



IN THE CORONERS COURT
OF VICTORIA
AT MELBOURNE

Court Reference: COR 2022 005413

FINDING INTO DEATH WITHOUT INQUEST

Form 38 Rule 63(2)

Section 67 of the Coroners Act 2008

Findings of:	Sarah Gebert, Coroner
Deceased:	TS
Date of birth:	8 January 2021
Date of death:	19 September 2022
Cause of death:	1(a) Group A streptococcus pneumonia
Place of death:	Angliss Hospital, 39 Albert Street, Upper Ferntree Gully, Victoria
Key words:	Group A streptococcus pneumonia

INTRODUCTION

1. On 19 September 2022, TS was 20 months old when he passed away in hospital after a short illness.
2. At the time of his death, Baby T lived in Bayswater with his adoring parents.

THE CORONIAL INVESTIGATION

3. Baby T'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. As part of my investigation, I asked the Coroners Prevention Unit (**CPU**)¹ to review the circumstances of Baby T's death to determine whether there were any prevention opportunities.
7. This finding draws on the totality of the coronial investigation into Baby T'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.²

¹ The CPU was established in 2008 to strengthen the coroner's prevention role and to assist in formulating recommendations following a death. The CPU is comprised of health professionals with training in a range of areas including medicine, nursing, public health and mental health. The CPU may also review the medical care and treatment in cases referred by the coroner as well as assist with research into public health and safety.

² 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.

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

Circumstances in which the death occurred

8. At 2.40pm on 18 September 2022, Baby T presented to Dr Marino Alexopoulos at Vermont Health Care with his parents.
9. Baby T had been unwell for the preceding three days with cough, but this had now resolved. He had tested negative for COVID-19. His parents reported that he had reduced oral intake, no bowel movements for three days, no vomiting, and no fever. Baby T's parents expressed concern about his breathing – he had been groaning since that morning and he had also developed a rash on his abdomen and face.
10. According to Dr Alexopoulos, on examination Baby T was afebrile and appeared alert. He was groaning whilst held by his parents. He was warm and well-perfused without cyanosis. He did not appear to be in respiratory distress or display an increased working of breathing. His chest was clear on auscultation. He had a reddened left eardrum. His throat was not red and his tonsils were not enlarged or with exudate. There were no mouth lesions. Baby T had mild erythema on his left cheek, the perioral region, and his anterior abdomen which blanched under pressure. Dr Alexopoulos determined the rash was consistent with atopic dermatitis or eczema.
11. Dr Alexopoulos diagnosed Baby T with ear infection and constipation. He prescribed amoxicillin (an antibiotic) for five days, hydrocortisone cream for the eczema, and lactulose for the constipation. Dr Alexopoulos asked Baby T's parents to attend again the following day for review and an appointment was made for 9.45am the next morning. He also advised that Baby T should be taken to hospital if there was any increased work of breathing, vomiting, or he was not tolerating fluids.
12. Baby T subsequently presented to Angliss Hospital emergency department at 5.27am the following morning, 19 September 2022, in cardiac arrest. His parents reported that he had become more unwell since Dr Alexopolous' review and was grunting that morning. Baby T had become unresponsive while being held in his father's arms and was subsequently driven to hospital. His mother had provided cardiopulmonary resuscitation (**CPR**) in the car on the way to hospital.
13. According to Dr Martin Koolstra, CPR continued once the family arrived in the emergency department with a Code Blue called. The Advanced Paediatric Life Support protocol was

initiated and the Paediatric Infant Perinatal Emergency Retrieval (**PIPER**) team were called to attend.

14. Resuscitation attempts continued for 80 minutes with no sign of return of spontaneous circulation. Chest x-ray showed significant left-sided opacity which was confirmed to be fluid.
15. Following discussions with the emergency, paediatric, and PIPER teams, resuscitation was ceased. Baby T sadly passed away at 6.48am.

Identity of the deceased

16. On 19 September 2022, TS, born 8 January 2021, was visually identified by his father, PS.
17. Identity is not in dispute and requires no further investigation.

Medical cause of death

18. Forensic Pathologist, Dr Yeliena Baber, from the Victorian Institute of Forensic Medicine (**VIFM**), conducted an autopsy on 21 September 2022 and provided a written report of her findings dated 3 March 2023.
19. The post-mortem examination revealed the cause of death was due to Group A Streptococcus infection of the left lung (pneumonia). *Streptococcus pyogenes* was identified in both lungs and the left pleural fluid.
20. Dr Baber noted that streptococcal infection is known to be fatal in the paediatric population and typically has a rapid terminal clinical course. *Strep pyogenes* most frequently causes acute pharyngotonsillitis and cutaneous infections in school-aged children, but its pathogenic spectrum includes toxin-mediated disease such as streptococcal toxic shock syndrome.
21. There was no evidence, on histology, of established septicaemia.
22. The inflammatory marker was very high which is typical of an acute bacterial pneumonia.
23. Dr Baber provided an opinion that the medical cause of death was “*I(a) Group A streptococcus pneumonia*”. She determined the manner of death was natural causes.
24. I accept Dr Baber’s opinion.

FAMILY CONCERNS

25. In their communication with the Court, Baby T's parents queried whether he would still be alive if they had attended hospital earlier.

FURTHER INVESTIGATION

Coroners Prevention Unit review

26. In light of the family concerns, I obtained advice from the CPU about the circumstances leading to Baby T's death, including whether that were any prevention opportunities.
27. The CPU advised that Baby T's case appears to have involved rapidly progressive invasive Group A Streptococcus disease (**iGAS**).
28. The CPU noted that the diagnosis of iGAS can be difficult as its initial presentation can mimic many other viral illnesses (e.g., sore throat, runny nose, cough), but rapidly progresses with acute deterioration. Given that iGAS can be rapidly progressive, there is a limited window for intervention before irreversible deterioration.
29. Overall, the CPU considered that Dr Alexopoulos' management was reasonable. Baby T did not present as a typical case of iGAS given he had no fever and no sore/red throat. There appeared to be a focus of infection (red tympanic membrane indicative of middle ear infection) and no respiratory symptoms (cough had resolved, no respiratory distress, lungs clear on auscultation).
30. The CPU advised that the commencement of oral amoxicillin was reasonable management. This antibiotic is actually effective against Group A Streptococcus. However, Baby T may have already had early iGAS at the time of presentation and therefore it is likely that he only had one dose of the medication prior to his passing, which would have been insufficient to treat the disease.
31. The CPU considered that Dr Alexopoulos' management plan was reasonable in that he provided safety netting advice (about when to present to hospital) and arranged follow up the next morning.
32. With the benefit of hindsight, the fact that Baby T was groaning and had a red dry rash may have been indicators of the beginnings of iGAS. However, 'groaning' in itself is not a

clear indicator of sepsis, and the appearance of the rash as described in Dr Alexopoulos' statement was somewhat atypical.

33. The CPU did not identify any prevention opportunities in Baby T's case but noted that the Department of Health had issued an alert regarding iGAS in late December 2022 (discussed below).

FINDINGS AND CONCLUSION

34. Pursuant to section 67(1) of the Act I make the following findings:
 - (a) the identity of the deceased was TS, born 8 January 2021;
 - (b) the death occurred on 19 September 2022 at Angliss Hospital, 39 Albert Street, Upper Ferntree Gully, Victoria, from group A streptococcus pneumonia; and
 - (c) the death occurred in the circumstances described above.

COMMENTS

Pursuant to section 67(3) of the Act, I make the following comments connected with the death.

35. In December 2022, Professor Brett Sutton, Chief Health Officer, issued a Health Advisory to health professionals regarding iGAS (updated on 20 March 2023).³
36. Professor Sutton noted that iGAS, including cases of severe illness, particularly among children, had been observed in Victoria since late 2022. Higher than expected levels of iGAS had also been reported interstate and internationally since late 2022, including in the United Kingdom and the United States.
37. Clinicians were therefore advised to be alert to the potential for iGAS among children presenting with sore throat and fever and to consider testing and empiric treatment for patients with signs of Group A Streptococcus infection and urgent hospital referral for those with clinical illness compatible with iGAS.

³ Department of Health, Update on invasive Group A Streptococcal disease, available at: <https://www.health.vic.gov.au/health-advisories/update-on-invasive-group-a-streptococcal-disease>.

38. The Health Advisory provides an explanation of symptoms and those who are most at risk. It recommends the following to health professionals:
- (a) Clinicians across all healthcare settings should be alert for the signs and symptoms of GAS and iGAS infection and should thoroughly evaluate all patients with a clinically compatible illness, including those presenting with sore throat and fever;
 - (b) Clinicians in primary care should consider the diagnosis of streptococcal pharyngitis in children presenting with sore throat. Collect throat swabs for GAS culture, prescribe empiric antibiotics if indicated and refer urgently to hospital those with a clinical illness compatible with iGAS;
 - (c) Be alert to the patient, particularly an infant or child, who is more unwell than you would expect with a viral illness, or who had a viral illness and then became more unwell;
 - (d) Advise parents and guardians of children presenting with suspected viral illnesses to be alert to the signs and symptoms of serious bacterial infection and when to seek immediate medical care;
 - (e) Laboratory investigations for suspected iGAS should include blood cultures, full blood examination and venous blood gas;
 - (f) Management of suspected iGAS should include early resuscitation, empiric antibiotics and urgent escalation. Management in a tertiary centre may be required;
 - (g) Clinicians should seek advice from an infectious diseases physician on definitive management and follow up of cases of iGAS and their contacts.
39. Given the recent increased incidence of iGAS and the importance of clinician awareness of consideration of this diagnosis, I will publish my finding for the purpose of wider public awareness. I will also distribute my finding to the Royal Australian College of General Practitioners as local general practitioners are often the first line of medical enquiry for parents of sick children.

I convey my sincere condolences to Baby T's family for their loss and acknowledge the profound grief caused by the passing of such a young child.

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:

KG and PS, senior next of kin

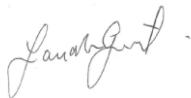
Dr Marino Alexopoulos, Vermont Health Care

Eastern Health

Royal Australian College of General Practitioners

First Constable Samantha Jones, Victoria Police, reporting member

Signature:



Coroner Sarah Gebert

Date: 23 January 2024

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.
