IN THE CORONERS COURT
OF VICTORIA
AT MELBOURNE

COR 2021 001639

FINDING INTO DEATH WITHOUT INQUEST

Form 38 Rule 63(2)

*Section 67 of the **Coroners Act 2008***

Findings of:	Coroner Leveasque Peterson
Deceased:	Susanne Keating
Date of birth:	18 October 1956
Date of death:	7 March 2021
Cause of death:	1(a) Presumed massive pulmonary embolus
Place of death:	St John of God Hospital, 80 Myers Street, Geelong, Victoria, 3220
Keywords:	Pulmonary embolism, deep vein thrombosis, morbid obesity, delayed diagnosis, recommendation

INTRODUCTION

1. On 7 March 2021, Susanne Keating was 64 years old when she died at the St John of God Hospital (**SJOG**). She is survived by her husband and son.

2. Mrs Keating's medical history included Deep Vein Thrombosis (**DVT**), pulmonary embolus (**PE**) and morbid obesity. Mrs Keating was not on any regular medications.

THE CORONIAL INVESTIGATION

3. Mrs Keating's death was not initially reported to the Coroner by the SJOG medical staff who completed the death certificate. The Registry of Births, Deaths, and Marriages informed the coroner of the death. The coroner determined that Mrs Keating's death was a reportable death as defined in the *Coroners Act 2008* (**the Act**). Reportable deaths include deaths that are unexpected, unnatural, or violent or result from accident or injury.

4. The role of a coroner is to independently investigate reportable deaths to establish, if possible, identity, medical cause of death, and surrounding circumstances. Surrounding circumstances are limited to events which are sufficiently proximate and causally related to the death. The purpose of a coronial investigation is to establish the facts, not to cast blame or determine criminal or civil liability.

5. Under the Act, coroners also have the important functions of helping to prevent deaths and promoting public health and safety and the administration of justice through the making of comments or recommendations in appropriate cases about any matter connected to the death under investigation.

6. Victoria Police assigned an officer to be the Coroner's Investigator for the investigation of Mrs Keating's death. The Coroner's Investigator, Leading Senior Constable King Taylor, conducted inquiries on my behalf, including taking statements from witnesses – such as family, the forensic pathologist, treating clinicians and investigating officers – and submitted a coronial brief of evidence.

7. This finding draws on the totality of the coronial investigation into the death of Mrs Keating including evidence contained in the coronial brief. Whilst I have reviewed all the material, I

will only refer to that which is directly relevant to my findings or necessary for narrative clarity. In the coronial jurisdiction, facts must be established on the balance of probabilities.[1]

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

Circumstances in which the death occurred

8. On 6 March 2021, Mrs Keating attended General Practitioner Dr Saater Tine due to a two-day history of occasional cough and shortness of breath. On examination, Mrs Keating did not have any respiratory distress, but her oxygen saturation was somewhat low at 95%. Her blood pressure was 156/89 with a pulse rate of 81 beats per minute and a dual heart sound. To rule out a PE, Mrs Keating was referred to the Emergency Department (**ED**) of the University Hospital Geelong (**UHG**).

9. Whilst enroute to the hospital, Mrs Keating undertook a COVID-19 test at a North Geelong drive through testing station. She arrived at the UHG ED at 5:57pm and was assessed by triage nurses. Mrs Keating was deemed a Category 3 patient which meant that she should be assessed and treated by a doctor within 30 minutes.

10. The UHG ED is split into geographical areas: Red, Green, and Blue, where different types of patients are directed. Mrs Keating was placed in the Blue Area which was for patients with general physical or mental health related issues that did not require cardiac monitoring. The Blue area also had isolation beds within it for patients with suspected COVID-19 (**SCOVID**) or patients who had been diagnosed with COVID-19. These beds could also be used by patients who were not SCOVID.

11. As Mrs Keating was awaiting her the results of her earlier COVID-19 test, she was asked to wait in the SCOVID waiting room. This area is separate to the ED waiting room and could be viewed from the triage window. SCOVID patients required a SCOVID bed (an isolated bed) to enable tests and examinations to be undertaken away from the regular ED patients. At this time, there were no available SCOVID beds.

12. Mrs Keating was reviewed by Consultant Emergency Physician Dr Melanie Lloyd in the waiting room at 7:40 pm (100 minutes after triage). Dr Lloyd was rostered to cover the Short

[1] 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.

Stay Unit (**SSU**) as well as the Blue Area of the ED where the SCOVID patients were reviewed. Mrs Keating detailed to Dr Lloyd her shortness of breath and also described having a runny nose, dry cough and headache.

13. Dr Lloyd was aware of Mrs Keating's history of PE and that she was not taking blood thinners at this time. Dr Lloyd considered PE as a differential diagnosis and ordered blood tests, a chest x-ray (which subsequently returned normal results) as well as an ECG for when Mrs Keating managed to get into a cubicle. Whilst Dr Lloyd did not enter a consultation note in the electronic medical record, she entered information in the 'comments' section of the medical record that Mrs Keating required a rapid PCR COVID test and was likely to need a CT Pulmonary Angiogram (**CTPA**). These comments were available to other medical staff.

14. According to Triage Nurse Maxwell, there were 30-40 patients in the waiting room waiting to either be seen by a doctor or waiting for a bed at the time of the handover which commenced at 9:00 pm.

15. Shortly before 10pm, the Emergency Registrar Dr Madelaine Hubel, assigned Mrs Keating to her list of patients. As there were still no SCOVID beds available, there was no physical space to conduct a consultation. Consequently, Dr Hubel called Mrs Keating on her mobile phone to take a history. Once again, PE was considered the likely diagnosis with a differential diagnosis of myocardial infarction. Dr Hubel ordered further blood tests including a D-dimer, an ECG, and a troponin.

16. Dr Hubel discussed the case with Dr Lloyd who was keen to expedite Mrs Keating's care. It was determined that Mrs Keating required a rapid COVID test (a Qiagen test) to expedite her results. However, as this test required a SCOVID bed and none were available, the test could not be undertaken, nor could blood tests or an ECG. Dr Hubel continued to try and locate an appropriate space for a SCOVID patient to be assessed but was unable to do so prior to her shift finishing.

17. Just prior to 11pm, paramedics from Ambulance Victoria advised that they were bringing in six patients from a motor vehicle accident in the next 30 minutes. Dr Lloyd considered that this may overwhelm the ED's capacity to cope and discussed with the nurse in charge (**ED**

NIC) whether a 'Code-Brown'[2] stand-by was in order. The ED NIC was able to send the six admitted patients to the ward and so it was felt that a Code Brown was unnecessary at that time.

18. At 11pm, Dr Lloyd and Dr Hubel commenced the handover process for patients, including Mrs. Keating, to Registrar Dr Teak McPadden. At 12.47 am Dr Hubel recorded in Mrs Keating's medical record, that she had handed over to Dr McPadden. It was noted that none of the ordered investigations had been performed to this point, and it was decided to order the gold standard test to diagnose PE, a CTPA.

19. Before the arrival of the anticipated motor vehicle accident patients, Dr Lloyd was advised that Ambulance Victoria was bringing in two additional patients from another vehicle collision as well as recently discharged child with recurrent seizures. Police were also bringing in a restrained patient for mental health assessment. At this time, Dr Lloyd, as well as the other ED consultant, Dr Melissa White, the ED NIC, and the hospital bed manager, considered that the combination of high acuity patients, volume of unseen patients and lack of available treatment spaces warranted a Code Brown. Dr Lloyd asked the executive on call for this to be declared but was declined. Dr Lloyd was advised to continue to expedite sending admitted patients to the wards.

20. At approximately 1.00am, Dr White announced to the ED patients in the waiting areas that due to excessive demand, there would be further delays to assessment and treatment. Patients were advised to consider seeing their General Practitioner if they could wait until then or attend nearby private emergency departments. Patients were also advised that if they felt they needed to wait however, there would be a delay. Dr White asked that anyone who was intending to leave the ED inform the ward clerk or triage nurse. These actions were part of Barwon Health's Code Brown process (though the code itself was not formally activated) and utilised in an attempt to decrease workload. Dr Lloyd subsequently continued to work until 4am.

Mrs Keating's attendance at the SJOG

[2] A hospital emergency response code used to effectively deal with any external incident, that threatens to overwhelm or disrupt health service capabilities. This process can call in extra clinical staff (that are not on call to help), open parts of the hospital that are closed so they can take patients from the ED, discharge patients from the wards if possible. Depending on the size of the disaster, other health services may also become involved.

21. At this point, Mrs Keating left the UHG ED to attend the SJOG which was approximately two blocks away. Upon arrival, she was triaged as a Category 3 patient and moved to the SCOVID area of the ED. She underwent a primary assessment and reported mild to moderate shortness of breath.

22. At 1.58am, Mrs Keating was reviewed by the Emergency Chief Medical Officer who noted that she was pale, sweating heavily and struggling for breath. Oxygen was applied and intravenous access was obtained. At 2:12am, Mrs Keating went into cardiac arrest and cardiopulmonary resuscitation (**CPR**) was commenced. A Code Blue emergency was called with an intensive care team arriving to assist.

23. Following 30 minutes of CPR with no return of circulation, resuscitation efforts were ceased in consultation with Mrs Keating's family. Mrs Keating was subsequently declared deceased.

24. Her death certificate was completed by the SJOG medical staff with the 'disease or condition directly leading to death' recorded as '*presumed massive pulmonary embolus*.'

Identity of the deceased

25. On 7 March 2021, Dr Stephanie Ivkovic signed a medical certificate cause of death and confirmed the identity of Susanne Keating, born 18 October 1956.

26. Identity is not in dispute and requires no further investigation.

Medical cause of death

27. As Mrs Keating's death was reported to the Coroner by the Registry of Births, Deaths and Marriages, there was no Medical Examiner's Report to confirm the diagnosis of pulmonary embolism.

28. As this diagnosis has not been challenged, I accept the cause of death listed in the medical certificate cause of death completed by Dr Ivkovic at the SJOG.

REVIEW OF CARE

29. On review of the brief of evidence, a number of questions arose regarding Mrs Keating's time at UHG.

30. I referred this matter to the Health and Medical Investigations Team (**HMIT**) of the Coroners Prevention Unit (**CPU**)[3] for review. The HMIT considered the available evidence in this matter and provided a written report. The HMIT analysis has been of assistance, however I have not accepted the report findings in full.

31. The HMIT noted Mrs Keating had provided UHG with her medical history, including PE, within moments of arriving, yet she left UHG undiagnosed and untreated six hours after arriving and died an hour later at another hospital.

32. The HMIT considered Mrs Keating died as a result of a delay in diagnosis and treatment. I accept the delay in diagnosing Mrs Keating's PE, and the correlating delay in treatment did contribute to Mrs Keating's death. However, the HMIT went as far as to assert the cause of the delay in diagnosis and treatment was the result of the overcrowding and understaffing that UHG experienced that night.

33. In the absence of a full autopsy, I do not have sufficient evidence to accept the second limb of the HMIT conclusions. Whilst it is clear UHG experienced a surge in patients leading to acknowledged delays for waiting patients, I am unable to be comfortably satisfied there was a causal connection between this delay and Mrs Keating's death shortly after she left UHG.

Overcrowding in the ED

34. Like many of the Victorian health services at that time, Barwon Health experienced significant challenges with inpatient bed access that had a deleterious effect on the manner in which UHG could service the community.

35. The Australasian College for Emergency Medicine (**ACEM**) defines ED overcrowding as the situation where:

[3] The Coroners Prevention Unit (CPU) was established in 2008 to strengthen the prevention role of the coroner. The unit assists the Coroner with research in matters related to public health and safety and in relation to the formulation of prevention recommendations. The CPU also reviews medical care and treatment in cases referred by the coroner. The CPU is comprised of health professionals with training in a range of areas including medicine, nursing, public health, and mental health.

'*ED function is impeded because the number of patients exceeds either the physical and/or staffing capacity of the ED, whether they are waiting to be seen, undergoing assessment and treatment, or waiting for departure.*'[4]

36. Several studies from overseas reveal that patients seen and discharged from the ED during periods of overcrowding '*have a higher risk of mortality and hospitalisation within 7 days*.'[5] Similarly, an Australian study has also confirmed the association between ED overcrowding and mortality[6] and a recent New Zealand finding suggests that *'system issues related to long ED stays may be most important in the link between ED crowding and mortality.'*[7]

The impact of overcrowding at UHG ED in relation to Mrs Keating

37. In a statement provided by Barwon Health's Chief Medical Officer, Dr Simon Woods, he advised that Mrs Keating's death was reported to Safer Care Victoria as a sentinel event. It was investigated via a Root Cause Analysis (**RCA**) with an external expert (emergency physician).

38. The RCA identified the following root causes and made the following recommendations.

Root Cause 1

39. The waiting room nurse position is not a protected role, and flex-beds are not routinely staffed. Therefore, the waiting room nurse is routinely re-deployed to open flex-beds, causing a lack of waiting room nurses and a delay to transfer of the patients into the ED for assessment and treatment.

[4] ACEM position statement on Emergency Department overcrowding dated March 2021 accessed at https://acem.org.au/getmedia/dd609f9a-9ead-473d-9786-d5518cc58298/Statement_on_Emergency_Department_Overcrowding#:~:text=ACEM%20believes%20that%20ED%20overcrowding,Australian%20and%20New%20Zealand%20EDs.&text=This%20statement%20is%20applicable%20to,and%20hospital%20executives%20and%20administrators.

[5] Guttmann A, Schull MJ, Vermeulen MJ, Stukel TA *Association between waiting times and short-term mortality and hospital admission after departure from emergency department: population-based cohort study from Ontario, Canada.* BMJ. 2011;342:d2983. doi:10.1136/bmj.d2983

[6] Richardson DB, *Increase in patient mortality at 10 days associated with emergency department overcrowding.* The Medical Journal of Australia 2006;184(5):213-216. doi:10.5694/j.1326-5377.2006.tb00204.x

[7] Jones PG, van der Werf B *Emergency department crowding and mortality for patients presenting to emergency departments in New Zealand*. Emerg Med Australas. 2020;n/a(n/a). doi:https://doi.org/10.1111/1742-6723.13699

40. It was recommended to extend and protect waiting room nurse hours to cover evenings to support re-triage and treatment of patients not seen or assessed within Triage Category wait times.

41. Barwon Health advised this recommendation has been completed, with an extra triage nurse allocated from 10am to 2am.

42. It was also recommended to formally discuss the need to open flex-beds in the ED (a role the waiting room nurse was commonly seconded to) at daily bed meetings to attempt to source other staff for that role.

43. Dr Woods indicated that this recommendation is in progress and will be implemented by the ED Nurse Unit Manager.

Root Cause 2

44. Rostering does not allow for anticipated sick leave and therefore, there were insufficient nursing resources in the ED. Consequently, ED staff were unable to keep up with clinical care demands.

45. It was recommended to create a map pattern of demand on staffing across the week to assess whether current clinical staffing patterns are optimal.

46. Whilst ED senior medical staffing levels have been increased, Dr Woods rejected the premise that ACEM staffing recommendations were a benchmark or standard for the following reasons:

    a. ACEM staffing guidelines are not mandated the way nursing ratios are in Victoria.

    b. ACEM guidelines are based on the premise that workload is dependent on patient presentation, but Dr Woods states that he believes the *'challenge is more about being able to manage major fluctuations in activity, rather than absolute staffing numbers.'* It is unclear what evidence Dr Woods has relied on to support this assertion.

Root Cause 3

47. The ED was at capacity with an influx of high acuity patients, which resulted in being unable to move patients from the waiting room into the ED. The demand in ED was therefore greater than capacity, with no available physical assessment space.

48. It was recommended to conduct a formal hospital wide (ED and all directorates) review of current surge response to ensure rapid flow of patients to the ward at times of surge and overcrowding.

49. A statement from UHG ED Director Dr Belinda Hibble indicated that as of July 2022, this recommendation had not been implemented.

50. It was also recommended to increase the number of criteria-led direct admission patient categories for each speciality and set targets for same.

51. Dr Hibble noted that as of July 2022, while some hospital units have written policy for this, clinical variability is such that it is only rarely enacted, and no data is being collected to assess its effectiveness.

Root Cause 4

52. UHG was at greater than capacity (normal for hospital), with an influx of high acuity patients, therefore low patient flow (National Emergency Access Target to ward was 13.7%) greater than capacity, therefore no available physical assessment space.

53. It was recommended to increase ED assessment and treatment spaces as part of the new Mental Health Hub, with commensurate increase in medical and nursing staffing. Increased mental health space will release general assessment space.

54. Dr Hibble noted that as of June 2022, the 5-bed mental health hub remains closed due to staffing shortages. The HMIT does not consider that the opening of the mental health hub will significantly affect ED overcrowding, though it will likely result in a better patient experience for mental health patients.

Additional Learnings

55. Whilst defined as a learning rather than a finding, the RCA considered the SCOVID isolation precautions may have delayed physical assessment and treatment. I accept that the need for infection control can give rise to other risks such as a delay in treatment and this is a difficult clinical balancing exercise.

56. In response it was recommended to review SCOVID pathways in ED – determine if it is feasible to reduce delays to assessment and treatment for SCOVID pathways, and it was

recommended to increase the use of Point Of Care Testing for assessment of patients with possible infectious diseases.

57. This recommendation has been completed.

Internal Review conducted by Dr Woods

58. Dr Woods stated that in addition to the sentinel event review, he performed his own internal review. It is unclear when or why this additional review was performed and if any other person participated in the review. Dr Woods' review had the following findings and recommendations:

    a. The existing system could not cope with a surge of this magnitude.

        i. Dr Woods recommended a comprehensive review of the models of care, staffing plans and surge response of the ED will be conducted.

    b. The waiting room nurse is redeployed at times of surge, limiting the ability to monitor waiting room patients. This is identical to the RCA finding and its recommendation which was discussed above.

    c. There is a finite capacity of assessment spaces in the ED, which was exceeded.

        i. A new ED is planned as part of the hospital's Facilities Masterplan, which responds to the Clinical Services Strategic Plan. This is a long-term plan, and a new ED is not expected before 2030. (Additionally, in her statement, Dr Hibble stated that a new paediatric ED will be opening in 2023 as part of a new Women's and Children's Hospital which will open incrementally between 2025 and 2029). However, it is unclear to the HMIT how many extra treatment spaces this will result in.

59. Additionally, Dr Woods stated that the Department of Health agreed to permanently fund an additional 30 inpatient beds in what was previously 'Building B' of Geelong Private Hospital which would allow patients to move out of the ED more quickly. Dr Hibble indicated that the hospital has submitted its business case to the Department of Health but noted that it has not been possible to open the beds in Building B due to ongoing staff shortages.

FINDINGS AND CONCLUSION

60. Pursuant to section 67(1) of the *Coroners Act 2008* I make the following findings:

    a. the identity of the deceased was Susanne Keating, born 18 October 1956;

    b. the death occurred on 7 March 2021 at St John of God Hospital, 80 Myers Street, Geelong, Victoria, 3220, from 1(a) presumed massive pulmonary embolus; and

    c. the death occurred in the circumstances described above.

61. While I make no criticism of individual clinicians that attended to Mrs Keating at UHG, it is possible that earlier testing would have prevented Mrs Keating's death.

62. The Victorian State Government has pledged to invest $12 billion dollars into the health system.[8] The outcome of this injection of funding remains to be seen and will require continued monitoring over time.

RECOMMENDATIONS

Pursuant to section 72(2) of the Act, I make the following recommendation:

1. I recommend that **Barwon Health** staff the Emergency Department of University Hospital Geelong to *at least* the minimum levels recommended by ACEM G23.

I extend my sincere condolences to Mrs Keating's family for their loss and am hopeful that the recommendation above may prevent future deaths in similar circumstances.

Pursuant to section 73(1B) of the Act, I order that this finding be published on the Coroners Court of Victoria website in accordance with the rules.

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

Barry Keating, Senior Next of Kin

Josh Keating, Senior Next of Kin

Aileen Kitson, St John of God Health Care

Kate Mellier, Lander & Rogers Lawyers on behalf of Barwon Health

[8] https://www.theage.com.au/politics/victoria/pallas-injects-an-extra-12b-in-push-to-heal-the-health-system-20220502-p5ahvn.html

Lorraine Judd, Barwon Health Safety & Quality Unit

Safer Care Victoria

Australasian College of Emergency Medicine

Victorian Department of Health

Leading Senior Constable King Taylor, Coroner's Investigator

Signature:

Coroner Leveasque Peterson

Date : 21 August 2026

NOTE: Under section 83 of the ***Coroners Act 2008*** ('the Act'), a person with sufficient interest in an investigation may appeal to the Trial Division of the Supreme Court against the findings of a coroner in respect of a death after an investigation. An appeal must be made within 6 months after the day on which the determination is made, unless the Supreme Court grants leave to appeal out of time under section 86 of the Act.