IN THE CORONERS COURT
OF VICTORIA
AT MELBOURNE

Court Reference: COR 2017 6132

FINDING INTO DEATH WITHOUT INQUEST

Form 38 Rule 60(2)
*Section 67 of the **Coroners Act 2008***

Findings of:	Coroner Jacqui Hawkins
Deceased:	Maria Kerr
Date of birth:	1 November 1957
Date of death:	30 November 2017
Cause of death:	I(a) Pulmonary thromboembolism in a woman recovering from a fractured right ankle
Place of death:	2 Swanhurst Green, Caroline Springs, Victoria, 3023

BACKGROUND

1. Maria Kerr was 60 years old when she died. She lived in Caroline Springs with her husband of 39 years, Stuart Kerr. They have two adult children and grandchildren.

2. Mrs Kerr had a known past medical history of thalassemia minor, hypertension, hysterectomy and cholecystectomy. Mrs Kerr was obese with a BMI of 34. She had also been investigated in 2016 for enlarged lymph nodes in her chest, but no clear diagnosis was ever made.

3. Mrs Kerr's death was reported to the Coroner as it fell within the definition of a reportable death in the *Coroners Act 2008.*

4. The role of a coroner is to independently investigate reportable deaths to establish, if possible, identity, medical cause of death and with some exceptions, surrounding circumstances. Surrounding circumstances are limited to events which are sufficiently proximate and causally related to the death. The law is clear that coroners establish facts; they do not lay blame or determine criminal or civil liability.[1]

5. As part of the coronial investigation, I obtained a number of statements from medical clinicians involved in her care as well as a number of hospitals in relation to the prevention, diagnosis and management of venous thrombo-embolism.

6. In writing this Finding, I do not purport to summarise all the evidence but refer to it only in such detail as appears warranted by its forensic significance and the interests of narrative clarity.

MATTERS IN RELATION TO WHICH A FINDING MUST, IF POSSIBLE, BE MADE

Identity of the deceased

7. Maria Kerr was visually identified by her husband, Stuart Kerr on 30 November 2017. Identity was not in issue and required no further investigation.

Medical cause of death

8. On 7 December 2017, Professor Stephen Cordner, Forensic Pathologist at the Victorian Institute of Forensic Medicine performed an autopsy on the body of Mrs Kerr and reviewed

[1] In the coronial jurisdiction facts must be established on the balance of probabilities subject to the principles enunciated in *Briginshaw* v *Briginshaw* (1938) 60 CLR 336. The effect of this and similar authorities is that coroners should not make adverse findings against, or comments about, individuals unless the evidence provides a comfortable level of satisfaction as to those matters taking into account the consequences of such findings or comments.

the Form 83 Victoria Police Report of Death and the post mortem computed tomography (CT) scan.

9. At autopsy the main finding was pulmonary thromboembolism. The pulmonary embolism was confined to the lower lobe of the right lung and there was no embolism to the other parts of the lung. The clots in the right lung demonstrated signs of organisation which means they may have occurred some time/days prior to death. Clots were also found in the inferior vena cava and in the right atrium of the heart.

10. Professor Cordner noted that people recovering from leg fractures are at particular risk from developing deep vein thrombosis. Surgery generally is also a factor which predisposes to the development of clots in the deep veins of the legs. There are other such predisposing factors, including relative immobility, which is often a problem for those having surgery or recovering from fractures. Other such factors are congestive cardiac failure, cancer, blood disorders and smoking.

11. Professor Cordner reported evidence of sarcoidosis in the lungs. This is a disorder of an unknown cause which results in granulomas in the lungs. It can be associated with respiratory symptoms and also symptoms of chronic illness such as lethargy, tiredness and weight loss. According to Professor Cordner this may have also contributed to the background of the development of Mrs Kerr's deep vein thrombosis (DVT).

12. Professor Cordner provided an opinion that on the basis of information available to him at the time, the medical cause of death was best described as 1(a) PULMONARY THROMBOEMBOLISM IN A WOMAN RECOVERING FROM A FRACTURED RIGHT ANKLE.

Circumstances in which the death occurred

13. On the evening of Friday 27 October 2017, Mrs Kerr slipped in her bathroom at home and injured her right ankle. She attended the Emergency Department (ED) at Sunshine Hospital where she was found to have sustained a minimally displaced fracture of the lateral malleolus of her right ankle.

14. Her management was discussed with the Orthopaedic Registrar and she was placed in a plaster back slab (splint) and referred for an urgent fracture clinic appointment in four days' time, 31 October 2017. A referral form in the medical records confirms this. The request indicated that the appointment was urgent and authorised an overbooking of the clinic to accommodate her.

15. It appears that the booking request was received in outpatients on Monday 30 October 2017, but that an urgent appointment made for 31 October 2017, as requested and authorised by the ED and orthopaedic doctors, was not made. It is not indicated why this was not done. Mr Kerr states that as the Western Health Orthopaedic Clinic did not call Mrs Kerr on Monday 30 October 2017, at approximately 4.30pm he called the clinic to confirm the appointment for the next day, when he was advised they were fully booked until 10 November 2017.

16. On 31 October 2017, Mrs Kerr attended the Modern Medical Clinic and saw Dr Rokon Ahmmad in relation to her right ankle. She attended because her plaster had got wet. He changed the plaster from a back slab to a water proof fibre case below knee back slab. He noted that she had an appointment at the adult fracture clinic at Sunshine Hospital for further management on 10 November 2017, with a further follow up on 5 December 2017.

17. On 3 November 2017, Mrs Kerr re-visted with a complaint of right leg pain, due to the sharp edge of the plaster irritating her leg. Dr Ahmmad noticed swelling to her right leg and observed good blood circulation in the right foot and he re-applied the back slab plaster again. According to Dr Ahmmad, Mrs Kerr did not complain of any calf pain of the right leg, fever, breathing difficulties, chest pain or any other signs or symptoms of DVT or pulmonary embolism in any of the visits with him.

18. Mrs Kerr attended the fracture clinic on 10 November 2017 and had another x-ray of her ankle. This reported that the fracture was healing and that it was undisplaced. The notes of Orthopaedic Registrar, Dr Dharsh Musienko indicated that Mrs Kerr was in a bandage, as her back slab had been removed because it was cutting into her. Dr Musienko discussed the case with Orthopaedic Surgeon, Luke Batty, at the clinic. The management plan was to manage conservatively, as it was two weeks post injury. Management was with a below knee plaster cast for four weeks, with review after this time. Mrs Kerr was also referred to physiotherapy at this time. Mrs Kerr did not attend Sunshine Hospital again for this or any other problem.

19. On 30 November 2017 at 9.30am, Mrs Kerr was found by her husband deceased, sitting in her wheelchair in the bathroom of her home.

Family concerns

20. Mrs Kerr's husband wrote to the Coroners Court in December 2017 with a number of concerns, which included that:

    a. No urgent appointment was made at the fracture clinic, which resulted in a two week delay in seeing the orthopaedic surgeon.

b. The GP who replaced Mrs Kerr's cast twice, did not explain the potential for DVT/PE.

c. Mrs Kerr was immobile in a wheelchair the whole time, as she was unable to use crutches.

d. Mrs Kerr regularly complained about swelling in her feet and that her cast was tight and uncomfortable.

21. Western Health became aware of Mrs Kerr's death in February 2018 after concerns were raise by Mr Kerr. Key clinicians from the hospital met with the Kerr family in May 2018 to discuss their specific concerns.

Coronial investigation

22. As a result of Mr Kerr's concerns, I referred this case to the Coroners Prevention Unit (CPU). The role of the CPU is to assist coroners investigating deaths, particularly deaths which occur in a healthcare setting. The CPU is staffed by healthcare professionals, including practising physicians and nurses, who are independent of the health professionals and institutions under consideration. The CPU professionals draw on their medical, nursing and research experience to evaluate the clinical management and care provided in particular cases by reviewing the medical records, the autopsy report and any particular concerns which have been raised.

23. The CPU sought a statement from Dr Paul Eleftheriou, the Chief Medical Officer at Western Health.

Clinical appointment made for 31 October 2017

24. In relation to the clinical appointment made for Mrs Kerr to attend the fracture clinic on 31 October 2017, Dr Eleftheriou reported that an error was made by a staff member in the booking office, which meant that the appointment was not booked. He advised that this staff member has been followed up and the correct procedures have been reinforced. As the appointment was not booked there was no consultation with a clinician until 10 November 2017.

25. Dr Eleftheriou's further statement of 27 May 2019 contradicted his original statement when he said that Mrs Kerr was booked in for a review at the fracture clinic on 7 November 2017, which was a public holiday.

26. After reviewing Dr Eleftheriou's further statement, Mr Kerr sent an email to the Coroners Court on 3 June 2019 and said that he found part of Dr Eleftheriou's statement to be untrue. Mr Kerr said that he was advised by Western Health on Monday 30 October 2017 that the

next available appointment would be 10 November 2017 as they were fully booked until then. Mr Kerr was adamant that there was no mention of an appointment on 7 November 2017 or a public holiday was ever made. These incorrect details caused him great upset.

Orthopaedic review and management of Mrs Kerr on 10 November 2017 at the fracture clinic

27. Mrs Kerr was referred for an urgent orthopaedic review within four days of her injury, with a view to definitive orthopaedic care. Unfortunately, due to the administrative error Mrs Kerr did not receive this appointment. Dr Eleftheriou stated that even if Mrs Kerr had been seen on 31 October 2017, her orthopaedic management plan would not have changed as her fracture was stable and undisplaced and she would not have been recommended for surgery.

28. According to Dr Eleftheriou, when Mrs Kerr was reviewed on 10 November 2017, her fracture was assessed to be healing appropriately. A decision was made to manage Mrs Kerr conservatively with a below knee plaster cast and to review Mrs Kerr in four weeks. Dr Eleftheriou said there was no evidence of DVT at this attendance. Mrs Kerr was referred to physiotherapy to improve her strength and range of motion.

29. Dr Eleftheriou indicated that the delay in review did not change the orthopaedic management of Mrs Kerr. The medical records on 10 November 2017 report '*given 2 weeks post injury – management non-operative and observe'*. This suggested that the treatment plan may have been operative, if Mrs Kerr had been seen sooner, as originally planned. This also accords with Mr Kerr's recollection of that meeting.

30. Due to these concerns, Dr Eleftheriou was asked to provide an additional statement to address the issue of whether Mrs Kerr would have been considered for surgery if she had been seen two weeks earlier. Dr Eleftheriou stated that Mrs Kerr was treated non-operatively because the fracture was minimally displaced and in a most acceptable position. It was felt there was no syndesmotic injury. The Western Health Orthopaedic Unit discussed the case in detail on 10 May 2018 and considered the delay in attendance at the fracture clinic did not in any way influence the decision to continue with cast immobilisation and non-operative management.

Advice to patients in relation to risk of DVT on discharge from an ED or at orthopaedic review

31. Dr Eleftheriou was asked to respond to a question as to whether Western Health has a policy or guideline in relation to the assessment of VTE risk and prophylaxis with patients with who have immobilised lower limb injuries on discharge from the ED. Dr Eleftheriou advised that Western Health has an overarching policy of management of VTE risk but does not have a

specific policy relating to the assessment of VTE risk and prophylaxis in patients with immobilised lower limb injuries being discharged from the Emergency Department.

32. According to Dr Eleftheriou, the decision to not treat Mrs Kerr with prophylactic anticoagulation and to manage her fracture conservatively was appropriate. Dr Eleftheriou stated that it is not routine practice to provide prophylactic anticoagulation to patients with this type of injury. He said there is no reliable, validated, evidence-based medicine to support routine prophylactic anticoagulation in patients with isolated lower leg fractures. Further, he reported that attempts to stratify this group have not been validated and had not been formerly assessed by the proposed UHSM Plaster Cast VTE risk assessment tool. In any event, he considered Mrs Kerr's risk score would have been low and prophylactic anticoagulation would not have been indicated using this scoring system. He said it was important to note that fatal pulmonary embolisms in patients with ankle fractures are incredibly rare.

33. Dr Eleftheriou advised that the ED has implemented procedures for doctors to provide patients with a newly designed patient information sheet about possible risks if they are to have their leg immobilised. He said even if she had received such an information sheet, it is unlikely it would have prevented her death.

34. When Mrs Kerr attended the fracture clinic on 10 November 2017 the orthopaedic doctor noted that Mrs Kerr had removed her back slab because it was 'cutting in'. This suggested that the limb was swollen, but Western Health indicated that there was no evidence of deep vein thrombosis at this attendance. I note that the orthopaedic doctor's notes do not record any specify examination for a swollen or tender calf that might indicate DVT.

35. It would be usual practice at the time of discharge to provide patients with written instructions about plaster care and any concerning signs and symptoms should require medical review. It is not clear from the medical notes or Dr Eleftheriou's statement if Mrs Kerr received any specific advice regarding the aftercare of her fracture and/or any concerning signs or symptoms which may require medical review.

36. I specifically note there is no evidence in the Western Health medical records that indicate there was any consideration of VTE risk in Mrs Kerr, even when she presented to the fracture clinic with a history suggestive of pain and swelling in her leg, which required the removal of the cast. Such consideration would have involved a discussion with Mrs Kerr and her family and it is clear from the family's concerns that this did not occur.

37. Dr Eleftheriou stated that it is not recorded in the medical records whether DVT was discussed at the 10 November 2017 consultation with the orthopaedic registrar. He noted that at the

time high risk patients, including women on oral contraceptives, previous DVT or malignancy were prescribed aspirin or clexane. He advised that Western Health Othopaedic Unit now has a policy of all patients immobilised for such ankle fractures be given aspirin (100mg) daily as a minimum.

Conclusions

38. Mrs Kerr's care at Western Health in both the Emergency Department and at the Fracture Clinic was extensively reviewed by the Director of Sunshine ED, the Head of Orthopaedics and the morbidity and mortality meetings. Dr Eleftheriou conceded that while an error was made in relation to Mrs Kerr's urgent fracture clinic appointment, it was determined that her clinical care was appropriate. Dr Elfetheriou advised that the Western Health Orthopaedic Unit now has a policy for DVT prophylaxis in patients with lower limb fractures and immobilisation in a cast. Aspirin is recommended, and high risk patients receive other anticoagulants. All patients are also encouraged to mobilise and move their toes whilst in the cast.

39. The CPU also reviewed all of the records and advised that Mrs Kerr's missed appointment on 31 October 2017, her initial diagnosis and management of her fracture was appropriate in the circumstances.

VTE risk assessment

40. VTE risk assessment and prevention is widely practised in hospital inpatient services and there are several well publicised guidelines and standards. However, in 2017 there did not appear to be an accepted guideline or standard for non-admitted patients, such as Mrs Kerr. The relevant clinical standard was rescinded in 2016.

41. As part of their review, the CPU surveyed 10 major Victorian metropolitan and regional health services about the practice in this area. Whilst all health services had well established guidelines and procedures for inpatients, only one of the services surveyed had a guideline that referred to VTE risk assessment and management of patients being discharged from an ED, which was from Eastern Health who have a brochure entitled "Stop the Clot" which provides information to patients about signs and symptoms for DVT and PE.

42. In 2014, the NSW Clinical Excellence Commission (CEC) published a prevention of venous thromboembolism 'policy directive' that included a section specifically addressing patients being discharged from an ED:

Adult patients to be discharged home for an Emergency Department who, as a result of their acute illness or injury (including interventions such as leg casts/braces) have significantly reduced mobility relative to normal state must undergo VTE risk assessment and be prescribed appropriate prophylaxis by an Emergency Department clinician prior to leaving the Emergency Department. All other patients to be discharged home from an Emergency Department do not need to be assessed for VTE risk.

43. This NSW CEC policy directive has recently been incorporated into the Australian Commission on Safety and Quality in Healthcare *Venous Thromboembolism Prevention Clinical Care Standard* (October 2018) (New VTE standard). The New VTE standard now specifically references application of the VTE prevention standard to ED patients being discharged home, when they have "*significantly reduced mobility compared to their normal state*". The New VTE standard specifically defines 'significantly reduced mobility' as patients who are "*bedbound, unable to walk unaided or likely to spend a substantial proportion of the day in bed or in a chair*".

44. Having now considered all of the evidence, I am satisfied that the circumstances no further investigation is required.

FINDINGS

45. Pursuant to section 67(1) of the *Coroners Act 2008*, I make the following findings connected with the death:

    (a) the identity of the deceased was Maria Kerr, born on 1 November 1957; and

    (b) Mrs Kerr died on 30 November 2017 from 1(a) *Pulmonary thromboembolism in a woman recovering from a fractured right ankle*;

    (c) in the circumstances described above.

46. Having considered the evidence of Dr Elfetheriou, I am satisfied the medical care and management of Mrs Kerr was appropriate in the circumstances. I acknowledge that the Western Health ED has implemented a newly designed patent information sheet to give to patients being discharged from the ED about possible risks associated with leg immobilisation. I further acknowledge that Western Health Orthopaedic Unit have implemented a policy for DVT prophylactics in patients with lower limb fractures and immobilisation in a cast, including that all patients now have aspirin recommended and are encouraged to mobilise and move their toes whilst in the cast.

47. I wish to express my sincere condolences to Mrs Kerr's family. I acknowledge the grief and devastation that you have endured as a result of your loss.

COMMENT

48. Pursuant to section 67(3) of the *Coroners Act 2008*, I make the following comment:

> The new clinical standard *Venous Thromboembolism Prevention Clinical Care Standard* (October 2018) now presents an opportunity for Victorian health service Emergency Departments to review their current policies and procedures in relation to VTE risk assessment and management on patients who are discharged and at an increased risk of VTE/PE due to their immobility. As such I have made a recommendation in line with this.

RECOMMENDATION

49. Pursuant to section 72(2) of the *Coroners Act 2008*, I make the following recommendations:

> TO SAFER CARE VICTORIA – EMERGENCY CARE CLINICAL NETWORK – to develop, implement and disseminate an Emergency Department Practice Update to be distributed to all Victorian health service Emergency Departments advising of the new clinical standard *Venous Thromboembolism Prevention Clinical Care Standard* (October 2018) and their need to ensure their policies and procedures are up-to-date, specifically in relation to VTE risk management of patients who are discharged from an Emergency Department with significantly reduced mobility compared to their normal state.

PUBLICATION

50. I direct that this recommendation be published on the internet pursuant to section 73(1A) of the *Coroners Act 2008*.

I direct that a copy of this finding be provided to the following:

The family of Mrs Kerr;

Dr Paul Eleftheriou, Chief Executive Officer, Western Health

Ms Nicola Caras, Western Health

Ms Laura Hewett, Emergency Care Clinical Network, Safer Care Victoria

Information recipients.

Signature:

JACQUI HAWKINS
Coroner
Date: 7 June 2019