IN THE CORONERS COURT
OF VICTORIA
AT MELBOURNE

Court Reference: COR 2022 005384

FINDING INTO DEATH WITHOUT INQUEST

Form 38 Rule 63(2)
*Section 67 of the **Coroners Act 2008***

Findings of:	Sarah Gebert, Coroner
Deceased:	Mr E[1]
Date of birth:	[redacted] 1955
Date of death:	[redacted] 2022
Cause of death:	1(a) Fulminant liver failure
Place of death:	Warrnambool Base Hospital, Ryot Street, Warrnambool, Victoria
Key words:	Fulminant liver failure, facsimile communication in medical context, delayed recognition of blood results

1. *At the direction of Coroner Sarah Gebert, the name of the deceased has been replaced with a pseudonym to protect his and his family's identities. Identifying details have also been redacted.*

INTRODUCTION

1. On [redacted] 2022, Mr E was 66 years old when he died of liver failure in hospital.

2. At the time of his death, Mr E lived in [redacted].

THE CORONIAL INVESTIGATION

3. Mr E's death was reported to the coroner as it fell within the definition of a reportable death 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. This finding draws on the totality of the coronial investigation into Mr E's death. 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]

Background

7. Mr E's medical history included ulcerative colitis,[2] diverticulitis,[3] asthma, high cholesterol, and high blood pressure. His regular medications included Mesalazine for ulcerative colitis, Olmesartan/amlodipine for blood pressure, and Ventolin for asthma.

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[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.

[2] Ulcerative colitis: a form of chronic inflammatory bowel disease that affects the last part of the bowel.

[3] Diverticulitis: a disease characterised by 'outpouchings' from the last part of the bowel.

8. Mr E was reported to be a light social drinker and he had not smoked cigarettes for more than 30 years.

9. Mr E's family noted that he was a keen golfer and had recently taken up lawn bowls. He had a good diet and looked after himself well.

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

Circumstances in which the death occurred

10. On [redacted] 2022, Mr E's family noted him to be looking well and in good spirits.

11. On [redacted] 2022, Mr E told his family that he was feeling sore and unable to play golf. On [redacted] 2022, he continued to feel unwell.

12. On [redacted] 2022, Mr E presented to his general practitioner, Dr Yagyadut Gupta at the Timboon Medical Clinic, with a complaint of two to three days of discoloured urine. Dr Gupta noted Mr E did *not* have any of the following symptoms: flank/abdominal pain, dysuria, nausea and vomiting, shortness of breath, chest pain, cough and cold, fever, and headaches. He confirmed Mr E had not recently changed any of his regular medications.

13. Mr E gave a history of buying medication at ALDI for pain and itchiness (Hedafen – which is ibuprofen) but he had not taken the medication for a few days. He was otherwise feeling run down and not sleeping well.

14. In a statement provided to the Court, Dr Gupta elaborated on his assessment that day, recalling that Mr E did not appear acutely unwell and did not appear jaundiced. Vitals were within normal parameters. Mr E had showed him a photograph of the medication he had taken. The photo was unclear, and Dr Gupta suspected it could have been Hedanol, which is paracetamol.

15. Dr Gupta considered whether Mr E had sustained acute kidney injury induced by non-steroidal anti-inflammatory drugs, that is ibuprofen. He therefore referred Mr E for blood and urine tests, which Mr E attended to later that day.

16. According to family member [redacted], Mr E had only taken 10 Hedanol tablets from the pack.

17. On [redacted] 2022, the results from Clinical Laboratories were returned to the Timboon Medical Clinic via facsimile, with receipt confirmed by telephone.

18. In his statement, Dr Gupta confirmed the blood results were uploaded to his clinical management program inbox on [redacted] 2022. While he confirmed he had read the results, it is unclear when he specifically accessed the results.

19. According to his family, Mr E felt unwell that day.

20. On [redacted] 2022, Mr E's nephew and friend found him at home in a significantly unwell state. They called for an ambulance but were advised there would be a two-hour wait. Both men carried Mr E to the car and drove him to Timboon District Health Service Urgent Care where he saw Dr Sashika Jayakody.

21. Mr E presented with two days of generalised unwellness, vomiting, pain in the upper back. Dr Jayakody noted that the recent blood results indicated acute liver toxicity. The examination was recorded as largely unremarkable other than Mr E being in rapid atrial fibrillation and having generalised abdominal tenderness, although his blood pressure appears to have fallen over time. Dr Jayakody's impression was atrial fibrillation secondary to colitis and medication-induced acute hepatocellular damage.

22. Supportive therapy for atrial fibrillation, hypotension, and liver failure was given and arrangements made for Mr E to be urgently transferred to South West Health Care, Warrnambool Base Hospital.

23. When assessed at hospital, Mr E was distressed with abdominal pain. Medical staff immediately identified acute hepatic failure as the problem and instituted aggressive and appropriate supportive therapies. Blood tests confirmed hepatic failure. A surgical consultation advised no surgical intervention.

24. Transfer to a tertiary hospital was considered but did not eventuate due to Mr E's continued and rapid deterioration. He was subsequently transitioned to palliative care. Mr E sadly passed away at 7.42pm that evening.

Identity of the deceased

25. On [redacted] 2022, Mr E, born [redacted] 1955, was visually identified by his sister, [redacted].

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

Medical cause of death

27. Forensic Pathologist, Dr Brian Beer, from the Victorian Institute of Forensic Medicine (**VIFM**), conducted an autopsy on [redacted] 2022 and provided a written report of his findings dated [redacted] 2022.

28. The post-mortem examination revealed extensive liver necrosis consistent with the ante-mortem liver function test findings. There was a mild degree of colitis consistent with the known ante-mortem history of ulcerative colitis and the reported level of inflammatory activity. There was no evidence of ischaemic/infarcted bowel, and no evidence of cholecystitis. There was no significant morphological renal disease identified.

29. Toxicological analysis of post-mortem samples identified the presence of fentanyl,[4] amlodipine,[5] metoprolol,[6] ondansetron,[7] metoclopramide,[8] ketamine,[9] and lignocaine.[10]

30. The blood C reactive protein (**CRP**) was moderately raised. A procalcitonin level was also raised. These findings were consistent with a non-specific inflammatory response such as to the liver parenchymal necrosis and did not necessarily indicate infection. There was no indication of sepsis either from the autopsy findings or the biochemical and microbiology findings. The tryptase level was normal.

31. Dr Beer was of the opinion that Mr E's cause of death was acute fulminant liver failure due to extensive liver parenchymal necrosis.

32. He went on to note that differential diagnosis of acute liver failure is wide and includes the spectrum of drug-induced liver injury – paracetamol toxicity, idiosyncratic drug reactions, herbal medicines/traditional remedies toxicity, and toxin exposure including mushroom poisoning. Other causes include viral hepatitis, alcoholic hepatitis, sepsis, heat stroke, malignant infiltration, hypoperfusion related ischaemic hepatopathy, autoimmune hepatitis, Wilson's disease, acute fatty liver of pregnancy, Budd-Chiari syndrome, and veno-occlusive disease.

[4] Fentanyl is used in surgical anaesthesia, chronic pain and breakthrough cancer pain.
[5] Amlodipine is indicated for hypertension and angina.
[6] Metoprolol tartrate is an anti-hypertensive drug.
[7] Ondansetron is indicated for post-operative nausea and vomiting cancer chemotherapy.
[8] Metoclopramide is an anti-emetic drug used for the treatment of nausea and vomiting.
[9] Ketamine is an anaesthetic normally used for short and medium duration operations as an induction agent.
[10] Lignocaine (lidocaine) is a local anaesthetic and antiarrhythmic drug.

33. With regard to the known drugs that Mr E was on or had recently taken, ibuprofen associated drug-induced liver injury is reported in the literature but is rare. It is an idiopathic (dose independent) reaction and when it occurs, presents commonly as hepatocellular damage after a short latency period. Mesalazine (which Mr E had recently started for his ulcerative colitis) therapy has been associated with a low rate of serum enzyme elevations and with rare instances of clinically apparent acute liver injury. Vytorin constituents ezetimibe and simvastatin have rarely been associated with hepatotoxicty. Amlodipine and olmesartan is a combination medicine used to treat high blood pressure and amlodipine, though not considered as hepatotoxic, can be attributed as a rare cause of idiopathic drug-induced liver injury. Hepatotoxicity due to herbal medications and dietary supplements should also be considered.

34. Dr Beer provided an opinion that the medical cause of death was *"1(a) Fulminant liver failure"*.

35. I accept Dr Beer's opinion.

FURTHER INVESTIGATION AND REVIEW OF CARE

36. As part of my investigation, I obtained advice from the Coroners Prevention unit (**CPU**)[11] about the medical care Mr E received preceding his death, particularly in regard to whether his death was preventable or whether he should have received earlier medical intervention.

Initial medical care

37. When Mr E attended Dr Gupta on 15 September 2022, he presented with concerning symptoms, but his diagnosis was not yet known. The CPU advised that Dr Gupta's notes were detailed, and he conducted an appropriately thorough examination. Based on this information, Mr E's subsequent diagnosis could not have been expected. Most importantly, Dr Gupta's differential diagnosis was sufficiently broad to request the blood tests that gave the diagnosis, and these blood tests were performed rapidly.

[11] 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.

Delay in the identification of severe, acute liver disease

38. The blood results were sent to Timboon Medical Clinic via facsimile on [redacted] 2022 with receipt confirmed via telephone.

39. On [redacted] 2022, Mr E presented to Timboon District Health Service Urgent Care at which time the blood results were accessed and there was a recognition that they represented severe liver failure, which triggered urgent treatment.

40. It is clear that the blood results were available to Timboon Medical Clinic on [redacted] 2022, but it remains unclear as to whether they were accessed on that day, by whom, and whether any action was taken in response. The Timboon Medical Clinic records do not mention receipt of the results nor any form of notification to Mr E.

41. There was therefore a delay between the results of the blood tests being made available and medical staff recognising they represented severe liver failure and acting on them.

42. Despite this delay, the CPU strongly advised that given the rapidity and severity of the progression of Mr E's liver failure it is likely he would have died even if he had presented to an Emergency Department of a tertiary hospital with a specialised liver service on [redacted] 2022, let alone a remote, rural general practice.

Urgent results sent via facsimile

43. This Court and the CPU have, on many occasions, identified the manifest shortcomings of facsimiles – an outdated technology that seems to survive only in the healthcare industry. These are shortcomings broadly are:

    (a) difficulties in knowing whether the facsimile is being sent to the correct destination; and

    (b) the inability to confirm whether it has actually been received at the correct destination.

44. Assuming the facsimile containing critical information, blood results in this case, arrives at the intended location, its presence and urgency or severity may not be flagged to the relevant clinician for attention; it is difficult to know if or when the clinician sees the facsimile; and historically, recording its receipt and the action taken is often lacking.

45. Coroner Rosemary Carlin (as she then was) highlighted with respect the use of facsimile in medical context:[12]

> *It is difficult to understand why such as antiquated and unreliable means of communication persists at all in the medical profession.*

46. Based on the further learnings about the danger of the continued use of facsimile as a method of communication of urgent blood results arising from this case, I am directing that this finding be provided to Safer Care Victoria and the Department of Health to consider whether it is appropriate for all health services to review channels of communication in light of the potential issues which may raise with the use of facsimile as an effective form of communication in a medical setting and its potential for harm being caused.

Cause of liver failure

47. Mr E died of acute, severe liver failure, but the cause of his liver failure remains unclear.

48. Post-mortem examination and toxicology are the best tests to investigate the cause of liver failure, but Dr Beer was unable to identify a cause. His report included a comprehensive and reasonable discussion of the possible causes, but he was unable to identify a likely cause.

49. The CPU in turn considered the following causes.

50. Alcohol is the most common cause of liver failure and is either acute (uncommon) or chronic (very common). However, there is no evidence of Mr E engaging in an acute binge that would cause acute liver disease. There was also no history of longstanding alcohol misuse to suggest chronic liver disease, and Mr E's liver function tests were normal less than three months earlier on [redacted] 2022.

51. Paracetamol was similarly considered. It is unclear whether or how much paracetamol Mr E may have ingested in the days or weeks prior to his death. Information from [redacted] indicated that Mr E had only taken 10 Hedanol (paracetamol) tablets in the days leading to his death. The CPU noted that if all 10 tablets (500mg) were taken at once, the total dose (equivalent to 5g) would unlikely cause fulminant liver failure. If they were taken over a period of time (usually recommended two tablets up to four times per day), liver injury is extremely unlikely.

[12] Investigation into the death of Mettaloka Malina Halwala, COR 2015 5857, dated 10 May 2018.

52. Paracetamol was not detected in Mr E's blood at post-mortem, but this does not exclude an earlier toxic ingestion remote enough in time for the paracetamol to be metabolised before his death.

53. In addition, any non-steroidal anti-inflammatory drugs he may have taken, and his usual medications are not associated with liver failure. Non-steroidal anti-inflammatory drugs are known to cause kidney toxicity and ulcers, not liver failure.

54. It is possible Mr E consumed other medications or illicit drugs that cause liver failure, but there is no evidence of this having occurred.

55. The CPU noted that there are a number of viruses that can cause liver disease, but these were not found post-mortem and there is no mention of typical risk factors (tattoos, intravenous drug use, blood transfusions, male-to-male sexual activity, overseas travel, etc).

56. The CPU considered whether Mr E may have had exposure to other environmental toxins, but this seemed unlikely. The list of possibilities is vast: contaminants in foods or drugs, household chemicals, farming chemicals, etc.

57. Mr E's family raise the possibility of Ratsak poisoning. However, the CPU advised that brodifacoum (the active ingredient in Ratsak) was not detected in post-mortem blood results. Brodifacoum is considered one of a class of 'Super Warfarins' – a very potent version of the anticoagulant medication warfarin. Although such poisons can cause liver failure the predominant feature and cause of death is bleeding, in almost every and all tissues. There was no evidence of this in life or at post-mortem examination.

58. While Dr Beer also listed numerous rare causes of acute liver failure, the CPU noted that all had characteristic features that were not present in Mr E.

Conclusion regarding medical care

59. The problems with facsimile transmission of critical results are ancient and well described. This case illustrates the inability to be sure the correct person has received, read, and interpreted the responses in a timely manner.

60. However, the CPU concluded that, notwithstanding a possible delay in acting on the abnormal blood results, and the lack of a clear cause of Mr E's liver failure, the severe and rapidly progressive nature of his liver failure suggests it would have been rapidly fatal *even* with

optimal medical management initiated on [redacted] 2022. The CPU was therefore unable to identify any opportunities for prevention.

61. I accept and agree with the CPU's advice.

FINDINGS AND CONCLUSION

62. Pursuant to section 67(1) of the Act I make the following findings:

(a) the identity of the deceased was Mr E, born [redacted] 1955;

(b) the death occurred on [redacted] 2022 at Warrnambool Base Hospital, Ryot Street, Warrnambool, Victoria, from fulminant liver failure; and

(c) the death occurred in the circumstances described above.

RECOMMENDATIONS

63. Pursuant to section 72(2) of the Act, I make the following recommendations:

(a) The continued reliance on facsimile communication of critical or important information in the modern era is inappropriate. I therefore **recommend** that the Practice Manager of **Timboon Medical Clinic** consider discontinuing the use of facsimile for the receipt of pathology results and instead institute a digital critical test result management system that incorporates closed loop communication (defined as communication that ensures receipt and understanding of the communicated material).

I convey my sincere condolences to Mr E's family for their loss.

Pursuant to section 73(1A) of the Act, I order that this finding (in redacted form) 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:

[redacted], senior next of kin
Dr Yagyadut Gupta (care of Avant Law)
Timboon Medical Clinic
South West Healthcare
Western Health
Safer Care Victoria
Victorian Department of Health
Sergeant Andrew King, Victoria Police, reporting member

Signature:

Coroner Sarah Gebert

Date: 18 October 2023

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.