mild symptoms may become increasingly symptomatic or haemodynamically unstable, sometimes very quickly (minutes to hours). This may be secondary to recurrent embolisation or progressive pulmonary hypertension secondary to vasoconstriction. Similarly, as a pulmonary infarct evolves, patients may develop progressive dyspnoea, hypoxemia¹⁵, pleuritic pain¹⁶ and hemoptysis¹⁷.

Dr Bell says that patients who are haemodynamically unstable and in whom definitive imaging is unsafe, bedside echocardiography or venous compression ultrasound may be used to obtain a presumptive diagnosis of PE to justify the administration of potentially life-saving therapies. "Once the diagnosis is made, the mainstay of therapy for patients with confirmed PE is anticoagulation or thrombolytic therapy, depending upon the risk of bleeding. When the pre-test probability of PE is high or diagnostic imaging will be delayed, anticoagulation is sometimes started before a diagnosis of PE is confirmed."

For patients who remain haemodynamically unstable (systolic pressure less than 90mmHg for 15 minutes or longer or clear evidence of shock) despite adequate resuscitation, definitive

¹⁴ Shortness of breath.

¹⁵ Lower than normal blood oxygen level.

¹⁶ Sharp chest pain.

¹⁷ Coughing up blood.

testing is typically considered unsafe. In these circumstances, bedside lower extremity ultrasonography and/or transthoracic echocardiography may be used to obtain a presumptive diagnosis of PE. In this population of unstable patients, a presumptive diagnosis of PE may justify the administration of potentially life-saving therapies.

In this case Dr Bell says Mrs Pedler presented with circulatory failure on the basis of the medical history and clinical examination. The circulatory failure caused acute kidney injury, liver injury, hyperlactatemia and a presumption of PE was made. On the basis of the circulatory failure and ECG appearance¹⁸ Dr Bell says the prognosis is guarded and immediate treatment was essential. The decision between thrombolysis and anticoagulation would be dependent on factors which were not recorded in the medical assessment. There is a standard list of questions that determine if thrombolysis has a significant risk of bleeding. Dr Bell notes the medical officer in charge, who was the night registrar, performed a point of care cardiac ultrasound examination. Dr Bell says this is a focused unaccredited study. The study was difficult due to Mrs Pedler's morbid obesity. There was slight bulging of the right ventricle and the right ventricle dominated intra-ventricular septum which is evidence of PE and right heart strain. Dr Bell says based upon this study there was sufficient evidence to immediately anticoagulate or treat with thrombolytic (clot busting) medication. If it was safe he says thrombolysis is the better option. He notes the emergency department had 25 patients admitted that evening and the hospital was bed blocked. Accordingly Mrs Pedler was ramped for a long time and may have had less attention and consideration as a result.

Dr Bell says the diagnostic approach appeared to be to wait until the CT scan result of the pulmonary arteries was available which proved PE was present. He notes from the RCA the CT radiographer who was not present was not called in. Dr Bell concludes as follows:

"The severity of the patient's illness was underestimated in the extreme. No viable plan was formulated, there was no consideration of treatment before a definite diagnosis. Thrombolytic drug was given after the cardiopulmonary arrest.

The management of the patient was below acceptable standard of care.

The RCA does not consider the medical issues but addresses many factors making the case more complex than needed."

I accept Dr Bell's opinion. He is eminently qualified to provide this opinion.

¹⁸ Dr Bell says the ECG abnormalities in this case are associated with a poor prognosis. Although that test was reviewed and the abnormalities were documented he says there is no interpretation. The time of reading is not recorded. In the ED he says ECGs are usually shown to the doctor when done.

A copy of Dr Bell's report was provided to the LGH for comment and a response was received from Clinical Associate Professor Kathleen Atkinson whose role in the THS is set out on page 2 above. In that response she summarises the findings in the RCA report. She advises "[a]Il recommendations of the RCA investigation have been considered, are in process and will be implemented within the recommended time frames. On behalf the Tasmania Health Service, I offer my condolences to the family of Mrs Pedler." The RCA was signed off on 22 November 2022. Some of the recommendations were to be completed within 3, 6, 8 and 12 months. Some of them should have therefore been implemented by now with all of them due for implementation by the end of November this year. In the response received from THS there is no criticism or comment upon Dr Bell's opinion.

Summary

Mrs Pedler's presentation at the LGH given the medical history and clinical examination suggested she was suffering from circulatory failure. A presumptive diagnosis of PE, which was correct, was made however the severity of her illness was, as Dr Bell says, *"underestimated in the extreme"*. Immediate treatment by way of thrombolysis or anticoagulation was essential. That treatment was not provided and Mrs Pedler died. The medical treatment she received was substandard. In addition the ambulance and paramedics were tied up at the hospital thereby making them unavailable for use in other emergencies.

It is reasonable to conclude the standard of medical treatment received by Mrs Pedler was heavily influenced by the fact that not only was there no bed available for her but there was also a lack of nursing staff on duty. In addition there was no CT radiographer available although he or she was not required if the immediate treatment identified by Dr Bell was administered.

While I recognise the THS has conducted a comprehensive RCA and the recommendations, once implemented, will improve system processes they will not overcome what occurred in this case. There were simply too many people requiring medical care from the emergency department at the time of Mrs Pedler's arrival. It is well known significant pressure is being exerted on emergency departments Australia wide because of resourcing issues and the availability and cost associated with people attending a general practitioner instead.

While I cannot say Mrs Pedler would have survived if she had received appropriate treatment in a timely manner I can say her chances of survival would have been significantly increased had she received the treatment recommended by Dr Bell. Sadly it seems to me until issues associated with the resourcing of emergency departments and access to general practitioners are resolved, by those with the responsibility and power over such issues, cases like this one will continue to occur. I am pessimistic about any progress being made on this front given the RCA and the response from Clinical Associate Professor Atkinson are silent about what THS proposes to do about ramping. If the THS is not looking at ways to resolve this issue then clearly it should be.

The circumstances of Mrs Pedler's death are not such as to require me to make any further comment or any recommendations pursuant to Section 28 of the *Coroners Act* 1995.

I convey my sincere condolences to the family and loved ones of Mrs Pedler.

Dated: 5 May 2023 at Hobart in the State of Tasmania.

Robert Webster Coroner